U.S. Department of Agriculture
Natural Resources Conservation Service

NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number NR243A750004G014	2. Amendment Number	3. Award /Project Period Date of Final Signature - 11/01/2028	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) TUSKEGEE UNIVERSITY 1200 W MONTGOMERY RD TUSKEGEE INSTITUTE AL 36088-1923 UEI Number / DUNS Number: U9JCYEXFEEU4 / 128214178 EIN:	

7. NRCS Program Contact Name: GREGORIO Cruz-Gonzalez (b)(6)	8. NRCS Administrative Contact Name: ADAM CARL Phone: (815) 214-2015	9. Recipient Program Contact Name: Uma Karki Phone: (334) 727-8336	10. Recipient Administrative Contact Name: JASMINE JACKSON Phone: (334) 724-4472
11. CFDA 10.937	12. Authority 15 USC 714 et seq	13. Type of Action New Agreement	14. Program Director Name: Uma Karki (b)(6)

15. Project Title/ Description: Expands markets for climate-smart agroforestry in Alabama, Virginia, and Maryland and supports farmer implementation and monitoring of climate-smart practices.

16. Entity Type: T = Historically Black Colleges and Universities

17. Select Funding Type

Select funding type:	☒ Federal	☐ Non-Federal
Original funds total	$4,999,999.00	$0.00
Additional funds total	$0.00	$0.00
Grand total	$4,999,999.00	$0.00

18. Approved Budget

Personnel	$444,008.36	Fringe Benefits	$111,001.78
Travel	$56,945.07	Equipment	$200,000.00
Supplies	$29,378.06	Contractual	$6,134.50
Construction	$0.00	Other	$4,152,531.23
Total Direct Cost	$4,852,294.23	Total Indirect Cost	$147,704.77
		Total Non-Federal Funds	$0.00
		Total Federal Funds Awarded	$4,999,999.00
		Total Approved Budget	$4,999,999.00

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

Name and Title of Authorized Government Representative **KATINA HANSON** Acting Senor Advisor for Climate-Smart Commodities	Signature KATINA HANSON	Digitally signed by KATINA HANSON Date: 2023.11.15 08:57:53 -06'00'	Date
Name and Title of Authorized Recipient Representative **DEXTER ODOM** VP for Business Affairs and CFO	Signature Moroline Washington, Director of Grants and Contracts	Digitally signed by Moroline Washington, Director of Grants and Contracts DN: cn=Moroline Washington, Director of Grants and Contracts, o=Tuskegee University, ou, email=mwashington2@tuskegee.edu, c=US Date: 2023.11.14 16:20:26 -06'00	Date

NONDISCRIMINATION STATEMENT

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW., Washington, DC 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

PRIVACY ACT STATEMENT

The above statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. Section 522a).

Statement of Work

Purpose

The purpose of this agreement, between the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) and Tuskegee 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 $4,999,999.00

TOTAL FEDERAL FUNDS $4,999,999.00
PERSONNEL $361,865.00
FRINGE BENEFITS $90,466.00
TRAVEL $46,410.00
EQUIPMENT $200,000.00
SUPPLIES $23,943.00
CONTRACTUAL $5,000.00
CONSTRUCTION $0.00
OTHER $4,124,610.00 (Includes $1,365,124.00 PRODUCER INCENTIVES)
TOTAL DIRECT COSTS $4,852,294.00
INDIRECT COSTS $147,705.00

TOTAL NON-FEDERAL FUNDS $0.00
PERSONNEL $0.00
FRINGE BENEFITS $0.00
TRAVEL $0.00
EQUIPMENT $0.00
SUPPLIES $0.00
CONTRACTUAL $0.00
CONSTRUCTION (usually n/a) $0.00
OTHER $0.00
PRODUCER INCENTIVES $0.00
TOTAL DIRECT COSTS $0.00
INDIRECT COSTS $0.00

Recipient has an approved Negotiated Indirect Cost Rate Agreement (NICRA) with a rate of 22.7 percent and a base of $650,684.

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

Responsibilities of the Parties:

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

RECIPIENT RESPONSIBILITIES

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

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

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

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

Performance Reports: Quarterly

SF425 Financial Reports: Quarterly

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

Expected Accomplishments and Deliverables

See attached Benchmarks Table and associated Project Narrative.

Resources Required

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

Milestones

See attached Benchmarks Table and associated Project Narrative.

GENERAL TERMS AND CONDITIONS

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

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

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Expanding the Participation of Marginal Producers and Landowners to Promote Climate-Smart Agriculture and Forestry Practices: Continuous Efforts of 1890 Agroforestry Consortium

i. **Executive Summary**

A. **Contact Information**

Dr. Uma Karki, Tuskegee University, Email: ukarki@tuskegee.edu

B. **List of Project Partners**

a. Alabama A&M University
   1. Dr. Srinivasa Rao Mentreddy, PI
   2. Dr. Colmore Christian
   3. Dr. Dedrick Davis
b. Virginia State University
   1. Dr. Vitalis Temu, PI
   2. Dr. Asmare Atalay
   3. Dr. Maru Kering
c. University of Maryland Eastern Shore
   4. Dr. Lila Karki, PI
   5. Dr. Prem Bhandari
d. Tuskegee University
   6. Dr. Anthony Kumi
   7. Dr. Raymon Shange

C. **List of Underserved/Minority-Focused Project Partners**

Same as listed under B.

D. **Compelling Need for the Project**

The grand challenge of feeding nearly 10 billion people by 2050 requires that agriculture overcome several destabilizing factors, including the most challenging climate-change occurrences, to food and water security (Schmidhuber and Tubiello, 2007; Liu et al., 2013; UN, 2014; Firbank et al., 2018). To be sustainable, agricultural production must employ climate-smart (CS) practices that can mitigate climate change by increasing soil-organic carbon (SOC) stocks and drastically reducing greenhouse gas (GHG) emissions. Human activities are accounted for almost all GHG emissions, and agricultural activities accounted for 11% of the total GHG emission in 2020 in the USA (EPA, 2022). The major agricultural components associated with GHG are soil management (>50%), ruminant livestock (>25%), manures (12%), and the remaining GHG emission from lime and urea-fertilizer application, rice cultivation, and burning crop residues (EPA, 2022). The GHG emission from soil can be minimized by 1) reducing soil tillage using no-till drills when seed drilling is required, 2) promoting perennial crops or pastures, 3) applying only the required amount of lime and fertilizers, including nitrogen (N), based on soil-test results, and 4) adding legumes to crop fields (as cover crops) and pastures (overseeding or mixing legume forages in grass pastures) to avoid or minimize the requirements for N-fertilizer application. Similarly, the GHG emission from ruminant livestock can be reduced

by enhancing pasture-based production system, improving pasture quality by adding legumes, and promoting the even distribution of animals, and consequently their excreta (feces and urine) in grazing lands through rotational stocking and installing essential facilities (shelters, water, shade trees, mineral feeders) strategically in the grazing area.

For shade trees, timber-, nut-, leguminous-, fruit-, or fodder-type trees can be planted in open-pastures (pastures without trees) following a suitable silvopastural (CPS 381) design based on producers' needs and market potential of resulting tree products. Moreover, trees can be added to create windbreaks (CPS 380) or alley-cropping systems (CPS 311) in open crop fields and as buffers around water bodies to contain resultant nutrients or other pollutants from crop or livestock production activities. Containment of nutrients in the system means minimizing the requirement for nutrient addition to the system, resulting in reduced production costs and carbon footprints. Tree addition along the sides of crop fields and pasturelands increases carbon sequestration tremendously in addition to their protective benefits to farm buildings, crops, and/or livestock produced in the system. Because of the more extensive root system of trees compared to field crop and pasture species, the recycling of nutrients and water in the systems increases, and the gaseous exchange, soil-microbial diversity and activities, and other biological diversity and activities in the soil increases. All these results promote sustainable production systems and increase carbon sequestration.

Sustainable management of forestry to make them less prone to fire hazards and to derive more economic and environmental benefits is another aspect needing utmost attention in the Southeast, where forests account for 62% of the landcover. Practices like silvopastures after the first and/or second thinning of tree plantations would benefit producers and landowners in multiple ways. This project team envisages training producers and forest landowners on and provides incentives to adopt silvopasture (CPS 381), alley cropping (CPS 311), pasture improvement (CSP 512), and prescribed/rotational grazing systems (CPS 528). The project team, trained county agents, specialists, and invited experts (as deemed necessary) will be involved in educating producers and landowners as well as providing the technical service at the field level to facilitate adoption.

Despite these possibilities explained above for promoting CS production practices, the adoption of such practices currently is minimal, especially in the case of small-scale, limited-resource, historically underserved producers and landowners. The major reasons for such a low adoption are the lack of funds needed to adopt such practices, deficient technical knowledge, inadequate motivation to change from traditional production systems, and lack of support systems and encouragement loop. This project brings a great opportunity for relevant training and education, technical support, and financial incentives for adopting agroforestry-based CS production practices. Through the funds from this project, 1890 Agroforestry Consortium (1890 AC) collaborators will educate, encourage, and provide financial and technical support to producers and landowners and enable them to transform their traditional production systems into a multi-pronged CS and sustainable production system to benefit them socially, environmentally, and economically. Without the funding support from this project, it will be almost impossible for numerous limited-resource producers and landowners adopt the CS agricultural and forestry practices.

E. Approach to Minimize Transaction Costs Associated with Project Activities

The project plans to reach out to multiple vendors to explore the least price possible and negotiate for any discount or bulk price available as applicable while procuring supplies, equipment, and other items. Quotes from the most competitive vendors will be selected to procure required items and pay for services. Tax exempt status of the collaborating universities will be used in all transactions. Needed transactions will be planned well in advance and items procured on time to avoid any last-minute charges or additional charge for expedited shipping. The project team and associated staff will be mindful of these strategies and use them in all project-related transactions.

F. Approach to Reduce Producer Barriers to Implementing CSAF Practices for the Purpose of Marketing Climate-Smart Commodities

To reduce producer barriers to implementing CS Agriculture and Forestry (CSAF) practices, producers' awareness, knowledge, and skills about the practices under this project: silvopasture (CPS 381), alley cropping (CPS 311), pasture improvement (CSP 512), and prescribed/rotational grazing systems (CPS 528) will be enhanced through educational efforts, such as information sessions, training, and demonstration. The project team will provide the technical guidance for implementing the selected practices, help locate the service and input providers required for practice implementation and provide incentives to cover the costs for inputs and services required for practice implementation. The project team will be in close contact with the producers enrolled in the selected practices and figure out ways together with the producers to resolve any other barriers that may arise in implementing the selected practices.

G. Geographic Focus

The project will be implemented in Alabama, Virginia, and Maryland.

H. Project Management Capacity of Partners

The project team consists of 1890 AC members, who have a strong relationship with producers and landowners in the state they are working in currently and in the Southeast because of their continuous work in various fields related to CS practices for numerous years. Most of the current team members were involved in a Southern Sustainable Agricultural Research and Education (SSARE)-funded project related to developing a training handbook and training the trainers, lead landowners, and producers on sustainable agroforestry systems in the Southeast. During this project period (2013-2015) and continuously after that, 1890 AC has been conducting training, workshops, meetings, and conferences about agroforestry for county agents, specialists, producers, and landowners. As a continuum, 1890 AC members from Tuskegee University and Alabama A&M University (AAMU) received a USDA-NIFA-AFRI grant on agroforestry (alley-cropping, silvopasture, and woodland grazing) research and Extension (2015-2020). This project also engaged in exploring the marketing potential of commodities produced from agroforestry systems, one of the CS practices. Several other funded projects received by every member of this team as a principal investigator (PI) and/or co-PI had outreach objective that involved working with producers and/or landowners, conducting on-farm activities, and providing opportunities to

producers for on-farm experiential learning. In a currently ongoing SSARE-funded large-system project, the Tuskegee University team is investigating the challenges experienced by goat producers in the Southeast to market their goats and goat products and developing strategies to overcome those challenges together with producers, vendors, and other stakeholders. Moreover, most of this project team members have Extension appointments and have been working with farmers and landowners for a long time.

Dr. Uma Karki has been leading a pioneering research and Extension work in agroforestry systems, especially silvopastures, sustainable pasture-based animal production systems, and an integrated approach for preventing diseases and parasites in small ruminants for more than a decade now. Dr. Mentreddy has developed a large network of farmers and landowners as most of his projects have on-farm trials, for example specialty vegetables and a high-value medicinal herb, turmeric (*Curcuma longa*). He has initiated alley cropping research in Alabama. Dr. Mentreddy and Dr. Christian have served as experts in a series of more than 25 workshops over the past five years across Alabama, parts of Tennessee, and Mississippi with training content involving forest management, marketing, utilizing NRCS and USDA incentives, and more. Dr. Lila Karki led the marketing research for agroforestry commodities, did economic evaluation for agroforestry-based production systems vs. the traditional systems, conducted cost-benefit analysis of two young agroforestry-based alley cropping systems, performed impact analysis of an education program on a year-round forage production and grazing management system, and has contributed to several other economic evaluation research and education efforts. Dr. Bhandari as value added agricultural marketing specialist will furnish farmers in calculating premium price, exploring, and expanding markets for CS commodities. Similarly, Dr. Temu has numerous years of experience working in pasture-based small-ruminant production systems, and Drs. Kumi, Shange, Kering, Atalay, and Davis have a sound background in soil science and multiple years of working experience. In addition to the individual capacity of collaborators, all collaborating institutions have a strong working network with farmers and landowners in their respective states through the Cooperative Extension offices. Moreover, these institutions have a robust capacity of securing, implementing, and successfully completing funded projects.

ii. A Plan to Pilot Climate-Smart Agriculture and/or Forestry Practices (CSAF) on a Large Scale

A. A Description of CSAF Practices to be Deployed

This project plans to implement silvopastures (CPS 381), alley-cropping (CPS 311), rotational/prescribed grazing systems (CPS 528) and pasture improvement (CPS 512). Other relevant practices with alley cropping and silvopasture will be tree/shrub establishment (CPS 612), developing watering facilities (CPS 614) and fencing (CPS 382) will be related to prescribed grazing and alley cropping, and nutrient management (CPS 590) will be related to pasture improvement, silvopasture development, and alley cropping. The deployment of any of these practices will depend on the interest and need of and as appropriate to the land type and/or production practices that producers and landowners (to be enrolled) are currently undertaking. For livestock producers, for example, silvopasture would be of interest and beneficial. With 62% landcover by woodlands, opportunities for developing silvopastures exists after the first or second thinning of timber trees. Additionally, farmers may plant selected tree species in the

existing pastures to develop silvopastures. Similarly, crop and/or vegetable producers would be interested in developing alley cropping systems to increase the household cash-flow and sequester significant amounts of carbon simultaneously. In a NIFA-AFRI-funded project, cover-crop-based alley cropping of specialty vegetables in loblolly pine (*Pinus taeda* L.) and pecan tree (*Carya illinoinensis* (Wangenh.) K. Koch) stands was seen as a viable income-generating practice by farmers who visited the experiment site at AAMU.

In this project, the candidate tree species are persimmon (*Diospyros virginiana* L.) and/or fig (*Ficus* L.) for developing alley cropping systems. Candidate alley-crop species are colored bell peppers (*Capsicum annuum* L.), poblano peppers (*C. annuum* L. 'poblano'), eggplants (*Solanum melongena* L.), blueberry (*Vaccinium* L.), ginger (*Zingiber* Mill.), and pumpkin (*Cucurbita* spp.). Selected tree species suitable for the site and interest of the participants will be planted in rows (15-20' tree-tree distance in a row) and selected alley crops will be grown in the wide alleys (40-60') between tree rows. Winter cover crop – 50:50 mix of suitable legume (clovers) and annual ryegrass (*Lolium multiflorum* Lam.) will be planted annually during cool season in the alleys where alley crops will be grown during their growing seasons. From alley-cropping practices, the expected commodities are persimmon, fig, peppers, egg plants, blueberries, ginger, and pumpkins.

For pasture improvement, leguminous forages, such as clovers, vetches, and cool-season grasses are candidate forages for overseeding the existing pastures for enhancing cool-season grazing and continuously sequestering carbon. Similarly, cowpeas (*Vigna unguiculata* (L.) Walp.), sunn hemp (*Crotalaria juncea* L.), sericea lespedeza (*Lespedeza cuneata* (Dum. Cours.) G. Don) are candidate warm-season legumes for improving warm-season pastures, increasing biomass production, carbon sequestration, and minimizing the need for nitrogen fertilizer. Perennial grass forages suitable to the site and soil type may also be used for pasture improvement. From silvopasture, improved pasture, or prescribed grazing practices, the expected commodities are live animals (small ruminants) and/or their products (meat).

For developing any of the selected CS practices on the farms of the enrolled farmers and landowners, Agroforestry Handbook published by 1890 AC (Karki, 2015) and other relevant materials (Ball et al., 2007; Karki, 2013, 2017) will be used as references.

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

The 1890 Agroforestry Consortium recognizes the critical role that landowner participants play in successful extension and outreach programs, climate change mitigation, building community capital, enhancing the socio-economic status of rural communities, stemming land loss, and promoting sustainable forestry (Christian et al., 2013). Thus, the engagement and participation of historically underserved producers will form an essential pillar of this project. Following criteria have been set by USDA/NRCS (n.d.) to qualify for a limited resource farmer or rancher: 1) with direct or indirect gross farm sales not more than the current indexed value in each of the previous 2 years, and 2) who has a total household income at or below the national poverty level for a family of four, or less than 50 percent of county median household income in each of the

previous 2 years. The USDA defines a small farm as 'an operation with gross cash farm income of under $250,000 (USDA, 2021).

Upon project approval, each collaborating partner team will conduct its own virtual information sessions to inform and educate producers and landowners from the respective project areas as well as their organizations, extension educators, technical assistance personnel, and others who have been working with producers and landowners in their states about the project and opportunities for participation. Simple flyers about each CSAF as described under (ii) (A) will be prepared by each collaborating partner team as appropriate to the CS practices to be implemented through its institution and shared with participants in these sessions and made available through online platforms (blogs, university websites, social media, eXtension website, email, and text). All participants will be informed about the application procedure and encouraged to apply to be enrolled in the program. Information about the opportunities for socially disadvantaged landowners, small farmers and ranchers, and beginning farmers to participate in the project will be circulated widely. Applications for participation in the project will be open to all interested small farmers, landowners, and producers in participating states (Alabama – special focus on Blackbelt Counties, Virginia, and Maryland). Applicants will be expected to complete and submit a brief application form capturing information about the applicant, highlights of farming history, the agricultural lands under his/her long-term control, motivation for wanting to participate, **a marketing plan for the resulting commodities (if they have any)**, and estimated financial support they would need to adopt such practices. Moreover, their plan to contribute (such as in the form of farm labor, use of farm machinery if they have, and similar other contributions) to the adoption process will be asked so that their enthusiasm and ability to carry out the selected practices are known. Information, such as applicants' availability and suitability of lands under their long-term control, current FSA registration status of their farms or willingness to register, willingness to comply with the certification requirement for highly erodible land conservation (HELC) and wetland conservation (WC), and their commitment in participating in the project will be included in the application form. Their enthusiasm and commitment to participate and willingness to comply with required registration and certification will be collected in a Likert scale ranging from 1 to 5, with 1 indicating lowest score and 5 highest score.

For a fair selection of applicants, a selection committee in each collaborating institution will be formed consisting of three to five members (PI and/or co-PI, agriculture and natural resource leader for the county operation of collaborating universities, and one or two county agent(s)). The selection committee will evaluate the applications and rank them based on the answers they have provided in the application form. The committee will organize virtual meetings with top 30 applicants (separately) to be more familiar with their interest, ideas, understanding, and capability to implement CS practices. The selection committee will explain the expectations from the applicants for successful implementation of CS practices and answer any question the applicants may have. After virtual meetings, the selection committee will re-rank and select the top 15 applicants (AAMU, VSU, and Tuskegee each) or top 25 applicants (UMES) and visit their farms or sites where they are planning to implement the CS practices. During these visits, the selection committee will use pre-formatted score sheets to evaluate the capability of the applicant and suitability of the site for implementing the CS practice of their interest. Based on

the average score from such visits, the top 10 applicants (AAMU, VSU, and Tuskegee each) or top 20 applicants (UMES) will be selected for implementing CS practices.

Considering the social and economic status of underserved landowners generally, the practical and meaningful engagement of landowner participants in such a project will require that they have access to a balanced mix of incentives. The needs of the small and underserved landowners in the USA are many, including funding, education, and technical support. This project will seek to address elements of many of those needs by enrolling at least 10 producers and landowners per collaborating institution and providing financial support to adopt selected CS practices on up to 50 acres per applicant. This approach will result in at least 40 producers/landowners adopting CS practices on about 2,000 acres across the collaborating states. If funds remain, more individuals will be supported until the available fund is exhausted. The enrollment process is expected to begin in the first quarter of the first year and be completed by the end of the second year of the project. Participants can begin implementing CS practices as soon as they are enrolled.

C. Plan to Provide Training, Technical Assistance, and Outreach

Each collaborative institution will be responsible for providing training and outreach to the farmers and landowners in their state and selected practices. This effort will be led by the PI of each institution. The PIs may collaborate with the collaborators from other institutions in the project team as needed and available. The NRCS Conservation Practice Standards (CPS) for the selected CS practices and the role of farmers to follow those standards while implementing the practices will be included in the training as appropriate to the enrolled farmers. Virtual training sessions on the CS practices in which producers and landowners are enrolled will be conducted to enhance their knowledge for implementing those practices. Various blocks of such sessions will be conducted to educate enrollees matching their enrolled practices. The tentative session topics will be on alley cropping (AAMU and UMES), silvopastures, pasture improvement, and rotational grazing (Tuskegee and VSU), including the benefits of these practices and viable marketing plan for the resulting products. All collaborators will serve as trainers in their areas of expertise. Additionally, outside experts from other land-grant institutions, private organizations, and more as applicable will be invited to speak in these sessions as deemed necessary. Existing educational materials that are developed by 1890 AC, the National Agroforestry Center, USDA/NRCS/Forest Service, collaborators and their institutions, other land-grant universities, and similar other institutions will be used as training materials. Pictures and videos of silvopastures, alley cropping, pastures and grazing systems with leguminous forages, and facilities for rotational grazing systems that collaborators have from their completed and ongoing projects will be important training materials.

Training sessions will be recorded and made available for those who may need to consult them later. Moreover, links to all resource materials will be consolidated in a blog (to be created and managed for this project) and shared among the project team and participants (enrollees and professionals working with them). The project coordinator (to be hired through Tuskegee University) will coordinate with all collaborators to schedule and conduct these sessions. The project team lead, Dr. Uma Karki, will coordinate the training, outreach, and other project efforts

until the project coordinator is hired. The virtual training will begin as soon as the first set of enrollments is completed, which is expected to be by the end of Quarter 2, Year 1. Training categories, responsible people and their qualifications, and the timeline are presented in Table 1. After the first set of training sessions are completed, each collaborator will work closely with trained enrollees, facilitating them implementing the selected CS practices, getting the financial assistance through the respective collaborating institution through which they are enrolled, and providing the needed technical assistance. We expect that the implementation of CS practice would begin as soon as the beginning of Quarter 3, Year 1 and continue thereafter until all enrollees complete the process.

Table 1. Proposed training, responsible persons, qualification, and timeline.

Training category	Responsible person	Qualification	Timeline
CS-practice introduction, benefits, implementation steps, establishment, and marketing strategies	Project team. All collaborators work together, schedule training, and serve as experts in their areas. Invited speakers.	Collaborators – PhDs and decades of experience in their respective fields. Invited speakers will have relevant qualifications, experience, and expertise in CS agriculture and forestry practices.	Year 1, Quarter III-IV
Refresher training, practice management, marketing	-do-	-do-	Year 2, Quarter III-IV
Refresher training, feedback	-do-	-do-	Years 3-4 Quarter III-IV

In addition to the virtual training sessions, site tours and demonstrations will be organized using the agroforestry (silvopasture, alley cropping), improved pastures, and rotational/prescribed grazing sites developed at the farms of enrolled farmers for interested enrollees and professionals working with local farmers. Tuskegee and AAMU team are expecting non-enrolled local farmers (ranging from 4-10 per event) interested in learning about CS practices are expected to participate in outreach events. Once implementation begins in participants' farms, these sites will be used as demonstration sites for local producers, landowners, professionals, and other interested individuals. Moreover, selected agroforestry and other CS practice sites developed under this project will be used for continued education, demonstration, and hands-on training of producers, landowners, students, Extension educators, and other stakeholders during the project period and beyond.

Technical assistance will include providing the step-by-step procedure and guidance for establishing the selected CS practices that farmers have enrolled for, managing the established practices, providing the record keeping format and teaching how to use the format for keeping records relevant to the practice they have implemented, harvesting and measuring produce, processing the produce – cleaning, sorting, packaging, branding/labeling the produce, and preserving and storing the produce until sold -, and marketing the produce. Some of the

examples of technical assistance in establishing CS practices would be site selection and design, soil sample collection and sending to nearby soil lab for pH and nutrient analyses, applying recommended lime, controlling weeds, preparing land, securing needed planting materials (seeds for forages and vegetables, saplings of trees and shrubs), developing watering systems, fencing, applying recommended fertilizers, planting tree and shrub saplings, sowing seeds, and developing grazing facilities for prescribed grazing. Some of the examples of technical assistance for the management of established practices would be inspecting the growth and health of the established crops, irrigation if/as needed, nutrient management, thinning/pruning trees/shrubs, weed and pest control, annual soil test and application of recommended lime and fertilizers, taking care of grazing animals, and prescribed grazing.

D. Plan to Provide Financial Assistance for Producers/Landowners to Implement CSAF Practices

Each collaborating institutional team, under the leadership of institutional PI, will provide financial assistance to procure inputs and pay for services required for implementing CS practices to farmers enrolled through its institution. An average estimated financial support would be $500/acre; however, it may vary depending on various farm/land conditions, machinery and farm labor available at the farm, costs for renting the needed equipment and hiring labors in the local area, and similar other situations. Each applicant may be eligible to get financial assistance for implementing CS practices up to 50 acres. The fund would be used to pay for needed inputs and services (soil test, lime and/or fertilizer application, planting materials (tree saplings; shrub saplings, cuttings, or seeds; seeds of vegetables, medicinal plants, and forages; inoculums for legume seeds), facilities for rotational grazing – fencing, watering facilities, mobile shelters), rental or contractual services for planting trees, forages, vegetables, developing watering or irrigation systems, cross fencing, and similar other items associated with the implementation of the selected CS practices for which producers are enrolled. Enrollees who would need contractual services or hired labor to a great extent may have to go with fewer acres for developing CS practices than those needing less support per acre. Each collaborator will work closely with at least 10 producers enrolled through his/her institution and help finding input source and service providers. Vendors will be asked to provide quotes for inputs and services that enrollees need, and payments made to them through respective collaborative institutions.

The details of the incentives to be provided to the enrolled producers have been presented in the budget narrative of each collaborative institution. As explained in the above paragraph, incentives will be provided for procuring inputs and services required for implementing the CS practices.

E. Plan to Enroll Underserved and Small Producers, Estimated Number of Underserved and Small Producers Participating, and Associated Dollar Amounts Anticipated to go Directly to Producers, in the Form of Technical and Financial Assistance.

The details presented in this paragraph are to be implemented by each collaborating team for the potential farmers to be enrolled through its institution to implement the selected CS practices. The detail plan for enrolling producers has been presented under (ii) (B). All producers and

landowners to be enrolled in this project (minimum 40 – 10 per collaborating institution) for implementing CS practices will be underserved and small-scale operators. It is estimated that, on an average, each participant will receive financial incentives of $500/acre for up to 50 acres in terms of inputs and services, equivalent to $25,000.00 per farm. The technical assistance they will be receiving from the project team and experts, costs involved in the quantification and verification of GHG benefits expected to result from the implemented CS practices, support to be provided for enhancing marketing of CS commodities, and expense on educational events and learning opportunities have not been quantified in monetary terms.

iii. A Measurement/Quantification, Monitoring, Reporting, & Verification Plan

Each PI/co-PI lead from each institution involved in the project team will be responsible for the measurement, monitoring, and verification of the greenhouse gas emission and carbon sequestration benefits from the climate-smart agricultural practices implemented by farmers and landowners enrolled through her/his institution as well as reporting such benefits to the Project PI. The PI will arrange for compiling the report and submitting it to the funding agency.

A. Approach to Quantify Greenhouse Gas Benefits

Approach to Measure Soil Carbon and Greenhouse Gas Emission

For quantifying carbon sequestration benefits in soil, twenty core samples up to 30 cm depth will be taken randomly from each CS practice site during the summer or fall season at the beginning of the practice implementation, then in Year 3 and Year 5 of the project. Each sample will be separated into depths of 0-5, 5-10, 10-15, 15-20, 20-25, and 25-30 cm. Samples will be oven–dried and then ground in Braun Pulverizer Type UA-53 (Braun Corp. Los Angeles, USA). Fifty grams of each sample will be used to determine SOC following procedures described by Gregorich and Ellert (1993). Additionally, GHG (CO_2, CH_4, N_2O) effluxes will be measured in the field just before implementing the selected practices and subsequently in each season, except winter, each year during the project period. In each measurement season, three sets of measurements will be taken in a 4-week interval using a portable system Li-8400 (LICOR, Inc., Lincoln, Nebraska). A soil gas chamber will be attached to the LICOR system, placed on a-10 cm (Polyvinyl chloride) PVC collars, and equilibrated between 260-280 ppm of ambient CO_2 concentration before taking measurements. In each study site, four collars will be placed randomly to capture the GHG effluxes that would be representative of the CS-practice site. The space between the soil surface and the edge of a collar will be 5 cm. The console and the gas chamber will be calibrated to combo operate based on gas exchange principles to measure the CO_2 efflux. The GHG effluxes will be taken between 8.00 AM and 12.00 PM on each sampling day, except on days of excessive moisture, during which measurements will be taken in the afternoons or on the next day or after 2 days when the soil is at the field-moisture capacity. Soil temperature will be measured simultaneously with a digital soil thermometer during GHG-efflux measurements. Data will be presented as seasonal means of all observations taken during each measurement year.

Measurement of Carbon Sequestered in Trees and Shrubs

Carbon sequestered in trees and shrubs will be quantified from their above- and below-ground biomass using the equation developed by Chave et al. (2005): $AGB = F \times \rho \times (\pi D24) \times H$, where, D denotes tree canopy diameter, H represents tree height, ρ specifies the tree dry-mass density, which can be derived from allometric Model 4 as described by Chidumayo (2002), and F is a form factor that takes into account trees' shape which typically varies from 0.01 to 1 (Chave et al., 2014). Tree height and crown diameter will be measured using rangefinder in Trimble GPS GeoExplorer 6000© (Karki et al., 2021). Shrub height and diameter will be measured with measuring tapes. The below-ground biomass (BGB) will be calculated as $0.3 \times AGB$ (Cairns et al., 1997) and the total biomass of a tree will be quantified as the sum of AGB and BGB, i.e., $1.3 \times AGB$. The total C sequestered (TCS) on these plants will then be estimated using this equation: $TCS = 0.65 \times 1.3 \times AGB$.

Measurement of GHG Benefits in CS Animal-Production Systems

Adding legumes and annuals to pastures increases forage quality. The reduction in GHG emission is largely attributable to higher quality forages. Legumes increase the forage quality and reduce fermentable organic matter (OM), thereby decreasing N_2O emissions as more dietary N gets partitioned to fecal N than urinary N, which is a source of N_2O (Eugène et al., 2021). Feeding quality forages that are rich in proteins and digestible organic matter (DOM) to ruminants reduces ruminal fermentation, which usually increases animal productivity and lowers CH_4 emissions (Hristov et al., 2013; Haque, 2018; Vandermeulen et al. 2018; Suybeng et al., 2019; Ortega et al., 2021). Grazing ruminants in quality pastures, therefore, would exhibit better performance and health conditions and emit less GHGs than their traditional low-quality pasture counterparts.

For measurement and verification of GHG benefits because of the improved pasture quality, relevant data will be collected from participant producer farms utilizing both improved and traditional pasture systems. On each farm, one group of small ruminants will be allowed to graze the improved pastures when forages attain the recommended grazing height (Ball et al., 2007). Another group of animals will be allowed to graze the traditional pastures. Grazing facilities will be checked and deficient facilities, if any, will be installed in all grazing plots for rotational grazing (cross fencing, watering facility, mineral feeding facility, mobile shelters). Prior to stocking animals in each plot at each rotation, forage samples will be collected and analyzed for biomass and quality (crude protein, acid detergent fiber, neutral detergent fiber, and total digestible nutrients) using official analytical methods (AOAC, 2019). From the forage biomass data, mean carbon stock change will be estimated by a modified version of the IPCC methodology (Lasco et al., 2006; Verchot et al., 2006) then averaged across years to assess carbon sequestration. Approval from the Institutional Animal Use and Care Committee of each institution will be obtained prior to beginning the measurement and verification. Animals will be rotationally stocked in grazing plots and GHG measurement taken when they are grazing in each plot at each rotation. Pulse rate as heat-stress indicator (Nichols & O'Reilly, 1966) and two consecutive daily muzzle CH_4 and CO_2 effluxes will be measured monthly throughout the study using a mobile small animal GreenFeed skid System (C-Lock Inc., Rapid City, SD). For each animal group at each farm, data will be collected for two consecutive days each month. Live

weight, body condition score, and FAMACHA score (to measure anemic condition of animals caused by *Haemonchus contortus,* number one blood-sucking gastrointestinal parasite of small ruminants in the project region*)* of animals will be measured monthly to assess additional benefits associated with CS systems. Soil carbon and effluxes of CO_2, N_2O, and CH_4 in each system will be measured as described above. Farms with CS practices will be used for field days, demonstrations, and other educational events for participants and other stakeholders.

B. Approach to Monitoring of Practice Implementation, Including the Anticipated Number of Farms and Acres Reached through Project Activities

Project Monitoring and Evaluation will be conducted at two levels, namely by the Project Team and a Project Monitoring and Evaluation Team (PMET). For the first level, each institutional collaborative team who will be working closely with enrollees ($\geq$10) in his/her respective institution and state will prepare a quarterly progress report in terms of implementation status, adopted practices, acres involved, provided support, development of new market and/or expansion of existing markets, success rate, feedback of enrollees, any problem or challenges encountered in the implementation process, and steps taken to overcome those challenges. The PI from each institution will assign a person to lead the monitoring effort in the field of farmers enrolled through that specific institution and report to the institutional PI, who will share this report to the project team. One of the monitoring aspects will include whether the NRCS CPS have been followed while implementing the selected CS practices. This report from each institution will be shared and discussed in virtual quarterly meetings of the project team, where enrollees can participate and share their experience as well. Each collaborator will be visiting the sites where CS practices have been implemented before preparing the report and attending the meeting. Once the selected practices have been developed, the frequency of field visits may be reduced to once or twice a year to monitor the progress, provide technical service needed to practitioners, and have their feedback. The project team lead and/or her designee will visit the CS-practice sites in other states once or twice during the project period and share the findings with the rest of the team. Other team members also may join such multi-state field visits. Moreover, face-to-face 2-day annual meetings of the project team and progress review will be conducted in each collaborating state rotationally. One of the meeting days will be used to visit the selected site of the hosting state and another day for indoor progress-review meeting. Furthermore, when project team members and/or students will go for collecting soil samples, measuring trees and shrubs, collecting other samples, or taking other measurement, they will report the implementation status of the CS practices on a pre-formatted progress-report form, which the project team will develop in Year 1, Quarter I.

A Project Monitoring and Evaluation Team (PMET), consisting of one collaborator from each institution and one participant producer enrolled with each collaborating institution will be invited to serve on this Team. Additionally, one external evaluator with the relevant background will be invited to join the team as well. The PI will convene and facilitate the first meeting of the PMET, at which the Team will appoint its Coordinator, and consider and determine its operational procedures. PMET will meet twice a year, once virtually and once face-to-face. The latter is to be coordinated on a rotating basis among the collaborating institutions. The PI will submit all reports from each of the participating institutions quarterly, annually, and as and when requested by any member of PMET. The PMET Coordinator or a designated member will

conduct evaluation of progress made by collaborators by phone to assist PMET better evaluate the progress and challenges if any at collaborating institutions. Opportunities to meet and interact with landowner participants by PMET will be facilitated when site visits are undertaken. The Project Collaborators will be guided by PMET's recommendations for successful completion of the CS-practice implementation and management.

C. Approach to Reporting and Tracking of Greenhouse Gas Benefits

Analyzed results obtained from data (soil, trees, shrubs, forages, vegetables, medicinal plants, fruits, animals) collected each year will reveal the changes in carbon sequestration and GHG emissions because of various CS practices developed in the field of enrollees. From the monitoring report as explained under (iii) (B), acreage under the implemented CS practices will be obtained. The GHG benefits per farm, per CS practice, and per dollar expended will be calculated from the previous two pieces of information. The anticipated longevity of the GHG benefits will be estimated based on the type of plants involved in the implemented CS practices and the timeframe the participants would be willing to continue and/or pass over to the next generation; participants' willingness will be assessed by conducting a survey. All these findings will be reported to the funding agency through quarterly, annual, and final reports.

D. Approach to Verification of Greenhouse Gas Benefits

The GHG benefits associated with the implemented CS practices will be verified based on the results on carbon sequestration and GHG emission because of implementing CS practices and their continuity over time, at least for the project period, using the Carbon Management Evaluation Tool (COMET). The baseline data taken at the beginning of implementing CS practices will be compared with the same data collected each year during the project and changes on these variables overtime quantified. Increase in carbon sequestration in plants and soils will be summed up to obtain the total carbon sequestered per practice, per farm, and per year, and all of them added together to determine the total carbon sequestered during the project period. The same procedure will be followed to estimate the decrease in the GHG emissions annually for the project period. The long-term GHG benefits will be estimated based on the annual estimate of biomass production and resulting C sequestration in soil for the lifespan of the established CS practices. Similarly, the annual decrease in GHG emission obtained for the period of this project will be used to estimate the long-term downward trend of GHG emission associated with CS practices.

E. Agreement to Participate in the Partnerships Network

The project team agrees that, if funded, one person would participate in the Partnerships Network meetings and bring the inputs from all aspect of the project. We also seek to benefit from experience and ideas brought by other teams in this network. We would like to connect our enrollees to the relevant groups and networks involved in this Partnerships Network in strengthening their capabilities in marketing CS products.

iv. **A Plan to Develop and Expand Markets for Climate-Smart Commodities Generated as a Result of Project Activities**

A. Any Partnerships Designed to Market Resulting Climate-Smart Commodities

Collaborating institutions of this project will create an inter-state marketing consortium to educate producers and landowners to promote markets for their CS commodities as described below.

The marketing plan for CS commodities (CSCs) will focus mainly on domestic sales because this is the first initiative to bring CSCs to the market. The project will adopt a robust marketing plan to explore, create, expand, and promote CSC marketing during the project period.

Marketing of CSCs during the Project Period: This portion includes four different strategies. First, the collaborating institutions of this project will create in-state and inter-state marketing coalitions involving participant producers. The project team will facilitate the coalition with necessary coordination, help coalition develop marketing strategies and action plans, and empower them to carryout market-promotion activities, such as advertisement, educational events, and free samples and/or product-tasting events to educate consumers. Second, the project team will work with the coalitions and producers to explore avenues for creating new markets for CSCs locally, regionally, and nationally, such as a weekly market on collaborating institutions or at another location that the coalition finds convenient and viable at the local and/or regional level. Potential CSCs resulting from this project will be persimmons, blueberries, figs, colored bell peppers, poblano peppers, egg plants, ginger, pumpkins, and live animals (goats, sheep) and/or their products. Third, the project team will facilitate the coalition and producers expanding CSC markets by connecting them with farmers' markets, local grocery and ethnic stores, and other potential vendors (school lunch program, food stamp program, churches, restaurants, neighborhood markets, producers' cooperatives, and more). Fourth, the project will educate participant producers and marketing coalitions in labeling, packaging, and branding CSCs, and setting a reasonable premium price as well as safe storage, handling, and transportation keeping their quality. The project will facilitate the CS producers in setting premium prices for the CSCs by introducing labels/badges and marketing materials on packaging and branding, e.g., a CS logo and the price per unit of CS commodity on the label/badge. Simultaneously, advertising and reaching out to consumers directly through word of mouth, local newspapers and magazines, commodity group, email, community organizations, educational materials, social media, and other online platforms. Other ways of promoting would be taking advance orders, U-pick options, establishing a producer-consumer contact, selling at the farm gate, cultural festivals, and adding value through postharvest technology and selling them for higher prices.

Post-Project Marketing of CSCs: It is expected that the participant producers and their coalitions would have well-established marketing channels to market their CSCs independently by the end of the project period. Education of these producers on any new marketing technology and strategies emerging by then will be tied to the regular Extension education program of the collaborating institutions.

B. A Plan to Track Climate-Smart Commodities through the Supply Chain and Estimated Economic Benefits for Participating Producers Including Market Returns

Record-keeping forms will be developed for participant producers for keeping records of their products (e.g., plants and plant products; animals and animal products), quantity consumed at home, quantity sold, price per unit, and market outlets (local consumers/buyers, retail stores, online buyers, and more). Both printed and electronic versions of these forms will be made available so that they can adopt either one as they feel comfortable. Orientation on keeping records will be provided to all participants at the beginning of practice implementation. Participants will also be followed with needed help provided on site by the project team members in their respective working areas, who will collect those records quarterly. Such records will be compiled, analyzed, and shared during the project meetings. Based on participants' records, market outlets will be monitored by visiting local stores or online platforms as applicable, and findings reported to the project team. Pre-formatted monitoring forms will be used to document findings. Economic benefits from CS practices for participant producers will be estimated from the quantity of CS commodities produced, sold, and the selling price for those commodities as reported in their records. These pieces of information will also be used to monitor the transfer of GHG-benefit ownership through the supply chain. Findings will be reported to the funding agency through quarterly, annual, and final progress reports. Reduction in the need of N fertilizer application because of the addition of leguminous forages will also be calculated into monetary value and added to the economic benefits to participants.

C. Estimated Economic Benefits for Participating Producers Including Market Returns

Basis for calculating economic benefits and market returns will be a) types and quantity of products obtained from CS practices as described above under (iv) (B), and b) per unit market price for those products. Calculation will be performed for individual participants and for each type of CS practice annually and for the entire project period. Economic benefits would come from a) sale of CS commodities (animals, plants, and their products); b) reducing production costs (low stress to plants and animals, reduced or no application of N fertilizers because of legume addition, cover crops, no or low tillage, use of perennial crops that would reduce repeated cultivation) – reduced tillage and use of cover crops only would increase income up to $9/acre (Tom, 2022).

D. Post-Project Potential, Including Anticipated Ability to Scale Project Activities, Likelihood of Long-Term Viability Beyond Project Period, and Ability to Inform Future USDA Actions to Encourage Climate-Smart Commodities

Because of the perennial nature of the agroforestry-based CS practices proposed in this proposal, there is a huge post-project potential for reducing GHG emission, increasing carbon sequestration, and obtaining associated benefits. Various tree species planted in developing the selected CS practices in this project will be standing in the field for 20 to 50 years or more depending on the species. Shrub species will also be standing in the system and continue providing GHG benefits in addition to continuously supporting animal feed, reducing soil erosion, and other associated benefits for potentially hundreds of years. Perennial cover crops and forages included in CS practices developed under this project will continue standing in the field and contributing to smart climate as long as those practices are continued and managed

sustainably following the recommended procedures. Once the multiple benefits (reduced GHG emission, income from CS-commodity sale, productive soil, reduced need for N fertilizers and saving in production costs, reduced stress for grazing animals, and more) from the CS practices are realized by the participants, we expect that they will continue those practices for their lifetime and pass them over to the next generation, then continued generation after generation. The adoption of CS practices will increase as other producers and landowners would be attracted to these practices once they see and learn about these practices through the continuous educational efforts of the collaborators. The CS-practice sites developed under this project at the collaborating institutions and participants' farms will be used for demonstrations, site tours, and hands-on training for the continued education of producers, landowners, professionals, and students.

Note: Cited references are included in a separate file.

PCSC Benchmark Milestones Targets and Expenditures
Entity: Tuskegee University
Project Title: Expanding the Participation of Marginal Producers and Landowners to Promote Climate-Smart Agriculture and Forestry Practices: Continuous Efforts of 1890 Agroforestry Consortium

SN	Milestone	Y1Q1E	Y1Q2E	Y1Q3E	Y1Q4E	Y2Q1E	Y2Q2E	Y2Q3E	Y2Q4E
A.	**Required Quantitative Targets by Quarter (Cumulative)**								
1	Number of producers involved			10	20	30	40	40	40
2	Number of underserved producers involved			6	12	18	24	24	24
3	Number of acres involved			100	200	700	1,000	1,500	2,000
4	Number of head involved (if applicable)								
5	Dollars provided to producers (in the form of inputs and services)			$65,605	$131,210	$459,235	$656,049	$984,074	$1,312,099
6	GHG Benefits (Metric Tons of CO2e Reduced or Sequestered)								
7	Number of new marketing channels*established			2.0	2.0	2.0	2.0	2.0	4.0
8	Number of marketing channels*expanded								
9	Number of measurement tools utilized			3.0	3.0	3.0	3.0	3.0	3.0
B.	**Other Required Benchmarks that may be quantitative or qualitative**								
1	Outreach, training, and other technical assistance	1	2	3	4	5	7	7	7
2	Other MMRV and supply chain traceability attributes			2	2	4	4	4	4
3	Other measurements of work related to marketing of commodities								
4	Demonstrated engagement of major partners	1	2	3	4	5	6	7	8
5	Climate smart technologies employed (if applicable)								
	Budget estimate ($)	$277,205	$346,506	$415,807	$346,506	$200,153	$250,191	$300,229	$250,191

PCSC Benchmark Milestones Targets and Expenditures

Entity: Tuskegee University

Project Title: Expanding the Participation of Marginal Producers and Landowners to Promote Climate-Smart Agriculture and Forestry Practices: Continuous Efforts of 1890 Agroforestry Consortium

SN	Milestone	Y3Q1E	Y3Q2E	Y3Q3E	Y3Q4E	Y4Q1E	Y4Q2E	Y4Q3E	Y4Q4E
A.	**Required Quantitative Targets by Quarter (Cumulative)**								
1	Number of producers involved	40	40	40	40	40	40	40	40
2	Number of underserved producers involved	24	24	24	24	24	24	24	24
3	Number of acres involved	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
4	Number of head involved (if applicable)	100	100	150	200	200	200	200	200
5	Dollars provided to producers (in the form of inputs and services)	$1,312,099	$1,312,099	$1,312,099	$1,312,099	$1,312,099	$1,312,099	$1,312,099	$1,312,099
6	GHG Benefits (Metric Tons of CO2e Reduced or Sequestered)				1.5	1.5	1.5	1.5	1.5
7	Number of new marketing channels*established	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
8	Number of marketing channels*expanded	2.0	2.0	2.0	2.0	2.0	2.0	4.0	4.0
9	Number of measurement tools utilized	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
B.	**Other Required Benchmarks that may be quantitative or qualitative**								
1	Outreach, training, and other technical assistance	11	11	11	11	15	15	15	15
2	Other MMRV and supply chain traceability attributes	6	6	6	6	6	6	6	6
3	Other measurements of work related to marketing of commodities								
4	Demonstrated engagement of major partners	9	10	11	12	13	14	15	16
5	Climate smart technologies employed (if applicable)								
	Budget estimate ($)	$199,787	$249,734	$299,681	$249,734	$179,607	$224,509	$269,410	$224,509

PCSC Benchmark Milestones Targets and Expenditures

Entity: <u>Tuskegee University</u>

Project Title: <u>Expanding the Participation of Marginal Producers and Landowners to Promote Climate-Smart Agriculture and Forestry Practices: Continuous Efforts of</u>
<u>1890 Agroforestry Consortium</u>

SN	Milestone	Y5Q1E	Y5Q2E	Y5Q3E	Y5Q4E
A.	**Required Quantitative Targets by Quarter (Cumulative)**				
1	Number of producers involved	40	40	40	40
2	Number of underserved producers involved	24	24	24	24
3	Number of acres involved	2,000	2,000	2,000	2,000
4	Number of head involved (if applicable)	200	200	200	200
5	Dollars provided to producers (in the form of inputs and services)	$1,312,099	$1,312,099	$1,312,099	$1,312,099
6	GHG Benefits (Metric Tons of CO2e Reduced or Sequestered)	1.5	1.5	1.5	2.0
7	Number of new marketing channels*established	4.0	4.0	5.0	5.0
8	Number of marketing channels*expanded	4.0	4.0	5.0	5.0
9	Number of measurement tools utilized	4.0	4.0	4.0	4.0
B.	**Other Required Benchmarks that may be quantitative or qualitative**				
1	Outreach, training, and other technical assistance	15	15	15	15
2	Other MMRV and supply chain traceability attributes	6	8	8	8
3	Other measurements of work related to marketing of commodities				
4	Demonstrated engagement of major partners	17	18	19	20
5	Climate smart technologies employed (if applicable)				
	Budget estimate ($)	$143,248	$179,060	$214,873	$179,060

Climate-Smart Practices and Limitations

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

NRCS Practice Code	Practice Name
311	Alley cropping
381	Silvopasture
382*	Fence
512	Pasture and Hay Planting
528	Prescribed Grazing
590	Nutrient Management
612	Tree/Shrub Establishment
614*	Watering Facility

* To be used only in combination with other climate-smart practices listed above.

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

N/A

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

I. Overarching Statement

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

II. Eligibility and Highly Erodible Lands and Wetlands Compliance

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

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

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

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

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

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

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

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

III. Other Environmental and Cultural Resources Reviews

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

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

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

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

IV. Producer Benefits

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

V. Producer Data Protection and Disclosure

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

VI. Other Data and Reporting Requirements

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

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

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

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

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

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

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

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

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

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

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

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

VII. Competition and Anti-Competitive Practices

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

VIII.   Suspension and Disbarment

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

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

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

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

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

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

X.   Non-Disparagement

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

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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 (CO2e) emission reductions	Quarterly
Cumulative carbon stock	Whole project estimate of total carbon sequestration	Quarterly
Cumulative CO2 benefit	Whole project estimate of total CO2 emission reductions	Quarterly
Cumulative CH4 benefit	Whole project estimate of total CH4 emission reductions	Quarterly
Cumulative N2O benefit	Whole project estimate of total N2O emission reductions	Quarterly
Offsets produced	Amount of carbon offsets produced by project	Quarterly
Offsets sale	Name of marketplace where carbon offsets were sold	Quarterly
Offsets price	Price of carbon in offset sales	Quarterly
Insets produced	Amount of carbon insets produced by project	Quarterly
Cost of on-farm TA	Cost of on-farm technical assistance (TA) provided to producers	Quarterly
MMRV cost	Cost of measurement, monitoring, reporting, and verification (MMRV) activities	Quarterly
GHG monitoring method	Methods used by project to monitor GHG benefits (up to 5)	Quarterly
GHG reporting method	Methods used by project to report on GHG benefits (up to 5)	Quarterly
GHG verification method	Methods used to verify GHG benefits (up to 5)	Quarterly

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

Table 3. Marketing Activities elements

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

Producer Enrollment

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

Table 4. Producer Enrollment elements

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

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<u>Field Enrollment</u>

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 CO2 ER	Official estimate of total CO2 emission reductions for field	Quarterly
Field official CH4 ER	Official estimate of total CH4 emission reductions for field	Quarterly
Field official N2O ER	Official estimate of total N2O emission reductions for field	Quarterly
Field offsets produced	Amount of carbon offsets produced in field	Quarterly
Field insets produced	Amount of carbon insets produced in field	Quarterly
Other field measurements	Indicator that field data was collected for reasons other than GHG benefit estimation	Quarterly

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GHG Benefits - Alternate Modeled

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

Table 8. GHG Benefits – Alternate Modeled elements

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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<u>GHG Benefits - Measured</u>

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

Table 9. GHG Benefits - Measured data elements

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

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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

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Commodity sales

Data element name: Commodity sales	**Reporting question:** Did project activities result in sales this quarter of the commodity(ies) produced by this project?

Description: Indicator of sales of commodity(ies) related to project activities. If sales are reported, complete the *Marketing Activities* worksheet (Table 3) as part of the quarterly performance report.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Yes
	• No
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

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Farms enrolled

Data element name: Farms enrolled	**Reporting question:** Did the project enroll any producers or fields this quarter?

Description: Indicator that the project enrolled producers or fields. If enrollment activities occurred this quarter, complete the *Producer Enrollment* and *Field Enrollment* worksheets (Tables 4 and 5) as part of the quarterly performance report.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Yes
	• No
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

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GHG calculation methods

Data element name: GHG calculation methods	**Reporting question:** What methods is the project using to calculate GHG benefits?

Description: List the way(s) that GHG benefits are being measured and calculated by the project this quarter.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Models
	• Direct field measurements
	• Both
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

GHG cumulative calculation

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

Cumulative GHG benefits

Data element name: Cumulative GHG benefits	**Reporting question:** What are the project's estimated total GHG emission reductions (CO2eq) to date?
Description: Total cumulative estimated greenhouse gas emission reductions from practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.	
Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

Cumulative carbon stock

Data element name: Cumulative carbon stock	**Reporting question:** How much carbon has the project sequestered to date?
Description: Estimated total cumulative change in carbon stock based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of carbon = 3.67 tons of CO_2eq.	
Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

Cumulative CO2 benefit

Data element name: Cumulative CO2 benefit	**Reporting question:** What are the project's estimated total cumulative CO2 emission reductions to date?
Description: Estimated total cumulative carbon dioxide emission reductions based on practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.	
Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

Cumulative CH4 benefit

Data element name: Cumulative CH4 benefit	**Reporting question:** What are the project's estimated total CH4 emission reductions to date?
Description: Estimated total cumulative methane reduction based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.	
Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

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Cumulative N20 benefit

Data element name: Cumulative N2O benefit

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets produced

Data element name: Offsets produced

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets sale

Data element name: Offsets sale

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

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

Data type: Text

Select multiple values: NA

Measurement unit: Name

Allowed values: Text

Logic: Respond if >0 to 'Offsets produced'

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets price

Data element name: Offsets price

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars per metric ton

Allowed values: 0-500

Logic: Respond if >0 to 'Offsets produced'

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Insets produced

Data element name: Insets produced

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cost of on-farm TA

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

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

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

MMRV cost

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

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

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

GHG monitoring method

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

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

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

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

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

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GHG reporting method

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

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

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

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

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

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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

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<u>Partner Activities</u>

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

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Partnership start date

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

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

Data type: Date	**Select multiple values:** NA
Measurement unit: MM/DD/YYYY	**Allowed values:** 01/01/2023 – 12/31/2030
Logic: No response for recipient	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Partnership initiation

Partnership end date

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

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

Data type: Date	**Select multiple values:** NA
Measurement unit: MM/DD/YYYY	**Allowed values:** 01/01/2023 – 12/31/2030
Logic: No response for recipient	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Partnership end quarter

New partnership

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Yes
	• No
	• I don't know
Logic: No response for recipient	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Partnership initiation

Partner total requested

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

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

Data type: Decimal	**Select multiple values:** NA
Measurement unit: Dollars	**Allowed values:** $0-$100,000,000
Logic: No response for recipient	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Quarterly

Total match contribution

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

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

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

Total match incentives

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

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

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

Match type

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Equipment rental or use
	• In-kind staff time
	• Production inputs (reduced cost or free)
	• Program income
	• Software
	• Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Quarterly

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Match amount

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

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

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

Training type provided

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Data collection
	• Grant reporting
	• Marketing opportunities
	• Providing financial assistance
	• Providing technical assistance
	• Writing producer contracts
	• Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Quarterly

Activity by partner

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Marketing support
	• MMRV support
	• Producer outreach for enrollment
	• Technical assistance to producers
	• Training to other partner organizations
	• Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Quarterly

Activity cost

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

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

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

Products supplied

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

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

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

Product source

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

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

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

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Marketing Activities

Commodity type

Data element name: Commodity type	**Reporting question:** What type of commodity is produced by the farmers enrolled in this project?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** FSA commodity list
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

---

Marketing channel type

Data element name: Marketing channel type	**Reporting question:** What type of marketing channel is used to sell this commodity?

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

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

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

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

---

Number of buyers

Data element name: Number of buyers	**Reporting question:** How many buyers are there in this marketing channel?

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

Data type: Integer	**Select multiple values:** No
Measurement unit: Count	**Allowed values:** 1-500
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

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Names of buyers

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

Marketing channel geography

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

Value sold

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

Volume sold

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

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Volume sold unit

Data element name: Volume sold unit	**Reporting question:** What is the unit of volume?

Description: The unit associated with the volume of the commodity sold in the marketing channel. If "other" is chosen, use the additional column to enter the appropriate unit as free text.

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

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

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

---

Price premium

Data element name: Price premium	**Reporting question:** What price premium is received for the commodity sold in this marketing channel?

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

Data type: Decimal	**Select multiple values:** No
Measurement unit: Dollars	**Allowed values:** $0.01-$10,000
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

---

Price premium unit

Data element name: Price premium unit	**Reporting question:** What is the unit for the price premium?

Description: The unit associated with the price premium for the commodity sold in the marketing channel. If "other" is chosen, use the additional column to enter the appropriate unit as free text.

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

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

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

---

Price premium to producer

Data element name: Price premium to producer

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Percent

Allowed values: 0-100

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Product differentiation method

Data element name: Product differentiation method 1-3

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Marketing method

Data element name: Marketing method 1-3

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Marketing channel identification method

Data element name: Marketing channel identification method 1-3	**Reporting question:** What methods are used to generate interest in climate-smart commodities in this marketing channel?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Educational tours for buyers • In-person lead generation • Negotiated contracts with buyers • Partnership network or project partner • Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

Traceability method

Data element name: Traceability method 1-3	**Reporting question:** What traceability methods are used for climate-smart commodities in this channel?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Barcode or unique ID • Blockchain • Book and claim • Chain of custody • Mass balance • Recordkeeping • Registry with certification • Segregation • Supply shed • Volume proxy • Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

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Producer Enrollment

Unique IDs

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

Producer data change

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

Producer start date

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

Producer name

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

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Underserved status

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

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

Data type: List

Measurement unit: Category

Select multiple values: No

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

Measurement unit: Category

Select multiple values: No

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

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

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Total crop area

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

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

Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Total livestock area

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

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

Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Total forest area

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

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

Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

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Livestock type

Data element name: Livestock type 1-3	**Reporting question:** What types of livestock are raised on the farm?

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

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

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

Logic: Respond if 'Total livestock area' >0	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Livestock head

Data element name: Livestock head 1-3	**Reporting question:** How many livestock (by type) are on this operation?

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

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

Organic farm

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: None – all respond	**Required:** No
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Organic fields

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'Organic operation'	**Required:** No
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Producer motivation

Data element name: Producer motivation	**Reporting question:** Which of the following was the primary reason the producer enrolled in this project?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Financial benefit • Environmental benefit • New market opportunity • Partnerships or networks • Other
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment

Producer outreach

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

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

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

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

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

CSAF experience

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

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

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

- Yes
- No
- I don't know

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

CSAF federal funds

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'CSAF experience'	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment

CSAF state or local funds

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'CSAF experience'	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment

CSAF nonprofit funds

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'CSAF experience'	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment

CSAF market incentives

Data element name: CSAF market incentives

Reporting question: Were CSAF practices supported by market incentives?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

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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

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

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Field tillage

Data element name: Field tillage	**Reporting question:** What is this field's tillage history?

Description: Prior to enrollment, what was the most common tillage approach during the past 3 years?

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

- None
- Conventional, inversion
- Conventional, vertical
- No-till, direct seed
- Reduced till, inversion
- Reduced till, vertical
- Strip till
- Other

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

---

Practice past extent - farm

Data element name: Practice past extent - farm	**Reporting question:** What percent of the farm has implemented this CSAF practice (combination) previously?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Never used • Used on less than 25% of operation • Used on 25-50% of operation • Used on 51-75% of operation • Used on more than 75% of operation
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Field any CSAF practice

Data element name: Field any CSAF practice	**Reporting question:** What is this field's prior experience with CSAF practices?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Practice past use - this field

Data element name: Practice past use - this field	**Reporting question:** Have this CSAF practice (combination) been implemented previously in this field?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • Some • No • I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Practice type

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

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

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

Practice standard

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• NRCS
	• Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Planned practice implementation year

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

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

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

Practice extent

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

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

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

Practice extent unit

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

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

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

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

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

CSAF Practice Sub-questions

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

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<u>Farm Summary</u>

Unique IDs

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

Producer TA received

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

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

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

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

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

Producer incentive amount

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

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

Data type: Decimal	**Select multiple values:** NA
Measurement unit: Dollars	**Allowed values:** $0-$5,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Quarterly

Incentive reason

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

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

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

Measurement unit: Category

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

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

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

Incentive structure

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

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

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

Measurement unit: Category

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

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

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

Incentive type

Data element name: Incentive type 1-4

Reporting question: What type of incentives were provided to each producer?

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

Data type: List

Select multiple values: No

Measurement unit: Category

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on enrollment

Data element name: Payment on enrollment

Reporting question: What portion of the financial incentive is provided to the producer upon enrollment in the project?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on implementation

Data element name: Payment on implementation

Reporting question: What portion of the financial incentive is provided to the producer upon implementation of the practices?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

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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

USDA Partnerships for Climate-Smart Commodities Data Dictionary for Recipients
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<u>Field Summary</u>

Unique IDs

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

Commodity type

Data element name: Commodity type

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

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

Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** FSA commodity list
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Practice type

Data element name: Field practice type 1-7

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

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

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

Date practice complete

Data element name: Date practice complete

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

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

Data type: Date	**Select multiple values:** No
Measurement unit: MM/DD/YYYY	**Allowed values:** 01/01/2023 – 12/31/2030
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Contract end date

Data element name: Contract end date	**Reporting question:** Contract end date

Description: End date listed on the contract that enrolls the field in the project. If contract end date changes, submit updated end date during the next quarter's reporting.

Data type: Date	**Select multiple values:** No
Measurement unit: MM/DD/YYYY	**Allowed values:** 01/01/2023 – 12/31/2030
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

MMRV assistance provided

Data element name: MMRV assistance provided	**Reporting question:** Was MMRV assistance provided?

Description: Was any MMRV assistance provided to the primary operator for this field? MMRV assistance includes in-field support for the use of technologies, consultation on data collection and input, and other support related to MMRV. MMRV is defined a measurement (calculations or estimations of GHG emissions), monitoring (ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time), reporting (documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization), and verification (independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable).

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Marketing assistance provided

Data element name: Marketing assistance provided	**Reporting question:** Was marketing assistance provided?

Description: Was any marketing assistance provided to the primary operator for the commodity(ies) produced from this field? Marketing assistance includes guaranteeing the sale of the commodity(ies), providing a platform for the sale of the commodity(ies), providing a label, branding, or other support related to marketing.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Incentive per acre or head

Data element name: Incentive per acre or head	**Reporting question:** Is this field receiving a per-acre or per-head incentive?

Description: Is this field receiving an incentive payment to implement a specific CSAF practice or set of practices on a per-acre or per-head (livestock) basis?

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

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Field commodity value

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

Field commodity volume

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

Field commodity volume unit

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

Cost of implementation

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

Cost unit

Data element name: Cost unit	**Reporting question:** What is the unit for cost?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Per acre • Per bushel • Per head • Per linear foot • Per pound • Per ton • Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Cost coverage

Data element name: Cost coverage	**Reporting question:** What percent of the practice cost is covered by the incentive?

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

Data type: Integer	**Select multiple values:** No
Measurement unit: Percent	**Allowed values:** 0-100
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field GHG monitoring

Data element name: Field GHG monitoring 1-3	**Reporting question:** How were GHG impacts monitored in this field?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Drones • Ground-level photos and videos • On-farm inspection • Plot-based sampling (e.g., soil, water) • Producer records or attestation • Satellite monitoring or remote sensing • Soil metagenomics • Soil sensors • Water sensors • Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

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Field GHG reporting

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Automated devices • Email • Mobile app • Paper • Third-party actors • Website • Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field GHG verification

Data element name: Field GHG verification 1-3	**Reporting question:** How was implementation of practices to reduce GHG emissions verified for this field?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Artificial intelligence • Computer modeling • Recipient audit • Photos • Record audit • Satellite imagery • Site or field visit • Third-party audit • Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field GHG calculations

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

Field official GHG calculation

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

Field official GHG ER

Data element name: Field official GHG emission reductions	**Reporting question:** What are the estimated total GHG emission reductions (CO2eq) in this field?
Description: Estimated greenhouse gas emission reductions from practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate.	
Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field official carbon stock

Data element name: Field official carbon stock	**Reporting question:** How much carbon has been sequestered in this field?
Description: Estimated total change in carbon stock based on practice implementation in this field. This data element can be reported in any quarter and is cumulative for the year. Conversion rate is one ton of carbon = 3.67 tons of CO_2eq.	
Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field official CO2 ER

Data element name: Field official CO2 emission reductions	**Reporting question:** What are the estimated total CO2 emission reductions in this field?

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

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field official CH4 ER

Data element name: Field official CH4 emission reductions	**Reporting question:** What are the estimated total CH4 emission reductions in this field?

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

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field official N20 ER

Data element name: Field official N2O emission reductions	**Reporting question:** What are the estimated total N2O emission reductions in this field?

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

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons N2O reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field offsets produced

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

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

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field insets produced

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

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

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Other field measurement

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

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Yes
	• No
	• I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

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<u>GHG Benefits - Alternate Modeled</u>

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

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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 CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total carbon stock estimated

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

Total CO2 estimated

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

Total CH4 estimated

Data element name: Total CH4 estimated	**Reporting question:** What is the alternate estimate of the field's total CH4 emission reductions?

Description: Total methane emission reductions based on practice implementation in the field estimated using an alternate model. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total field N20 estimated

Data element name: Total N2O estimated	**Reporting question:** What is the alternate estimate of the field's total N2O emission reductions?

Description: Total nitrous oxide emission reductions based on practice implementation in the field estimated using an alternate method. Conversion rate is one ton of N_2O = 298 tons of CO_2eq.

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons N2O reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

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GHG Benefits - Measured

Unique IDs

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

GHG measurement method

Data element name: GHG measurement method

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

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

Logic: None – all respond

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

Data collection level: Field

Data collection frequency: Annual

Lab name

Data element name: Lab name

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

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

Data type: Text

Select multiple values: No

Measurement unit: NA

Allowed values: Free text

Logic: None – all respond

Required: If applicable

Data collection level: Field

Data collection frequency: Annual

Measurement start date

Data element name: Measurement start date	**Reporting question:** On what date did the measurement start?

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

Data type: Date	**Select multiple values:** No
Measurement unit: MM/DD/YYYY	**Allowed values:** 01/01/2023 – 12/31/2030
Logic: None – all respond	**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field
Data collection level: Field	**Data collection frequency:** Annual

Measurement end date

Data element name: Measurement end date	**Reporting question:** On what date did the measurement end?

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

Data type: Date	**Select multiple values:** No
Measurement unit: MM/DD/YYYY	**Allowed values:** 01/01/2023– 12/31/2030
Logic: None – all respond	**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field
Data collection level: Field	**Data collection frequency:** Annual

Total CO2 reduction calculated

Data element name: Total CO2 reduction calculated	**Reporting question:** What are the total measured CO2 emission reductions?

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

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If a project takes carbon stock or greenhouse gas emission measurements in this field
Data collection level: Field	**Data collection frequency:** Annual

Total field carbon stock measured

Data element name: Total field carbon stock measured	**Reporting question:** What is the total amount of carbon sequestered based on repeat measurements in this field?

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

Data type: Decimal	**Select multiple values:** No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If a project conducts soil samples or takes carbon stock measurements in this field
Data collection level: Field	**Data collection frequency:** Annual

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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 CH_4 = 25 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CH4 reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

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

Data collection level: Field

Data collection frequency: Annual

Total N20 reduction calculated

Data element name: Total N2O reduction calculated

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

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

Data collection level: Field

Data collection frequency: Annual

Soil sample result

Data element name: Soil sample result

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: .00001-100,000

Logic: None – all respond

Required: If a project conducts soil samples in this field

Data collection level: Field

Data collection frequency: Annual

Soil sample result unit

Data element name: Soil sample result unit

Reporting question: What is unit for the soil sample result?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Percent
- Ppm
- Grams
- Grams per cubic centimeter
- Other (specify)

Logic: None – all respond

Required: If a project conducts soil samples in this field

Data collection level: Field

Data collection frequency: Annual

Measurement type

Data element name: Measurement type

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

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

Logic: None – all respond

Required: If a project conducts soil samples in this field

Data collection level: Field

Data collection frequency: Annual

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Additional Environmental Benefits

Unique IDs

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

Environmental benefits

Data element name: Environmental benefits	**Reporting question:** Are environmental benefits other than GHGs being tracked in the field?
Description: Tracking of environmental benefits other than greenhouse gas emission reductions and carbon sequestration in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduction in nitrogen loss

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

Reduction in nitrogen loss amount

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

Reduction in nitrogen loss amount unit

Data element name: Reduction in nitrogen loss amount unit	**Reporting question:** What is the unit for how much reduction in nitrogen losses have been measured in the field?

Description: Unit for the total amount of reduction in nitrogen losses that is measured and reported in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Kilograms • Metric tons • Pounds • Other (specify)
Logic: Respond if yes to 'Reduction in nitrogen loss'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduction in nitrogen loss purpose

Data element name: Reduction in nitrogen loss purpose	**Reporting question:** What is the purpose of tracking reduction in nitrogen losses?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Commodity marketing • Producing insets • Producing offsets • I don't know • Other (specify)
Logic: Respond if yes to 'Reduction in nitrogen loss'	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Annual

Reduction in phosphorus loss

Data element name: Reduction in phosphorus loss	**Reporting question:** Are reductions in phosphorus losses being tracked in the field?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'Environmental benefits'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduction in phosphorus loss amount

Data element name: Reduction in phosphorus loss amount	**Reporting question:** How much reduction in phosphorus losses have been measured in the field?

Description: Total amount of reduction in phosphorus losses that is measured in the field.

Data type: Decimal	**Select multiple values:** No
Measurement unit: Amount	**Allowed values:** 0-1,000,000
Logic: Respond if yes to 'Reduction in phosphorus loss'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduction in phosphorus loss amount unit

Data element name: Reduction in phosphorus loss amount unit

Reporting question: What is the unit for the reduction in phosphorus losses measured in the field?

Description: Unit for the total amount of reduction in phosphorus losses that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.

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

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

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

Reduction in phosphorus loss purpose

Data element name: Reduction in phosphorus loss purpose

Reporting question: What is the purpose of tracking reductions in phosphorus losses?

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

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

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

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

Other water quality

Data element name: Other water quality

Reporting question: Are other water quality metrics being tracked in the field?

Description: Project tracking of other water quality metrics in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.

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

- Yes
- No
- I don't know

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

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Other water quality type

Data element name: Other water quality type	**Reporting question:** What type of other water quality metric have been measured in the field?

Description: Type of other water quality metric (besides nitrogen loss and phosphorus loss reductions) that is measured in the field. If "other" is chosen, enter the appropriate value as free text in the additional column.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Sediment load reduction • Temperature • Other (specify)
Logic: Respond if yes to 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

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Other water quality amount

Data element name: Other water quality amount	**Reporting question:** How much reduction in other water quality metrics have been measured in the field?

Description: Total amount of reduction in other water quality metrics that is measured in the enrolled field.

Data type: Decimal	**Select multiple values:** No
Measurement unit: Amount	**Allowed values:** 0-1,000,000
Logic: Respond if yes to 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

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Other water quality amount unit

Data element name: Other water quality amount unit	**Reporting question:** What is the unit for the reduction in other water quality metrics measured in the field?

Description: Unit for the total amount of reduction in other water quality metrics that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Degrees F • Kilograms • Kilograms per liter • Metric tons • Pounds • Other (specify)
Logic: Respond if yes to 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

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Other water quality purpose

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

Water quantity

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

Water quantity amount

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

Water quantity amount unit

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

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Water quantity purpose

Data element name: Water quantity purpose	**Reporting question:** What is the purpose of tracking water conservation?

Description: Purpose of tracking water conservation or reductions in water use in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Commodity marketing
	• Producing insets
	• Producing offsets
	• I don't know
	• Other (specify)
Logic: Respond if yes to 'Water quantity'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduced erosion

Data element name: Reduced erosion	**Reporting question:** Is reduced soil erosion being tracked in the field?

Description: Tracking of reduced soil erosion in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Yes
	• No
	• I don't know
Logic: Respond if yes to 'Environmental benefits'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduced erosion amount

Data element name: Reduced erosion amount	**Reporting question:** How much erosion reduction has been measured in the field?

Description: Total amount of erosion reduction that is measured in the enrolled field.

Data type: Decimal	**Select multiple values:** No
Measurement unit: Amount	**Allowed values:** 0-1,000,000
Logic: Respond if yes to 'Reduced erosion'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduced erosion amount unit

Data element name: Reduced erosion unit	**Reporting question:** What is the unit for the amount of erosion reduction measured?

Description: Unit for the total amount of erosion reduction from enrolled fields that is measured and reported by the project. If "other" is chosen, enter the appropriate value as free text in the additional column.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:**
	• Tons
	• Other (specify)
Logic: Respond if yes to 'Reduced erosion'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduced erosion purpose

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

Reduced energy use

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

Reduced energy use amount

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

Reduced energy use amount unit

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

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Reduced energy use purpose

Data element name: Reduced energy use purpose	**Reporting question:** What is the purpose of tracking reduced energy use in the field?

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

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Commodity marketing • Producing insets • Producing offsets • I don't know • Other (specify)
Logic: Respond if yes to 'Reduced energy use'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Avoided land conversion

Data element name: Avoided land conversion	**Reporting question:** Is avoided land conversion being tracked in the field?

Description: Tracking of avoided land conversion in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits. Land conservation means land use changing from agricultural uses to non-agricultural uses.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'Environmental benefits'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Avoided land conversion amount

Data element name: Avoided land conversion amount	**Reporting question:** How much avoided land conversion has been measured in the field?

Description: Total amount of avoided land conversion that is measured in the enrolled field.

Data type: Decimal	**Select multiple values:** No
Measurement unit: Amount	**Allowed values:** 0-1,000,000
Logic: Respond if yes to 'Avoided land conversion'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Avoided land conversion amount unit

Data element name: Avoided land conversion unit	**Reporting question:** What is the unit for the amount of avoided land conversion measured in the field?

Description: Unit for the total amount of avoided land conversion that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.

Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Acres • Other (specify)
Logic: Respond if yes to 'Avoided land conversion'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

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Avoided land conversion purpose

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

Improved wildlife habitat

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

Improved wildlife habitat amount

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

Improved wildlife habitat amount unit

Data element name: Improved wildlife habitat unit	**Reporting question:** What is the unit for the amount of improved wildlife habitat measured in the field?
Description: Unit for the total amount of improved wildlife habitat that is measured in and around enrolled fields. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Acres • Linear feet • Other (specify)
Logic: Respond if yes to 'Improved wildlife habitat'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Improved wildlife habitat purpose

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

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

Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Commodity marketing • Producing insets • Producing offsets • I don't know • Other (specify)
Logic: Respond if yes to 'Improved wildlife habitat'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

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CSAF Practice Sub-questions

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

Table 11. Follow-on questions for select CSAF practices

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

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

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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
Contour Buffer Strips (CPS 332)	Strip width (feet)	1-100
	Species category	Grasses Forbs Mix
Cover Crop (CPS 340)	Species category (select most common/extensive type if using more than one)	Brassicas Forbs Grasses Legume Non-legume broadleaves
	Cover crop planned management	Grazing Haying Termination
	Cover crop termination method	Burning Herbicide application Incorporation Mowing Rolling/crimping Winter kill/frost
Critical Area Planting (CPS 342)	Species category (select most common/extensive type if using more than one)	Grass Grass legume/forb mix Herbaceous woody mix Perennial or reseeding Shrubs Trees
Feed Management (CPS 592)	Crude protein (percent)	0-100
	Fat (percent)	0-100
	Feed additives/supplements	Chemical Edible oils/fats Seaweed/kelp Other (specify)
Field Border (CPS 386)	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs

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

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

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

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

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

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

309, Agrichemical Handling Facility

311, Alley Cropping

313, Waste Storage Facility

314, Brush Management

315, Herbaceous Weed Treatment

316, Animal Mortality Facility

317, Composting Facility

318, Short Term Storage of Animal Waste and By-Products

319, On-Farm Secondary Containment Facility

320, Irrigation Canal or Lateral

324, Deep Tillage

325, High Tunnel System

326, Clearing and Snagging

327, Conservation Cover

328, Conservation Crop Rotation

329, Residue and Tillage Management, No Till

330, Contour Farming

331, Contour Orchard and Other Perennial Crops

332, Contour Buffer Strips

333, Amending Soil Properties with Gypsum Products

334, Controlled Traffic Farming

336, Soil Carbon Amendment

338, Prescribed Burning

340, Cover Crop

342, Critical Area Planting

345, Residue and Tillage Management, Reduced Till

348, Dam, Diversion

350, Sediment Basin

351, Well Decommissioning

353, Monitoring Well

355, Groundwater Testing

356, Dike and Levee

359, Waste Treatment Lagoon

360, Waste Facility Closure

362, Diversion

366, Anaerobic Digester

367, Roofs and Covers

368, Emergency Animal Mortality Management

371, Air Filtration and Scrubbing

372, Combustion System Improvement

373, Dust Control on Unpaved Roads and Surfaces

374, Energy Efficient Agricultural Operation

375, Dust Management for Pen Surfaces

376, Field Operations Emissions Reduction

378, Pond

379, Forest Farming

380, Windbreak/Shelterbelt Establishment and Renovation

381, Silvopasture

382, Fence

383, Fuel Break

384, Woody Residue Treatment

386, Field Border

388, Irrigation Field Ditch

390, Riparian Herbaceous Cover

391, Riparian Forest Buffer

393, Filter Strip

394, Firebreak

395, Stream Habitat Improvement and Management

396, Aquatic Organism Passage

397, Aquaculture Pond

398, Fish Raceway or Tank

399, Fishpond Management

400, Bivalve Aquaculture Gear and Biofouling Control

402, Dam

410, Grade Stabilization Structure

412, Grassed Waterway

420, Wildlife Habitat Planting

422, Hedgerow Planting

423, Hillside Ditch

428, Irrigation Ditch Lining

428A, Irrigation Water Conveyance, Ditch and Canal Lining, Plain Concrete

428B, Irrigation Water Conveyance, Ditch and Canal Lining, Flexible Membrane

428C, Irrigation Water Conveyance, Ditch and Canal Lining, Galvanized Steel

430, Irrigation Pipeline

432, Dry Hydrant

436, Irrigation Reservoir

441, Irrigation System, Microirrigation

442, Sprinkler System

443, Irrigation System, Surface and Subsurface

447, Irrigation and Drainage Tailwater Recovery

449, Irrigation Water Management

450, Anionic Polyacrylamide (PAM) Application

453, Land Reclamation, Landslide Treatment

455, Land Reclamation, Toxic Discharge Control

457, Mine Shaft and Adit Closing

460, Land Clearing

462, Precision Land Forming and Smoothing

464, Irrigation Land Leveling

466, Land Smoothing

468, Lined Waterway or Outlet

472, Access Control

484, Mulching

490, Tree/Shrub Site Preparation

500, Obstruction Removal

511, Forage Harvest Management

512, Pasture and Hay Planting

516, Livestock Pipeline

520, Pond Sealing or Lining, Compacted Soil Treatment

521, Pond Sealing or Lining, Geomembrane or Geosynthetic Clay Liner

521A, Pond Sealing or Lining, Flexible Membrane

521B, Pond Sealing or Lining, Soil Dispersant

521C, Pond Sealing or Lining, Bentonite Sealant

521D, Pond Sealing or Lining, Compacted Clay Treatment
522, Pond Sealing or Lining - Concrete
527, Sinkhole Treatment
528, Prescribed Grazing
533, Pumping Plant
543, Land Reclamation, Abandoned Mined Land
544, Land Reclamation, Currently Mined Land
548, Grazing Land Mechanical Treatment
550, Range Planting
554, Drainage Water Management
555, Rock Wall Terrace
557, Row Arrangement
558, Roof Runoff Structure
560, Access Road
561, Heavy Use Area Protection
562, Recreation Area Improvement
566, Recreation Land Improvement and Protection
570, Stormwater Runoff Control
572, Spoil Disposal
574, Spring Development
575, Trails and Walkways
576, Livestock Shelter Structure
578, Stream Crossing
580, Streambank and Shoreline Protection
582, Open Channel
584, Channel Bed Stabilization
585, Stripcropping
587, Structure for Water Control
588, Crosswind Ridges
589, Cross Wind Trap Strips
590, Nutrient Management
591, Amendments for Treatment of Agricultural Waste
592, Feed Management
595, Pest Management Conservation System
600, Terrace
601, Vegetative Barrier
602, Equitable Relief
603, Herbaceous Wind Barriers
604, Saturated Buffer
605, Denitrifying Bioreactor
606, Subsurface Drain
607, Surface Drain, Field Ditch
608, Surface Drain, Main or Lateral
609, Surface Roughening
610, Salinity and Sodic Soil Management
612, Tree/Shrub Establishment
614, Watering Facility
620, Underground Outlet
629, Waste Treatment
630, Vertical Drain

632, Waste Separation Facility
633, Waste Recycling
634, Waste Transfer
635, Vegetated Treatment Area
636, Water Harvesting Catchment
638, Water and Sediment Control Basin
640, Waterspreading
642, Water Well
643, Restoration of Rare or Declining Natural Communities
644, Wetland Wildlife Habitat Management
645, Upland Wildlife Habitat Management
646, Shallow Water Development and Management
647, Early Successional Habitat Development-Mgt
649, Structures for Wildlife
650, Windbreak/Shelterbelt Renovation
654, Road/Trail/Landing Closure and Treatment
655, Forest Trails and Landings
656, Constructed Wetland
657, Wetland Restoration
658, Wetland Creation
659, Wetland Enhancement
660, Tree-Shrub Pruning
666, Forest Stand Improvement
670, Energy Efficient Lighting System
672, Energy Efficient Building Envelope
736, Crop By-Product Transfer, interim
724, Water Treatment Facility, interim
735, Waste Gasification Facility, interim
737, Reduced Water and Energy Coffee Conveyance System, interim
740, Pond Sealing and Lining, Soil Cement, interim
751, Individual Terrace, interim
753, Infiltration Ditch, interim
755, Well Plugging, interim
770, Livestock Confinement Facility, interim
775, Drainage Ditch Covering, interim
782, Phosphorus Removal System, interim
800, Controlling Existing Flowing Wells, interim
803, Water Well Disinfection, interim
805, Amending Soil Properties with Lime, interim
808, Soil Carbon Amendment, interim
809, Conservation Harvest Management, interim
810, Annual Forages for Grazing Systems, interim
812, Raised Beds, interim
815, Groundwater Recharge Basin or Trench, interim
817, On-Farm Recharge, interim
818, Water Conservation System, interim
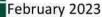821, Low Tunnel Systems, interim
823, Organic Management, interim

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

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Appendix B: Commodity List

CROPS

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

PARSNIP
PASSION FRUITS
PAWPAW
PEACHES
PEANUTS
PEARS
PEAS
PECANS
PENNYCRESS
PEPPERS
PERENNIAL PEANUTS
PERIQUE TOBACCO
PERSIMMONS
PINE NUTS
PINEAPPLE
PISTACHIOS
PITAYA/DRAGONFRUIT
PLANTAIN
PLUMCOTS
PLUMS
POMEGRANATES
POTATOES
POTATOES SWEET
PRUNES
PSYLLIUM
PUMMELO
PUMPKINS
QUINCES
QUINOA
RADISHES
RAISINS
RAMBUTAN
RAPESEED
RHUBARB
RICE
RICE SWEET
RICE WILD
RUTABAGA
RYE
SAFFLOWER
SAPODILLA
SAPOTE
SCALLIONS
SESAME
SHALLOTS
SORGHUM
SORGHUM DUAL PURPOSE
SORGHUM FORAGE
SOYBEANS
SPELT
SQUASH
STAR GOOSEBERRY

STRAWBERRIES
SUGAR BEETS
SUGARCANE
SUNFLOWERS
SUNN HEMP
TANGELOS
TANGERINES
TANGORS
TANGOS
TANNIER
TARO
TEA
TEFF
TI
TOBACCO CIGAR WRAPPER
TOBACCO BURLEY
TOBACCO BURLEY 31V
TOBACCO CIGAR BINDER
TOBACCO CIGAR FILLER
TOBACCO CIGAR FILLER BINDER
TOBACCO DARK AIR CURED
TOBACCO FIRE CURED
TOBACCO FLUE CURED
TOBACCO MARYLAND
TOBACCO VIRGINIA FIRE CURED
TOMATILLOS
TOMATOES
TREES TIMBER
TRITICALE
TRUFFLES
TURNIPS
VETCH
WALNUTS
WAMPEE
WASABI
WATERMELON
WAX JAMBOO FRUIT
WHEAT
WILLOW SHRUB
WINTER MELON
WOLFBERRY/GOJI
YAM

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