NRCS-ADS-093

U.S. Department of Agriculture
Natural Resources Conservation Service

NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number	2. Amendment Number	3. Award /Project Period	4. Type of award instrument:
NR233A750004G047		Date of final signature - 05/15/2028	Grant Agreement

5. Agency (Name and Address)	6. Recipient Organization (Name and Address)
USDA Partnerships for Climate-Smart Commodities c/o FPAC-BC Grants and Agreements Division 1400 Independence Ave SW, Room 3236 Washington, DC 20250 Direct all correspondence to FPAC.BC.GAD@usda.gov	GLOBAL CLEAN ENERGY HOLDINGS, INC 2790 SKYPARK DR SUITE 105 TORRANCE CA 90505-5331 UEI Number / DUNS Number: JR1KF9K4LXQ9 / 962489824 EIN:

7. NRCS Program Contact	8. NRCS Administrative Contact	9. Recipient Program Contact	10. Recipient Administrative Contact
Name: MUSTAPHA ABOUALI	Name: ADAM CARL	Name: Kevin Monk	Name: Amy Thornbury
(b)(6)			

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

15. Project Title/ Description: Expands markets for climate-smart camelina, soybeans and wheat in ID, CO, KS, MO, MT, ND, NE, OK, OR, SD, TX, WA, Tribal and supports farmers implementation and monitoring of climate-smart practices.

16. Entity Type: Q = For-Profit Organization (Other than Small Business)

17. Select Funding Type

Select funding type:	☒ Federal	☒ Non-Federal
Original funds total	$30,000,000.00	$2,562,224.00
Additional funds total	$0.00	$0.00
Grand total	$30,000,000.00	$2,562,224.00

18. Approved Budget

Personnel	$1,149,972.00	Fringe Benefits	$344,992.00
Travel	$288,877.00	Equipment	$0.00
Supplies	$15,200.00	Contractual	$1,136,250.00
Construction	$0.00	Other	$27,064,709.00
Total Direct Cost	$30,000,000.00	Total Indirect Cost	$0.00
		Total Non-Federal Funds	$2,562,224.00
		Total Federal Funds Awarded	$30,000,000.00
		Total Approved Budget	$32,562,224.00

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

Name and Title of Authorized Government Representative KATINA HANSON Acting Senior Advisor for Climate-Smart Commodities	Signature KATINA HANSON Digitally signed by KATINA HANSON Date: 2023.05.26 10:24:03 -05'00'	Date
Name and Title of Authorized Recipient Representative RICHARD PALMER CEO	Signature	Date May 24 2023

NONDISCRIMINATION STATEMENT

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

PRIVACY ACT STATEMENT

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

Statement of Work

Purpose

The purpose of this agreement, between the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) and Global Clean Energy Holdings, Inc., is to build markets for climate-smart commodities and invest in America's climate-smart producers to strengthen U.S. rural and agricultural communities.
(Global Clean Energy Holdings, Inc. is referred to as Recipient throughout this Statement of Work)

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 $32,562,224

TOTAL FEDERAL FUNDS $30,000,000
PERSONNEL $1,149,972
FRINGE BENEFITS $344,992
TRAVEL $288,877
EQUIPMENT $0
SUPPLIES $15,200
CONTRACTUAL $1,136,250
CONSTRUCTION $0
OTHER $27,064,709 (includes PRODUCER INCENTIVES $6,943,750)
TOTAL DIRECT COSTS $30,000,000
INDIRECT COSTS $0

TOTAL NON-FEDERAL FUNDS $2,562,224
PERSONNEL $1,149,972
FRINGE BENEFITS $344,992
TRAVEL $288,878
EQUIPMENT $0
SUPPLIES $15,200
CONTRACTUAL $0
CONSTRUCTION $0
OTHER $365,874 includes PRODUCER INCENTIVES $0)
TOTAL DIRECT COSTS $2,164,916
INDIRECT COSTS $397,308

Recipient has elected to use the de minimis indirect cost rate.

Recipient has elected to use unrecovered indirect costs as match in the amount of $397,308.

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 and associated Project Narrative.

Resources Required

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

Milestones

See attached Benchmarks 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
Climate-Smart Practices List and Limitations
Data Dictionary
Climate-Smart Specific Terms and Conditions

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FY2022 Partnership for Climate-Smart Commodities
USDA-NRCS-COMM-22-NOFO0001139

Project Title: Climate-Smart Camelina

Applicant Name: Global Clean Energy Holdings, Inc.

Prime Applicant:
Global Clean Energy Holdings, Inc. is the prime applicant of this project. Global Clean Energy Holdings, Inc.'s subsidiary, Sustainable Oils, is a camelina seed company that sells camelina seed to growers and contracts to buy back all the camelina grain growers produce. Bakersfield Renewable Fuels (BKRF) is also a subsidiary of Global Clean Energy Holdings, Inc. BKRF is a biorefinery producing Renewable Diesel, Sustainable Aviation Fuels (SAF), Renewable Propane, Renewable Naphtha, Renewable Butane, and other Bioproducts and Chemicals. They will be responsible for marketing the renewable diesel that is made from the oil that is produced from camelina grown in this project.

Partners:
This project includes fourteen sub-award and contract partners, each with a unique focus and specialty. Partners on this project include: ARVA Intelligence Corp, Davis Instruments, Earth Optics, EarthDaily Agro, ExxonMobil, Farmobile, Intelinair, Jerry Hatfield, Li-Cor, Memes Associates Ltd., Metos USA, The Ohio State University, The University of Montana and Yardstick. **ARVA Intelligence Corp.** will initiate the COMET model evaluation and will provide AI predictive modeling and carbon model integration. **Davis Instruments** will provide weather data, pest and disease models as well as assist with data exchange. **Earth Optics** will deliver on-vehicle electromagnetic induction and ground penetrating radar along with a machine learning based model. Earth Optics will also perform all soil sampling. **EarthDaily Agro** will deliver satellite imagery, crop stage modeling, and carbon modeling. **ExxonMobil** will provide life cycle analysis support, soil carbon data validation and synthesis, soil carbon microbiology. **Farmobile** will provide equipment data logging and crop storage logging. **Intelinair** will deliver crop health monitoring, crop constituent modeling, **Jerry Hatfield** will lead the analytical approach of the project to calculate carbon balances in the soil and provide the expertise required for the design of the equipment and data needed to quantify the response of camelina to the environment and management practices. **Li-Cor** will provide gas and water flux measurement as well as sensor validation and calibration, **Memes Associates Ltd.** will lead the back-office design, data integration and data flow efforts. **Metos USA** will provide weather data, pest and disease models as well as assist with data exchange. **The Ohio State University** will provide biophysical vegetation model measuring CO2, water and energy, as well as technoeconomic model and life cycle analysis. The Ohio State will assist with publishing the results. **The University of Montana** will provide an economic impact analysis and assist with publishing the results. **Yard Stick** will provide measurement with their spectroscopic soil carbon probe. Appendix A has an outline of prime applicant and partners.

Executive Summary

Global Clean Energy Holdings, Inc. (GCEH) and a world-class team proposes to conduct a large-scale pilot project to implement, measure, and validate the Climate-Smart advantages of *Camelina sativa* (L.) in both rotational (e.g., on fallow acres) and winter crop (e.g., double-crop with soybeans in a corn-soybean rotation) production systems. The project will accelerate farmer adoption of camelina as a non-food crop grown to produce **more plant-based feedstock for renewable biofuels and chemicals with low carbon intensity and no land-use change while increasing carbon capture in the soil.** Further, the project will support market development to provide additional revenue streams to growers and provide a premium for this low carbon intensity crop.

The transportation sector is the largest source of CO_2 emission in the country, having surpassed electricity generation in 2017.[1] The hardest segments to electrify – aviation, marine, and heavy-duty vehicles – account for 37% of transportation energy use[2] and are projected to grow considerably faster than other modes. Fulfilling the feedstock requirements of renewable diesel plants under construction or planned will require an estimated 59 million acres of soybean production.[3] Supplying feedstock demands with soybeans alone seems unrealistic and underscores the urgent need for targeting incremental production acres with short season intermediate crops such as camelina.

Key Climate-Smart agricultural practices piloted in this project include Climate-Smart Agriculture and Forestry (CSAF) Mitigation activities such as: **Soil Health Crop Rotation (E328E), Modifications to Improve Soil Health and Increase Soil Organic Matter (E328F), No-Till to Reduce Soil Erosion (E329A), No-Till to Increase Plant Available Moisture (E329C), No-Till to Increase Soil Health and Soil Organic Matter Content (E329D):**

- Estimated Yield of 1,400 lbs./acre, generating an incremental revenue stream of $560/acre using no-till practices on idle land.[4] Total projected **incremental grower revenue of ~$55.4M** over the course of the project.
- 75 gal per acre of renewable diesel. **(~7.4M gallons over 5 years)**[5]
- **70% decrease in land erosion on project acres**[6]
- **20% reduction in nutrient loss on project acres**[6]
- **50% reduction in greenhouse gas emission on project acres**[6]
- 0.2 tons/acre per year increase carbon capture[6] **(~20,000 tons over 5 years)**
- 0.5 tons/acre increased biomass in the soil[6] **(~50,000 tons over 5 years)**

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[1] Energy Information Agency, https://www.eia.gov/energyexplained/use-of-energy/transportation.php.
[2] Davis, Stacy C., and Robert G. Boundy. Transportation Energy Data Book: Edition 39. Oak Ridge National Laboratory, 2020, https://doi.org/10.2172/1767864.
[3] Internal Sustainable Oils model based on US average soybean production of 51.4 bu./ac and 19% average soybean oil content
[4] Internal Sustainable Oils Model using average of 1400/lbs. per acre and $0.35+$0.05 for grain.
[5] Internal Sustainable Oils Model using average of 1400/lbs. per acre, 38% average camelina oil content and 99% conversion efficiency
[6] Dr. Jerry Hatfield estimate (personal communication)

This **project aligns with the objectives of the government-wide Sustainable Aviation Fuel (SAF) Grand Challenge**, which aims to reduce cost, enhance sustainability, and expand the domestic production and use of SAF to meet 10% domestic aviation fuel demand by 2030, and 100% of domestic aviation fuel demand by 2050,[7] including **USDA's commitment to support farmers with climate-smart agriculture practices and research and sustainable crop management at scale.**[8] Projected outcomes strongly overlap those desired by the Projected Climate Smart Commodities solicitation:

- Increased markets for Climate-Smart Commodities
- Increased adoption of Climate-Smart Agriculture and Forestry (CSAF) practices and systems that reduce agricultural greenhouse gas emissions (GHG) and/or increase carbon sequestration from the agricultural sector
- Demonstration of scalable and low-cost measurement/quantification, monitoring, reporting, and verification (MMRV) systems
- Increased innovation and consistency in measuring farm-level GHG benefits
- Testing and evaluation of efficient traceability through supply chains from the production of the commodity to its delivery to the consumer
- Improved understanding and communication of economic and adaptation benefits, as well as ancillary environmental benefits
- Equitable administration that includes underserved Native American, small and beginning producers
- Empowerment of farmers, ranchers, and forest landowners to drive CSAF markets and practice adoption
- Improve the quality and ability to verify GHG emission reductions and carbon sequestration benefits associated with commodities produced using CSAF practices to inform future measurement and quantification standards
- Reduce transaction costs
- Increase understanding and awareness of Climate-Smart Commodities among Native American, small, and beginning producers and expand their participation
- Increase the efficiency of supply chain traceability
- Increase the competitive advantage of U.S. farmers

Government regulatory agencies, such as the California Air Resources Board (CARB) and the Environmental Protection Agency (EPA), will also benefit from more accurate data supporting the CI reduction benefits of using camelina feedstocks for renewable fuel production. Additionally, the data from this project may be published and will help improve the body of knowledge and information available to the USDA and the public. The MMRV methodologies described in Section 3 will be beneficial to more crops than camelina, and indeed will enable a structure for measuring, reporting, and verification that can be used for all major commodity crops grown in the U.S. Our objective of reporting a GHG emission and carbon intensity level per crop at harvest could also serve as a model for developing a similar system in other crops.

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[7] FY23 Department of Energy Budget Request, Energy Efficiency and Renewable Energy Office, p. 47
[8] Fact Sheet: Biden Administration Advances the Future of Sustainable Fuels in American Aviation, https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/09/fact-sheet-biden-administration-advances-the-future-of-sustainable-fuels-in-american-aviation/

Project Description

Camelina (*Camelina sativa* L.) is an oilseed crop in the Brassicaceae family that has a short growing season (85-100 days) and a high oil content ranging from 32%-38% (as much as two times greater than soybeans). Camelina tolerates cold weather well (germinates at soil temperatures of 36-38°F) and is productive in regions with limited rainfall (as little as 11 inches).[9] It can be grown on fallow land or as rotational crop. **Camelina is an excellent feedstock for renewable biofuels** and chemicals as well as a source of meal for animal feed. **Camelina produces fuel with one of the lowest carbon intensities (CI)**[10], and early studies show camelina meal may also reduce methane emissions in cattle.[11] Camelina is not used for human consumption, and the target of fallow and overwinter acres does not replace nor displace any human use feedstock, thus incurring no indirect land use change (ILUC) penalty. Camelina oil from Global Clean Energy Holdings, Inc.' subsidiary, Sustainable Oils, is the only camelina oil approved for the CARB Low Carbon Fuel Standard. **Camelina grown in this project will be harvested and the product will be crushed and turned into Climate-Smart renewable diesel fuel and renewable propane**. Global Clean Energy Holdings, Inc. has established offtake agreements with ExxonMobil to purchase renewable diesel, and with AmeriGas/UGI (the nation's largest retail propane distributor serving customers in all 50 states) to purchase renewable propane, both produced from camelina oil at GCEH's biorefinery in Bakersfield, California. These large-scale fuel supply agreements provide access to ready markets with demand for low CI camelina and offer higher income potential for farmers brought into this program. **This helps ensure market viability long after the Climate-Smart Commodities project completion.**

Global Clean Energy Holdings, Inc. is partnering with camelina growers and a selection of leading companies in the measurement, monitoring, reporting, and validation (MMRV) space to collect and utilize on-farm data to evaluate growing practices, carbon intensity, and carbon capture of camelina production. **The goal of this project is to holistically improve agronomic practices and drive adoption of carbon-smart practices that will ultimately lower the GHG emissions and CI of camelina production and increase carbon sequestration in the soil with a benefit to the crops in rotation with camelina**. Global Clean Energy Holdings, Inc. will work with growers to plant camelina as a rotational crop (either on fallow land or as an overwinter crop replacing bare soil) on their land currently in production. None of the production practices we utilize with farmers disturb the ground below the plow zone, nor does any activity in this grant involve concentrated animal feeding operations. Global Clean Energy Holdings, Inc. and its project partners will provide all technical assistance needed for successful completion of this project. A detailed schedule of activities, technical assistance and materials can be found in Appendix B of the Project Narrative. Quarterly milestones and benchmarks have been identified in this project that will help ensure the project is on task and that the implementation of Climate-Smart practices is on target with each grower. Quarterly Benchmarks and associated budget estimates can be found in Appendix C.

This project will enable growers to better understand and quantify the impact of various management practices on yield, oil content, inputs, soil carbon, GHG emissions, and CI when

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[9] Agricultural Marketing Resource Center, Iowa State University, https://www.agmrc.org/commodities-products/grains-oilseeds/camelina

[10] https://www.globenewswire.com/news-release/2015/02/05/703358/10118820/en/CARB-Issues-First-Of-Its-Kind-LCFS-Pathway-for-Sustainable-Oils-Patented-Camelina.html

[11] https://www.mdpi.com/2076-2615/12/9/1082/pdf?version=1650581343

growing camelina in commercial settings. This will be accomplished through the piloting of a low-cost measurement and quantification framework to assess how farm practices impact the CI of camelina, thereby creating incentives for farmers to further lower camelina's CI while generating extra revenue for them and expanding the availability of feedstock for low-CI sustainable fuel production. Electronic field records (EFR) will provide traceability and support the transformation of camelina from a commodity crop to a differentiated crop (See Section 4) that can command a premium from biorefineries.

Global Clean Energy Holdings, Inc. will work with growers and partners to automatically collect complementary sets of on-farm data that enable accurate and complete determinations of GHG emissions and CI. Global Clean Energy Holdings, Inc. will provide each farmer with equipment, data loggers, and an in-field weather station with soil moisture probes. Additionally, Global Clean Energy Holdings, Inc. and its partners will conduct soil testing and collect imagery (satellite, fixed-wing aerial, drone, and radar), as well as other sensor data from each field. High-level output of the data collection will enable reporting of various metrics for the camelina grown (*e.g.*, CO_2e, gallons of diesel produced, pound of fertilizer utilized, and inches of water required per ton of camelina grain produced). Global Clean Energy Holdings, Inc. will work with its partners during this project to validate and assess new soil carbon MMRV technology. Soil carbon will be measured using traditional combustion-based analysis, which will then be compared with emerging low-cost *in situ* sensors as well as above-ground and non-invasive soil carbon MMRV technologies and machine learning-based AI platforms for predictive carbon assessment. Soil samples will also be used to measure and correlate the overall impact on microbial activity and soil health.

Ultimately, this work will result in several high-impact outcomes. First, by using a combination of established models, ground-truthing sensors and imagery, we will build artificial intelligence platforms and calibration portfolios that allow more accurate soil carbon measurement from satellites and sensors. **This will lower transaction costs and improve data accuracy**. Second, data gathered on-farm can be fed directly into models (such as GREET) to calculate a CI for each specific field of camelina and compare that with the general CI already attained for camelina. **Long-term, this will enable growers to have a differentiated product based on quality and CI in addition to yield, giving growers the opportunity to earn a premium while enabling market forces to drive the adoption of Climate-Smart agricultural practices and continue to reduce the CI of producing camelina.** This will allow growers—many of whom are Native American, small farmers or are just beginning to farm—to generate extra revenue by adopting camelina as an alternative crop growing in their fields, generating jobs and extra income, all in addition to the tremendous soil health benefits.

This project will impact the cost, availability, and carbon intensity of transportation fuels for difficult-to-electrify segments. The development of competitive pricing schemes for camelina growers will encourage adoption of camelina production, which subsequently will increase the amount of feedstock available for renewable diesel and sustainable aviation fuel (SAF). This will result in more gallons of renewable transportation fuels available in the U.S. made from one of the lowest carbon intensity feedstocks produced, helping the U.S. reduce its transportation emissions and support the Sustainable Aviation Fuel Grand Challenge. Ultimately, this collaboration will lead to more robust utilization of natural climate solutions to increase soil carbon for both agricultural crop production and general land management, and at the same time provide more feedstock for renewable fuels.

Underserved Growers Focus

As discussed in Section 2, this project is targeting participation from 70 growers and 99,000 planted acres over 5 years, with an emphasis on serving and supporting three historically underserved groups, as defined by the U.S. Farm Bill:

- Native American Farmers (Socially Disadvantaged Producers)
- Smaller Farmers (Limited Resource Farmers)
- Beginning Farmers (Limited Resource Farmers)

Fifty percent of the growers targeted for this project will be from historically underserved groups. We will target growers of Native American descent, small farmers and beginning farmers. The first target group is socially disadvantaged producers consisting of Native American farmers. The Native American Tribes we will target for inclusion in this project are Chippewa Cree from the Rocky Boys Reservation, the Assiniboine and Sioux Tribes from the Fort Peck Reservation, and the Assiniboine (Nakoda) and Gros Ventre (Aaniiih) Tribes from the Ft. Belknap Reservation. We have been unable to present to Tribal Councils for Tribal Resolutions, however, we have received a letter of support from the farm manager of the Chippewa Cree tribe, who has worked with us in the past. We have also identified three sub awardee's that have previous experience working with tribes to lead our efforts working on tribal lands. The second target group is limited resource farmers consisting of smaller and beginning farmers with older equipment that historically have high barriers of entry to participation in precision farming. This project will target these growers to validate lower cost solutions, allowing them to take better advantage of opportunities with data and improve operations. This project will help all target groups incorporate climate smart crops and practices into their cropping systems. For all of these historically underserved growers, this project is also intended to make their land and operations more valuable by generating new revenue streams and providing pricing premiums.

Project Need

The Climate-Smart value of camelina can be noticed throughout the value chain, from grower to refiner, creating a compelling need for a pilot demonstration which would allow market forces to take effect, expanding the planted acres and adoption of Climate-Smart practices. Camelina holds tremendous promise as a Climate-Smart commodity, but barriers prevent its production from reaching its full-scale potential. This project addresses several areas required to scale carbon-smart farming and clean renewable fuel production. First, through training and outreach, and using on-farm data as discussed in Section 2, this project will allow growers to realize the value of Climate-Smart farming practices that will earn a premium for crops grown with lower CI. Second, this project will integrate learnings from on-farm data into a proactive decision support matrix that will help growers see the beneficial impact of decisions on yield, GHG reduction and CI as well as the associated expected revenue of those decisions as discussed in Section 3. Market forces will then encourage farmers toward carbon-smart decisions. Third, this project will lower the transaction cost of better soil carbon capture and monitoring by aligning models, imagery, and ground truthing sensors in commercial applications. This alignment will foster a wider adoption of these services and encourage more growers to engage in carbon markets as also discussed in Section 3. Fourth, the project addresses the traceability barrier that impedes realization of the value of low-CI feedstocks for renewable fuels by collecting and reporting the CI data using the electronic fields record (EFR), as discussed in Section 4. Finally, this project addresses two

knowledge gaps of camelina production: 1) agronomic best practices and 2) impact on GHG emissions and carbon sequestration on fallow versus winter bare ground. Data gathered through this project will enable better recommendations when producing camelina, which will increase oil and meal yields. This will encourage more camelina to be inserted into traditional wheat-fallow rotations or added as an over-winter rotational crop, improving soil health while generating income for farmers.

Approach to minimize transaction costs associated with project activities

This project will start by utilizing the COMET planning model, with each grower participant estimating the total impact of the project from adding camelina into a wheat-fallow rotation or acres that go unplanted in the winter to target areas with the most carbon sequestration impact and GHG benefits. The project will validate the impact of those changes through various verification methods to give growers confidence in the methods and practice recommendations.

To minimize transaction costs for this project and longer-term, full-scale implementation, the project focuses on two areas: automated data collection and model/calibration refinement. First, the ability to collect, catalogue, and analyze data in a low cost and automated way is key to allowing more growers and companies to participate. Automated and low intervention data generation and collection will allow this project to gather the maximum amount of data possible at the lowest cost. The on-farm data generated by the equipment, weather and environmental data collected by the stations, and the images from satellites and sensors will largely be automated. In addition to utilizing existing data collection technologies, this project will support assessment of new technologies for non-invasive soil carbon measurement by our partners. The ability to collect high throughput on-farm data will lower transaction costs and allow the project to be implemented at full scale. Model and calibration refinement will further lower long-term transactional costs. More accurate models and calibrations will allow for quicker, easier, and less costly monitoring and reporting, minimizing total transaction costs. Finally, the team will incorporate collected data to develop and refine machine learning and artificial intelligence-based models that will maximize GHG reduction and CI predictive capabilities while minimizing data input.

Approach to reduce producer barriers to implementing CSAF practices for the purpose of marketing climate-smart commodities.

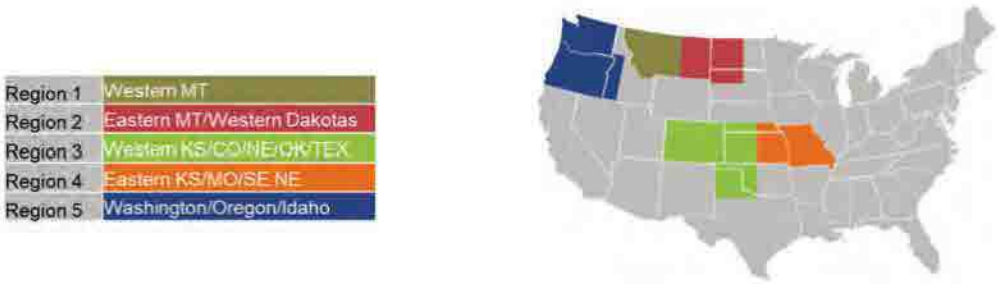
To reduce producer barriers and transaction costs associated with the project, Global Clean Energy Holdings, Inc. will supply growers with automatic equipment loggers that record operations, capture use parameters, and geo-reference and time-stamp the data. Data from these loggers are automatically uploaded to the cloud and accessible with granted permission, thus reducing the human interaction needed to collect the data. In the same manner, Global Clean Energy Holdings, Inc. will gather in-field weather and soil moisture data that are automatically uploaded to the cloud and use satellite-based and fixed-wing imagery to aggregate the highest volume of data collected at minimal cost and provide it to growers. Soil carbon measurements using new technologies, analyses, and data will also be provided.

Global Clean Energy Holdings, Inc. is providing these automated tools and services to growers to obtain the widest possible participation by the most diverse set of growers. Eliminating that cost burden allows growers at varying levels of economic means to participate. Additionally, as we believe camelina with data is more valuable than camelina without data, Global Clean Energy

Holdings, Inc. will incentivize growers to share their data by offering a premium up to $0.05 per pound on their grain sales (up to yearly maximum) on top of the contracted grain price in exchange for that data. This premium will offset any extra time they may expend to help gather the data. During grower recruitment, Global Clean Energy Holdings, Inc. will interview growers and ask if they are receiving other federal payments for the same activities on the same land under any other USDA conservation program. We will use this step in the recruitment process to ensure no double payments are going to growers for the same activities. This approach to grower engagement also ensures the avoidance of duplicated payments for practices on farm acres.

Geographic Focus and Target Acres

The expected focus of the project will include growers in five (5) agroclimatic regions that cover 12 states. We will target two main practices in these areas: those following wheat-fallow rotations (where camelina could be planted in place of fallow) and those that would benefit from a short-season, overwinter crop, which is ideal for camelina.



Five Agroclimatic Project Regions

The focus on similar agroclimatic regions will allow us to maximize learning in more areas and minimize travel expenses rather than focusing on individual states that may not be as differentiated. The current regional plan allows a stable and scalable project plan that can be effectively executed.

Region 1 includes western Montana. We are targeting fifteen growers total from this area. This region is primarily a spring plant region. The first year of this project (Spring 2023) we will target five growers. We will add ten growers to the project in year two. (Spring 2024). We will keep these fifteen growers for years three through five.

Region 2 includes eastern Montana and the western Dakotas. We are targeting ten growers for this region. This region is primarily a spring plant region. The first year of this project (Spring 2023) we will target two growers. We will add eight growers to the project in year two. (Spring 2024). We will keep these ten growers for years three through five.

Region 3 includes western Kansas, western Oklahoma, eastern Colorado, and northwest Texas. We are targeting fifteen growers in this region. This region will have both Fall and Spring planting. First planting for this project will be Fall 2023. We will target ten growers for this planting. We

will target five growers for Spring 2024 planting. We will continue to work with these fifteen growers throughout the project.

Region 4 includes eastern Kansas and western Missouri. This region is primarily Fall planted. We will target fifteen growers for this region. We will start with two growers planting in Fall 2023. We will add thirteen growers for Fall 2024 planting for a total of fifteen. We will continue to work with these fifteen growers throughout the project.

Region 5 includes most of Washington, all of Oregon, and western Idaho. This region will have both Fall and Spring planting. First planting for this project will be Spring 2023. We will target three growers for this planting. We will target Fall 2023 planting with three growers as well. We plan to add seven growers for Spring 2024 planting for a total of ten growers for Spring 2024 planting. Fall 2024 we will add two growers to the Fall 2023 grower group for a total of five Fall planting growers. We will continue to work with these fifteen growers throughout the project.

Appendix D includes a chart that outlines the planned number of growers for each region, shows the target for growers each year (both fiscal and crop year), and indicates the focus of spring or fall planting. This chart also shows the total number of acres for spring and fall planting each year. Global Clean Energy Holdings, Inc. will buy back the grain grown on all these acres throughout the project and additionally will offer a $0.05 premium (up to a yearly maximum) to growers for data that accompanies this grain. This premium is in addition to the contracted price growers will receive for their grain.

Project Management Capacity

Global Clean Energy Holdings, Inc. piloted a proof-of-concept during the past crop year similar in scope to this proposed project, but at a smaller scale. This was done to ensure project management capacity, project readiness, and to identify any unforeseen obstacles to the successful completion of the project before large-scale expansion. We are currently working with many of the project partners to refine processes for execution of required partner deliverables. Many of the key lessons learned from the proof-of-concept pilot revolved around data capture and transmission, as well as back office and software requirements. Data capture, transferability, storage, and security are all key to this project. The proof-of-concept pilot identified several issues with utilizing off-the-shelf farm management information systems for data capture and transfer. Global Clean Energy Holdings, Inc. was able to make adjustments for this project from those key lessons learned. Analysis of the agronomic data from the proof-of-concept pilot is ongoing and we will share with growers any key agronomic insights that we learn. Global Clean Energy Holdings, Inc. will use all lessons learned to help develop a training guide for supporting growers in the large-scale pilot project. The training guide will cover, at a minimum, the basics of installing equipment, reporting, and reviewing data.

At the project kickoff, we will have regional learning sessions with growers to share all the lessons gleaned from the proof-of-concept and show how the Climate-Smart farming activities using camelina are benefiting the farms participating in the project. The lead project administrator and project director will manage relationships with partner companies and growers. The lead project administrator and project director have over 60 years of combined experience leading teams and project launches with several multinational companies.

Climate-Smart Agriculture Practices Project at Large Scale:

Background

Camelina is native to Central Asia and the Mediterranean with both annual and winter annual biotypes. Camelina has been grown in the United States for many years, but only at a small scale, with total U.S. plantings estimated to be under 100,000 acres. Camelina is a short season, highly water efficient crop with good nutrient utilization. These characteristics make it an ideal crop for several production systems, such as: 1) areas where growers might normally leave land fallow every other or every third year to conserve moisture and nutrients; and 2) areas that can introduce a short-season, overwinter crop that can be harvested sufficiently early to allow a major crop to be planted. Our project targets both of these production systems, typically found in the north-western and north-central United States and southern corn-belt regions. Camelina is a perfect rotation crop to introduce into many of these cropping systems and is an ideal crop for making renewable diesel due to the low carbon intensity required to produce the crop.

Climate-Smart Practices Focus of Project

Cash crop production practices that leave land fallow, either annually between growing seasons or during fallow periods in a crop-fallow rotation, have several unintended consequences. These include a lack of new biomass returned to the soil, lack of carbon sequestration, and soil loss due to high wind and water erosion. To ameliorate these issues, we plan to introduce camelina as a rotational crop in two main target production systems. First, we will target acres in these regions that would normally be left fallow in a wheat-fallow crop rotation. We will convert these acres from fallow to camelina producing acres. Second, we will target production practices where growers normally leave the ground bare just over winter before planting a crop the following year. Camelina will mature and be ready to harvest in approximately three months in the target growing regions. This short season allows the primary crop to be planted early enough in the season to maximize its yield potential. We will work with growers to plant camelina as a crop in the fall which could be harvested early spring before other crops need to be planted. The target Climate-Smart practices that we are focusing on are: **Soil Health Crop Rotation (E328E), Modifications to Improve Soil Health and Increase Soil Organic Matter (E328F), No-Till to Reduce Soil Erosion (E329A), No-Till to Increase Plant Available Moisture (E329C), No-Till to Increase Soil Health and Soil Organic Matter Content (E329D).** Since camelina is a short-season, very water-efficient crop with good nutrient utilization, increased benefits to the soil from planting camelina, along with returns from the crop, will be economically advantageous for the grower**.** It is estimated that growers will yield 1,400 lbs./acre of camelina on their fallow acres generating an incremental revenue stream of $560/acre**. Global Clean Energy Holdings, Inc. will buy all the camelina grain that growers on the project can produce which will make the targeted cropping practices more profitable with camelina in the rotation than without growing camelina.** It is one goal of this project to prove the economic viability of growing camelina to the grower.

The environmental benefits of this project are multifaceted. First, we will **see increased carbon sequestration** from planting a crop in ground that would normally be left fallow or bare, estimated to be **0.2 tons/acre**.[6] Second, we will see **increased soil organic matter** by leaving this biomass and new root mass in the soil, estimated to be **0.5 tons/acre**.[6] Third, we will minimize wind erosion by seeding a crop in the field holding the soil in place instead of laying fallow or bare allowing

wind to blow the soil. Fourth, we will lower GHG emissions in fields planted with camelina. We will be incorporating our work into COMET, GREET, and other models so growers will be able to better understand the benefits of these decisions. Lastly, **we will be producing a crop whose main use is the production of renewable fuels**. Since camelina's only uses are non-human, we will not be taking away from any human consumption needs, avoiding the food versus fuel debate. Since the target acres are normally fallow or bare acres, we would not be taking any food-based crop out of production nor expanding into other uses for land, thus incurring no indirect land use change (ILUC) penalty.

Project Outreach and Recruiting Growers/Landowners

Global Clean Energy Holdings, Inc. and its subsidiary, Sustainable Oils, has tight and integrated relationships with many growers in the target areas. Sustainable Oils sells seed and buys the resulting grain from growers in the western United States and southwestern corn belt. Sustainable Oils leveraged its relationships with growers in Montana for the proof-of-concept, and will leverage even more of these relationships as the project scale broadens. For the large-scale project, Global Clean Energy Holdings, Inc. will target 70 growers from five (5) regions covering parts of 12 states (Colorado, Idaho, Kansas, Missouri, Montana, Nebraska, North Dakota, Oklahoma, Oregon, South Dakota, Texas, and Washington) with a total five-year expected acreage of 99,000 acres. We believe this will provide valuable insights from the data collected and build a solid foundation for scaling further.

The territory managers for Sustainable Oils will lead recruitment efforts for this project, with support from the Global Clean Energy Holdings, Inc. Ag Information team. Our approach to enroll growers in this project will entail: 1) leveraging the existing relationships we have with growers, and 2) conducting regional outreach meetings introducing the crop and project to multiple growers who are less familiar with camelina. As part of this effort, growers will have access to all the information gathered on their farm in this project. They will have their own "User ID" for the on-farm weather station and equipment data logger, so they can utilize all the data from their complete farm, not just the project fields. Additionally, we will give growers the soil maps from their fields in this project. These are all provided to the farmer at no cost to them, and they will receive a premium of up to $0.05/lb. (up to a yearly maximum) on top of the contract rate for their grain for sharing their data with us.

Support and Training for Growers/Landowners

Once the final roster of growers is selected for the project, the Global Clean Energy Holdings, Inc. Ag Information team along with project partners will deliver and install the equipment on the growers' farms. The initial one-on-one training will occur with the growers for proper use and reporting. A project manual will be left with the growers that covers each piece of equipment and data gathered in the project. This manual will be assembled with help from the original equipment manufacturers. The manual will have contact information for all needed support and questions. If a grower needs in-person support, the local Global Clean Energy Holdings, Inc. team member will be available to assist them. At the end of the season, regional meetings will be held to share lessons learned with growers and learn from their perspectives on administrative areas that can be improved.

Financial Assistance to Growers

There are two aspects of financial rewards to growers who participate in this program. First, camelina is a valuable crop sold today on contract. Global Clean Energy Holdings, Inc. will buy back all the camelina that a grower can produce at a contract price. Additionally, this project will develop a market where a premium is paid for camelina based on low-CI farming. The goal is to transform camelina marketing for growers from just selling a commodity through a contract, to a data-backed, higher-value crop. To develop the industry for this shift in grower grain marketing, Global Clean Energy Holdings, Inc. will pay a premium to growers in the project of up to $0.05/lb. (up to a yearly maximum) for grain that has a complete set of data that can be used to calculate CI for each field. The lower the CI, the more value this grain has when making renewable diesel. Farmers growing crops with lower CI deserve to gain extra value from that crop, and this mechanism could help facilitate that transition.

Focus on Native American Farmers, Smaller Farmers and Beginning Farmers

This project will especially target underserved Native American, smaller and beginning farmers. These major segments of our target market have not yet been able to reap the benefits of climate-smart or precision agriculture. These operations traditionally use older equipment that limits their opportunity to be part of the precision agriculture discussion, and/or they lack the means to incorporate such tools as on-farm weather stations and imagery. Global Clean Energy Holdings, Inc. will utilize data loggers that work on a variety of equipment and help these producers record the needed data to participate in many of the opportunities traditionally reserved for newer equipment or larger operations. **The intent of this project is to directly help these groups enter the precision agriculture space and prove that the concept could be expanded to more farmers in similar circumstances.** This project will also train these growers on the benefits of the Climate-Smart practices they are incorporating into their operations.

For these underserved groups, the benefits of this project are four-fold: 1) Growers will be paid a premium for their grain that has data attached (on top of a contract price); 2) Growers will be provided with data from their farm including imagery, soil maps, and changes to soil properties including soil organic matter and carbon sequestration; 3) Growers will have a decision support tool that will help them clearly see the expected outcomes from their decisions; and 4) Growers will have access to on-farm weather sensors and equipment data loggers they can utilize all throughout the program. Combined, these measures will help historically underserved farmers integrate into this system and lead in the production of this crop.

Measurement/Quantification, Monitoring, Reporting, and Verification:

Quantification and validation of carbon-smart farming through data is at the heart of this project. Data must be relatable, reliable, and believable for growers to broadly adopt new practices, for camelina purchasers to be willing to pay a premium, and for regulators to accept the low-CI reporting. Two deliverables for this project are: 1) to generate a quantified CI for the crop, and 2) to understand the soil carbon balance and GHG exchange at the end of the growing season. To make this scalable, the project is evaluating several methods and seeks to lower the long-term transaction cost of measuring, quantifying, validating, and reporting the in-field activities and events to output the CI and changes to the carbon balance. General in-field activity will be automatically collected through data loggers collecting critical machine and environmental

observations, including in-field weather stations and various sensors to monitor the greenhouse gas exchanges in the production system. The equipment and environmental data loggers will provide the exact location of the fields and exact timing and amounts of applications in the fields. This project will compare a variety of methods for analyzing GHGs, and soil health/soil carbon benefits in the field to scale across all camelina production in the long term. The goal is to balance the most beneficial and the most scalable systems.

Approach to Greenhouse Gas Benefit Quantification

GHG testing protocols are vital to the success of this project, as they will produce data that will help develop the environmental value story of introducing camelina into the crop rotation and drive further adoption. First, Global Clean Energy Holdings, Inc. will introduce to growers a decision support matrix such as COMET that would help growers proactively understand the likely impact of various decisions before they are made. In order to quantify the environmental benefits, this project will use three different methods including: ground penetrating radar, satellite-based imagery, and analytical approach techniques. This project will also use an in-field measurement system to validate and calibrate the results of the three methods. The in-field measurement portion will be used with 10 to 15 percent of the growers. Ground penetrating radar, electromagnetic induction, satellite-based imagery, soil spectroscopic probes, and advanced analytical approaches will be used with all growers to understand capabilities, scalability, and refine models.

The **ground penetrating radar** and **electromagnetic induction systems** consist of vehicle-mounted scanners that generate data for the entire farm. *Earth Optics* will use machine learning to train a model on *in situ* measurements and then use that model to interpret large areas using these low-cost data from farm vehicles and remote sensing platforms. The project will evaluate this solution as a low-cost scalable way to measure soil carbon and bulk density. Providing new training data to this platform will enable its development into a more robust measurement tool for agricultural soil carbon.

The **satellite-based system** uses imagery to monitor crop health, crop growth stage, yield potential, and nitrogen status. This information will be used by *EarthDaily Agro* to model carbon balance and sequestration. Additionally, the satellite imagery will use machine learning to create models that will compute soil carbon balance and carbon activity in the soil. *ARVA Intelligence* will combine satellite imagery with other ground-based and farm-vehicle data as input to their AI platform to measure, report, and verify GHG reductions. This pilot will evaluate the effectiveness of these emerging technologies as a low cost and scalable way to measure soil carbon, crop stage, and crop health.

The **analytical approach** involves soil sampling at the beginning of the year with georeferenced soil samples across each treatment area. *Dr. Jerry Hatfield*, retired Laboratory Director with USDA's Agricultural Research Service and the National Laboratory for Agriculture and the Environment, will lead an analytical approach of the project to calculate carbon balances in the soil. Each sample will be analyzed with the Haney test to provide an analysis of carbon, nitrogen, microbial activity, C:N ratios, and P and K. At harvest, Global Clean Energy Holdings, Inc. will collect plant leaf samples for total biomass and C and N content. Global Clean Energy Holdings, Inc. will utilize crop growth models to evaluate carbon uptake and potential storage in the soil along with nitrous oxide emissions. These measurements will be used to construct a carbon balance in each field. The carbon balance for each field will be modeled using Systems Approach

to Land Use Sustainability (SALUS) and Agriculture Production Systems SIMulator (APSIM) models and calculated throughout the year.

Dr. Darren Drewry, Assistant Professor, Department of Food, Agricultural and Biological Engineering at The Ohio State University will conduct biophysical simulation analyses to estimate diurnal and seasonal variability of carbon, water, and energy exchange between camelina fields and the surrounding environment. Dr. Drewry's approach will center on the use of the MLCan biophysical canopy-root-soil system model that he has previously developed and applied to the analysis of terrestrial carbon, water, and energy exchange in various agricultural systems. Dr. Drewry's group will develop a camelina version of MLCan utilizing the field measurements described above as well as those his own group makes at selected camelina study sites as part of this project.

The eddy covariance datasets developed in this project will be utilized by Dr. Drewry's group for simulation validation and evaluation, providing a basis for conducting simulation experiments for other geographical locations and climate regimes.

Carbon uptake into soils will be verified using combustion-based soil carbon measurements, which will also be used to validate Ground Penetrating Radar and Electromagnetic Induction techniques. In addition, Global Clean Energy Holdings, Inc. will partner with *Yard Stick* to refine and assess their Department of Energy-funded spectroscopic probe technology for soil carbon measurements. This technology will be assessed alongside other soil carbon Measuring Monitoring Reporting Verification (MMRV) technologies for robustness. In addition, this project will generate soil samples for the *ExxonMobil Technology and Engineering Company* to assess the impacts of soil microbiology on soil carbon sequestration related to the abundance of soil bacteria and fungi.

The various approaches for carbon assessment will be compared to each other for accuracy, cost, and ease of implementation. This will be used to help determine scalability for long term utilization. **It is our intent that the results of these studies be published, which will benefit the agricultural community to better understand and implement carbon smart practices**. Benefits of this comparative analysis will go beyond agriculture, as these technologies are used to provide MMRV for natural climate solutions in other land management systems and other emerging nature-based solutions for carbon removal. This project will help develop more robust MMRV protocols that can reduce the burdens associated with measuring, monitoring, reporting, and verifying carbon removal.

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

Global Clean Energy Holdings, Inc. will supply growers with equipment data loggers to enable the creation of Electronic Field Records (EFR) for each field in which camelina is grown. The data logger will record what, where, and when each activity was performed. Additionally, Global Clean Energy Holdings, Inc.' Ag Information team will periodically visit each site to speak with growers, evaluate the systems, and ensure the proper working conditions of the hardware and sensors. Also, the use of satellite imagery will help monitor activities in the field. All of this information can be added to the EFR. This EFR will remain with the harvested camelina through the supply chain, communicating what was grown, where it was grown, how it was stored, and, importantly, the GHG emissions, CI level to grow that crop, and the change in soil carbon from growing it. As noted in Section 2, the project anticipates operating on **70 farms and 99,000 acres over the 5-year project life**.

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

The first level of reporting starts with a plan. To estimate the benefits of the systems, this project will use the COMET model for each field to give a pre-year impact estimate. Monthly, Global Clean Energy Holdings, Inc. will track the progress estimated from the analytical approach, satellite-based approach and the in-field sensors and report on their status. The report will compare those estimates to the pre-year estimated benefit to track progress. This report will include estimated GHG per field, project, and per dollar spent. It is anticipated that this project will provide **a 70% decrease in land erosion, a 20% reduction in nutrient loss, and a 50% reduction in greenhouse gas emissions**[6]. Additionally, it will include anticipated benefits from varying levels of fallow fields in target areas converting to camelina and adding camelina to bare soils over winter.

In addition to these activities, *Dr. Ajay Shah*, Professor, Department of Food, Agricultural and Biological Engineering at The Ohio State University will lead an analytical approach consisting of a techno-economic analysis (TEA) and life cycle assessment (LCA) of field production, harvest and post-harvest logistics of camelina, and its conversion to renewable diesel at a biorefinery using the data collected by this project to determine the technical feasibility, associated costs, and environmental impacts of renewable diesel made from camelina. In the TEA, we will evaluate process models used to simulate the mass balance and energy requirements for the different processes within the system boundary and scenarios for this project. The upstream process modeling will encompass the discrete harvest and post-harvest logistics to produce and deliver the camelina grain. We will conduct the LCA following the guidelines and requirements of the relevant ISO standards. We will evaluate different environmental impact categories with special focus on global warming potential (GWP) for thorough evaluation of the GHG and carbon emissions from the system. We will account for the carbon fluxes from the different processes within the system boundary to account for the net change in carbon of the entire system, which will provide an indication of the carbon intensity of the system.

Approach to Verification of Greenhouse Gas Benefits

Soil tests will be taken each year for all project fields, and these samples will be georeferenced, which will allow for samples to be collected in the same place year over year. Additionally, in-field sensors will capture canopy-level and soil gas fluxes. Analysis of the fluxes of GHG and H_2O vapor components are calculated in the data acquisition software and stored in the systems and then transferred to the data repository. At selected sites, an eddy correlation tower will be installed with CO_2 and H_2O sensors to measure the exchanges of these gases. Data collected at 30-minute intervals throughout the growing season will be used to determine the C balance for crop canopies, reflecting inputs of carbon balanced by outputs into carbon content of the crop and to the soil. Soil chambers to measure GHG and H_2O emissions from the soil will be placed in the footprint of the flux tower at two of the sites. This placement ensures that measurement of fluxes above the canopy can be directly linked with emissions from the soil. The data would be collected throughout a 24-hour period and integrated for a daily estimate of the emission rate.

Data Integration

There are multiple streams of data across these project sites. To ensure these data fulfill the project objectives, there are multiple steps in the collection, quality control, data storage, data integration, and data analysis. Data for the verification sites will be collected as described in the previous sections and immediately subjected to quality screening to ensure there are no problems with instrumentation. This frequency of data screening will ensure no large data gaps exist. Data will be stored in a relational database as both the raw data and as the quality-controlled data. Data integration will assemble the data from the different streams to evaluate the change in the carbon budget from introducing camelina into the production system. Once the carbon budget is assembled, we can examine among-year and among-site variation. When coupled with the results from the two crop models and biophysical vegetation model, the potential impact across the much larger footprint of the United States can be determined.

Agreement to participate in the Partnerships Network

Global Clean Energy Holdings, Inc. agrees and is excited to participate as a member of the "USDA Partnerships for Climate-Smart Commodities Learning Network." In addition, Global Clean Energy Holdings, Inc. plans to share the information with CARB and EPA, and will publish findings from this project in peer-reviewed journals.

Market Development and Expansion for Climate-Smart Commodities:

Plan to Market

Diesel fuel made from renewable sources is growing in importance and demand. **Renewable diesel fuel made from camelina will have one of the lowest carbon intensities among renewable fuels**[10]. The end result of this project is to have an identifiable carbon-smart crop that is more valuable than a commodity, bringing a premium to camelina growers and encouraging them to grow more of the crop in a Climate-Smart way. Effectively marketing that premium to growers will ensure the longevity of this program. We have secured a partnership to market this Climate-Smart commodity with ExxonMobil. ExxonMobil is a partner that truly wants to enable Climate-Smart agriculture to promote positive benefits to the environment. ExxonMobil has contracted with Global Clean Energy Holdings, Inc. to purchase renewable diesel refined from camelina oil. Their ability to pull this product through the marketplace has made camelina a very attractive crop capable of significantly expanding acres for self-supporting Climate-Smart businesses. Currently there are over **36 million target acres in the United States**. We are actively marketing the opportunity for growers on a portion of these target acres to contract and grow camelina. Estimated economic benefits for producers to participate in growing camelina is being verified and validated by the University of Montana. The work from this project will support the claims Global Clean Energy Holdings, Inc. makes to growers about the economic benefits when growing camelina. Global Clean Energy Holdings, Inc. plans to take lessons learned from this project to regional grower meetings to help market camelina which will expand opportunities after project completion. By creating a system that will turn commodity camelina into a unique Climate-Smart crop, camelina can become a reliable, stable, low-CI feedstock to meet the demand for production of low CI-fuels in difficult-to-electrify transportation sectors such as heavy-duty vehicles, aviation, and marine vessels. Additionally, the data collection methods for creating a Climate-Smart commodity could be used to help inform the USDA on the effectiveness of farming

practices, water response, and nutrient response in other crops. Most importantly, it encourages the development of a carbon market system that mirrors other much larger commodities.

Plan to Track

By establishing a system for growers to produce a unique Climate-Smart camelina crop, we will transform camelina from a commodity crop into a differentiated crop. To realize full value of that differentiated crop, it must be tracked through the system. We will use industry standard systems that automatically create and collect electronic field records (EFR) that are established when the crop was grown in season and then follow the crop throughout the supply chain. These EFRs will be created from a variety of automatically collected data, such as logging as applied and harvest data in equipment, crop stage and crop health data from imagery, and weather data collected from weather stations and soil moisture probes. It is the data in this EFR that can be automatically linked to various sustainability models such as the GREET model that can establish a CI for that crop. That CI becomes another layer of the EFR. As the crop is transported from the field to storage, to crush, and to being refined, the electronic field record will follow that crop. Full value for the low CI of that crop only happens when it is tracked throughout the supply chain.

Estimated Benefit to Growers

The myriad of benefits from introducing camelina as a replacement for fallow acres and acres left bare over the winter has been well stated in the previous sections, and the environmental benefits of this project are multifaceted. First, we will see increased carbon sequestration from planting a deep-rooted crop in ground that would normally be left fallow or bare. Second, since harvesting camelina removes only the seeds while leaving the crop residue and root mass in place, we will see increased biomass and improved soil organic matter over time. Third, we will minimize wind erosion with the seeding of a crop in the field holding the soil in place, instead of laying fallow and allowing wind to blow away the soil. In addition to these environmental benefits, of course, the economic benefit to growers is very important. The economic benefit for growers growing camelina first comes from the contracted grain price for their production. Global Clean Energy Holdings, Inc. will buy 100% of the camelina produced from farmers on this project. In addition to the contracted grain price that farmers will receive per pound of camelina produced, Global Clean Energy Holdings, Inc. will pay to growers a $0.05 per pound premium (up to a yearly maximum) for sharing the data that goes with that camelina. As mentioned in the *Plan to Market* section above, The University of Montana will conduct an economic impact analysis of camelina to validate the estimated economic benefits for participating producers. This assessment will independently confirm the value proposition for growers so that more credibility can be behind the details when sharing the economic impacts with growers.

Post Project Potential

The knowledge gained, models refined, sensors utilized, techniques integrated, and methods learned from this project will facilitate increased adoption of Climate-Smart camelina grown by farmers. The data gathered from the project and analysis performed will provide tangible, concrete results that can be shared with growers to help encourage adoption. Best growing practices can be passed along after this project to encourage greater environmental and economic benefits to farmers. Additionally, the opportunity to prove a stable ecosystem for growers to gain a premium from selling a data-backed crop, rather than just a commodity, will drive increased revenue potential for growers. These factors will accelerate planting of camelina acres, important in

growing a stable supply for renewable diesel, renewable propane, renewable naphtha, renewable butane, and SAF made from camelina. The U.S. has ambitious goals for 100% replacement of low-GHG aviation fuel by 2050, and current large-scale feedstocks include vegetable oils that are used for food. Large scale development of climate-smart camelina will help meet this demand without reducing availability of food crops nor increasing their price. As stated earlier, there are over 36 million acres of camelina-suitable land in the US, and there is a market pull to expand camelina into those acres. The offtake agreement between Global Clean Energy Holdings, Inc. and ExxonMobil ensures the likelihood of the long-term viability beyond this project period. Developing a system that will pay a premium for low-CI camelina provides the certified data that will help inform the USDA on current practices and results which will help them develop future actions to encourage climate-smart commodities.

By design, the approach being piloted and validated will be low-cost and scalable as discussed in Section 3. The use of above-ground measurement techniques, automated data-logging, cloud-based systems and electronic field records will allow growers to quantify the benefits and continuously improve their Climate Smart practices and provide a traceable CI through the supply chain. As described earlier, because this approach relies on market forces and not subsidies to encourage the adoption of Climate Smart practices, the likelihood of long-term viability beyond the project period is high once the methodologies and approaches have been validated by the pilot. At the conclusion of this project, Global Clean Energy Holdings, Inc. plans to extend this work to all contracted acres of camelina, which is estimated to be over 500,000 acres in 5 years.

Appendix A

Lead Project Administrator	Barney Bernstein 919-830-6527 barney.bernstein@susoils.com
Business Point of Contact	Ralph Goehring, Chief Financial Officer 2790 Skypark Dr #105, Torrance, CA 90505 661-742-7730 ralph.goehring@gceholdings.com

Partners		**Roles**
Global Clean Energy Holdings, Inc. (GCEH) and subsidiaries: • Sustainable Oils • Bakersfield Renewable Fuels (BKRF)		• Prime applicant • **Sustainable Oils is a camelina seed company that sells camelina seed to growers and contracts to buy back all the camelina grain growers produce.** • Markets – BKRF Biorefinery flexibly producing Renewable Diesel, Sustainable Aviation Fuels (SAF), Renewable Propane, Renewable Naphtha, Renewable Butane, and other Bioproducts and Chemicals
Growers (producers/landowners)		• **70 Growers, estimated 99,000 total project acres over 5 years in 5 diverse agroclimatic regions covering parts of 12 states.** • Minimum of 50% participation from Underserved Native American, small, and beginning farmers will be targeted for project inclusion.
Measurement, Verification, Monitoring, Reporting	ARVA Intelligence	COMET model evaluation, AI predictive modeling and carbon model integration
	Davis Instruments	Weather data, pest and disease models, data exchange
	Earth Optics	On-vehicle electromagnetic induction and ground penetrating radar, machine learning based model, soil sampling
	EarthDaily Agro	Satellite imagery, crop stage modeling, and carbon modeling
	ExxonMobil	Markets (Renewable Diesel, Sustainable Aviation Fuels); Life Cycle Analysis support, soil carbon data validation and synthesis, soil carbon microbiology
	Farmobile	Equipment data logging, crop storage logging
	Intelinair	Crop health monitoring, crop constituent modeling
	Jerry Hatfield	Lead analytical approach of the project to calculate carbon balances in the soil.
	Li-Cor	Gas and water flux measurement, sensor validation/calibration
	Memes Associates Ltd.	Back-office design, data integration, data flow, and data exchange
	Metos USA	Weather data, pest and disease models, data exchange
	The Ohio State University	Biophysical vegetation model measuring CO2, water and energy, Technoeconomic model and Life Cycle Analysis, publish results
	The University of Montana	Economic impact analysis, publish results
	Yard Stick	Spectroscopic soil carbon probe

Appendix D: Region Growers and Target Acres

			FY YR 1		FY Yr 2		FY Yr 3		FY Yr 4		FY Yr 5
			Crop YR 1	Crop Yr 2		Crop Yr 3		Crop Yr 4		Crop Yr 5	
On-Going Plan		Target	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025	Spring 2026	Fall 2026	Spring 2027
Region 1	Western MT	15	5		15		15		15		15
Region 2	Eastern MT/Dakotas	10	2		10		10		10		10
Region 3	Western KS/CO/OK/TEX	15		10	5	10	5	10	5	10	5
Region 4	Eastern KS/MO	15		2		15		15		15	
Region 5	Washington/Oregon/Idaho	15	3	3	10	5	10	5	10	5	10
	Number of Growers	70	10	15	40	30	40	30	40	30	40
	Acres	360	3,600	5,400	14,400	10,800	14,400	10,800	14,400	10,800	14,400

Regional Plan for Number of Growers and Acres

Quarterly Milestones

Quarterly milestones have been identified that will confirm the project is on task and the implementation of Climate-Smart practices and associated GHG savings are on target with each grower and for the overall project. Successful completion of quarterly milestones and benchmarks will assist in overall project fulfillment aligned with project goals and aid in ongoing long-term success after project conclusion.

By the end of the first quarter year 1, we will develop project support materials, including grower binders, an overall project binder, and general project resources. We will finish recruiting growers for spring planting in regions 1, 2, 3and 5. We will install eddy covariance towers, weather stations, and equipment data loggers with growers in these regions. We will complete field boundary outlines for spring 2023 fields. We will complete initial soil test and ground penetrating radar analysis for designated fields. Quarterly benchmarks we expect to confirm include: 10 producers involved including 5 underserved producers, 3,600 cumulative acres in project, $0 cumulative dollars provided to producers, 0 tons of total GHG emissions reduction on project acres, 1 new marketing channel established, 0 marketing channels expanded, and 16 measurement tools utilized. Additionally, we will report on the equipment installation, boundary completion, and COMET model reports for the initial spring seeded fields. Project expenses in this quarter are estimated to be $4.38M, which include soil tests, imagery, eddy covariance towers, weather stations, data logging expenses and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the second quarter year 1, we will finish recruiting growers for fall planting in regions 3, 4, and 5. We will install eddy covariance towers, weather stations, and equipment data loggers with growers in these regions. We will install bin cables for data capture on stored grain. Quarterly benchmarks we expect to confirm include: 10 producers involved including 5 underserved producers, 3,600 cumulative acres in project, $0 cumulative dollars provided to producers, 82 tons of total GHG emissions reduction on project acres, 1 cumulative new marketing channel established, 0 marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer progress report, project binder updates, and mid-year meetings with growers. Project expenses in this quarter are estimated to be $590k, which includes sensor calibration, database development, mid-year meeting updates and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the third quarter year 1, crops will be harvested and we will complete follow-up soil tests and ground penetrating radar. Quarterly benchmarks we expect to confirm include: 25 producers involved including 10 underserved producers, 9,000 cumulative acres in project, $0 cumulative dollars provided to producers, 164 tons of total GHG emissions reduction on project acres, 3 cumulative new marketing channels established, 0 marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer progress report, a beginning framework for models, and updated project binders. Project expenses in this quarter are estimated to be $1.21M, which includes soil testing, model development, database and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the fourth quarter year 1, we will finish recruiting growers for spring planting in regions 1, 2, and 3. We will install weather stations and equipment data loggers with new growers. We will complete field boundary outlines for fall planted fields. Fall planting operations will be complete. Quarterly benchmarks we expect to confirm include: 25 producers involved including 10 underserved producers, 9,000 cumulative acres in project, $252,000 cumulative dollars provided to producers, 304 tons of total GHG emissions reduction on project acres, 3 cumulative new marketing channels established, 2 marketing channels expanded, and 16 measurement tools

utilized. Additionally, we will provide an update on equipment installation, boundary completion, COMET model reports on fields, year-end project meetings and a year-end report. Project expenses in this quarter are estimated to be $850k, which includes grower incentive, model development, year-end reporting, and general project work by Global Clean Energy Holdings, contractors, and sub awardees.

By the end of the first quarter year 2, we will complete field boundaries for spring seeded crop and COMET model reports for the fields. We will complete soil tests and ground penetrating radar analysis for designated fields. Quarterly benchmarks we expect to confirm include: 55 producers involved including 20 underserved producers, 23,400 cumulative acres in project, $252,000 cumulative dollars provided to producers, 444 tons of total GHG emissions reduction on project acres, 4 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will complete 2024 spring field boundaries and COMET model reports in each of the binders for spring growers as well as the overall project binder. Project expenses are estimated to be $2.55M for the quarter, which include soil tests, radar, imagery, data logging expenses, model development and general project work by Global Clean Energy Holdings, contractors, and sub awardees. By the end of the second quarter year 2, we will complete fall grower recruitment for regions 4 and 5. We will install weather stations and data loggers for new growers. Crops will be sprayed. Quarterly benchmarks we expect to confirm include: 55 producers involved including 20 underserved producers, 23,400 cumulative acres in project, $252,000 cumulative dollars provided to producers, 768 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer progress report, project binder updates, and completion of mid-year meetings. Estimated expenses are $740k, which includes model development, sensor calibration, database development, mid-year meeting update and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the third quarter year 2, crops will be harvested and we will complete soil tests and ground penetrating radar analysis. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 34,200 cumulative acres in project, $252,000 cumulative dollars provided to producers, 1,092 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer progress report, crop model progress reports, and project binder updates. Estimated expenses for the quarter are $1.43M, which include soil tests, model and database development and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the fourth quarter year 2, we will complete fall field boundaries. Fields will be fertilized and fall crop will be seeded. We will complete year-end project update meetings with growers. Quarterly benchmarks we expect to confirm: 70 producers involved including 25 underserved producers, 34,200 cumulative acres in project, $1,638,000 cumulative dollars provided to producers, 1,488 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide completed field boundaries and COMET model report updates to the grower and project binders, as well as year-end project meetings and a year-end progress report. Estimated expenses for the quarter are $2.13M, which includes grower incentives, model development, year-end reporting and general project work by Global Clean Energy Holdings, contractors, and sub-awardees.

By the end of the first quarter year 3, we will complete all of the spring field boundaries. Benchmarks include 2025 spring field boundaries and completed COMET model reports in project binders. We will complete soil tests and ground penetrating radar analysis for designated fields. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 48,600 cumulative acres in project, $1,638,000 cumulative dollars provided to producers, 1,884 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide completed 2025 spring field boundaries and COMET model reports in each of the binders for spring growers as well as the overall project binder. Project expenses are estimated to be $1.64M for the quarter, which include soil tests, radar, imagery, model development, data logging expenses, and general project work by Global Clean Energy Holdings, contractors, and sub awardees. By the end of the second quarter year 3, crops will be sprayed. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 48,600 cumulative acres in project, $1,638,000 cumulative dollars provided to producers, 2,208 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer progress report, project binder updates, and completion of mid-year meetings. Estimated expenses are $680k, which includes analytics development, sensor calibration, mid-year meeting updates and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the third quarter year 3, quarterly benchmarks we expect to confirm: 70 producers involved including 25 underserved producers, 59,400 cumulative acres in project, $1,638,000 cumulative dollars provided to producers, 2,532 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer progress report, crop model progress reports, and project binder updates. Estimated expenses for the quarter are $1.42M, which includes soil testing, model development and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the fourth quarter year 3, we will complete fall field boundaries. Fields will be fertilized and fall crop will be seeded. We will complete year-end project update meetings with growers. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 59,400 cumulative acres in project, $3,402,000 cumulative dollars provided to producers, 2,928 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide completed field boundaries and COMET model report updates to the grower and project binders, as well as year-end project meetings and a year-end progress report. Estimated expenses for the quarter are $2.45M, which includes grower incentive, model development, year-end reporting and general project work by Global Clean Energy Holdings, contractors, and sub-awardees.

By the end of the first quarter year 4, we will complete the spring field boundaries. We will complete soil test and ground penetrating radar analysis for designated fields. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 73,800 cumulative acres in project, $3,402,000 cumulative dollars provided to producers, 3,324 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide completed 2026 spring field boundaries and COMET

model reports in each of the binders for spring growers and overall project binder. Project expenses are estimated to be $1.56M for the quarter, which include model development, data logging expenses, soil tests, imagery and general project work by Global Clean Energy Holdings, contractors, and sub awardees. By the end of the second quarter year 4, crops will be sprayed. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 73,800 cumulative acres in project, $3,402,000 cumulative dollars provided to producers, 3,648 tons of GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer progress report, project binder updates, and completion of mid-year meetings. Estimated expenses are $600k, which includes analytics development, sensor calibration, mid-year meeting updates and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the third quarter year 4, crops will be harvested and we will complete soil tests and ground penetrating radar analysis. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 84,600 cumulative acres in project, $3,402,000 cumulative dollars provided to producers, 3,972 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer progress report, crop model progress reports, and project binder updates. Estimated expenses for the quarter are $1.34M, which includes soil testing, model development, analytics and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the fourth quarter year 4, we will complete fall field boundaries. Fields will be fertilized and fall crop will be seeded. We will complete year-end project update meetings with growers. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 84,600 cumulative acres in project, $5,166,000 cumulative dollars provided to producers, 4,368 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide completed field boundaries and COMET model report updates to the project binders, as well as year-end project meetings and a year-end progress report. Estimated expenses for the quarter are $2.37M, which includes grower incentives, model development, year-end reporting and general project work by Global Clean Energy Holdings, contractors, and sub-awardees.

By the end of the first quarter year 5, we will complete boundaries for spring seeded fields and COMET model analysis on each of the fields. We will complete soil tests and ground penetrating radar analysis for designated fields. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 99,000 cumulative acres in project, $5,166,000 cumulative dollars provided to producers, 4,764 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide completed 2027 spring field boundaries and COMET model reports in the project binders. Project expenses are estimated to be $1.03M for the quarter, which include soil test, radar, imagery, model development, data logging expenses and general project work by Global Clean Energy Holdings, contractors, and sub awardees. By the end of the second quarter year 5, crops will be sprayed Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 99,000 cumulative acres in project, $5,166,000 cumulative dollars provided to producers, 5,088 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16

measurement tools utilized. Additionally, we will provide a data transfer report, project binder updates, and completion of mid-year meetings. Estimated expenses are $340k, which includes analytics development, sensor calibration, mid-year meeting updates and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the third quarter year 5, crops will be harvested and we will complete soil test and ground penetrating radar analysis. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 99,000 cumulative acres in project, $5,166,000 cumulative dollars provided to producers, 5,412 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide a data transfer report, updated crop model reports, and project binder updates. Estimated expenses for the quarter are $585k, which includes soil testing, model development and general project work by Global Clean Energy Holdings, contractors, and sub-awardees. By the end of the fourth quarter year 5, we will complete year-end project update meetings with growers, as well as an overall project completion report. Quarterly benchmarks we expect to confirm include: 70 producers involved including 25 underserved producers, 99,000 cumulative acres in project, $6,930,000 cumulative dollars provided to producers, 5,736 tons of total GHG emissions reduction on project acres, 5 cumulative new marketing channels established, 3 cumulative marketing channels expanded, and 16 measurement tools utilized. Additionally, we will provide completed updates to the project binders, as well as year-end project meetings and a Project End progress report. Estimated expenses for the quarter are $2.11M, which includes grower incentives, project completion report and general project work by Global Clean Energy Holdings, contractors, and sub-awardees.

List of Activities, Technical Assistance, and Materials is show in Appendix B. Quarterly milestones, benchmarks, and estimated costs are shown in Appendix C.

Appendix B: List of Activities, Technical Assistance, and Materials

Activity	Lead - Support	Material
Create Project Materials (one time activity)	Global Clean Energy Holdings, Inc. Ag Info; Global Clean Energy Holdings, Inc. Marketing	Project Packet, Onboarding Kit, Project Binder
Grower Recruitment	Global Clean Energy Holdings, Inc. TM's, Ag Info, and Marketing	Project Packet
Grower Commitment / Onboarding (one time activity)	Global Clean Energy Holdings, Inc. Ag Info	Onboarding Kit, Project binder
Data Logger Installation, Website Login (one time activity)	Global Clean Energy Holdings, Inc. Ag Info, Farmobile	Installation Kits, Project binder, Data Dashboard
Weather Station Installation, Website Login (one time activity)	Global Clean Energy Holdings, Inc. Ag Info, Metos USA, Davis Instruments	Installation Kits, Project binder, Data Dashboard
EC Tower Installation (one time activity)	Global Clean Energy Holdings, Inc. Ag Info, Li-Cor	Installation Kits, Project binder, Data Dashboard
Data Flow and Integration Test	Global Clean Energy Holdings, Inc. Ag Info, Memes Associates Ltd., Project Partners	Data Dashboard
Field Boundary Identification, Field History	Growers. Global Clean Energy Holdings, Inc. TM/Ag Info	Project binder, Data Dashboard
Environmental Review/ NRCS-CPA-52	Global Clean Energy Holdings, Inc. Ag Info, ARVA	Project binder, NRCS Forms
COMET Model Grower Review	Global Clean Energy Holdings, Inc. Ag Info, ARVA	Project binder, Data Dashboard
Order Imagery	Global Clean Energy Holdings, Inc. Ag Info, EarthDaily Agro, Intelinair	Image Plan
Soil Sampling	Global Clean Energy Holdings, Inc. Ag Info, Earth Optics	Project binder, Data Dashboard
Ground Penetrating Radar	Global Clean Energy Holdings, Inc. Ag Info, Earth Optics	Project binder, Data Dashboard
Install In Situ Sensors	Global Clean Energy Holdings, Inc. Ag Info, YardStick	Project binder, Data Dashboard
Fertilizing	Growers, Global Clean Energy Holdings, Inc. TM/Ag Info	Data Dashboard, EFR
Planting	Growers, Global Clean Energy Holdings, Inc. TM/Ag Info	Data Dashboard, EFR
Portable Gas Chamber	Global Clean Energy Holdings, Inc. Ag Info	Data Dashboard, EFR
Mid-year Review	Global Clean Energy Holdings, Inc. TM, Global Clean Energy Holdings, Inc. Ag Info, Project Partners, Growers	Master Project Binder
Crop Care	Growers, Global Clean Energy Holdings, Inc. TM/Ag Info	Data Dashboard, EFR
Storage Cable Installation	Global Clean Energy Holdings, Inc., AGI	Project Binder
Harvest	Growers, Global Clean Energy Holdings, Inc. TM/Ag Info	Data Dashboard, EFR
Data Model Development	Project Partners, Global Clean Energy Holdings, Inc. Ag Info	Data Dashboard, Model Review
Year-end Review and Project Evaluations	Global Clean Energy Holdings, Inc., Project Partners, Growers	Master Project Binder

Appendix C: Benchmarks, Milestones and Estimated Costs

Quarter	Milestones	Benchmarks	Project Expenses	Estimated Qtr. Cost
Q2 YR 1	Project Materials Developed; Spring Grower Contract Region 1,2,5; Equipment Installed; Spring 2023 Field Boundaries, Soil Test, Radar; COMET Model Report; Seeding, Fall Grower Contract Region 3,4,5; Equipment Installed; Data Transfer Progress Report; Project Binder Update; Mid-Year Meeting Crops; Sprayed	Number of Producers Involved-10 Number of Underserved Producers-5 Number of Acres - 3600 $ Provided to Producers - 0 GHG Benefits Quantified – 82 New Markets – 1 Markets Expanded - 0 Number of measurement Tools - 16	Soil Test, Imagery, EC Towers, Weather Stations, Data Logging Expense, Sensor Calibration, Data Base Development, Mid-Year Meeting Updates, General GCEH and sub-awardee work	$4.62M
Q3 YR 1	Harvest; Fall Field Boundaries Outlined; Soil Test, Radar; Data Transfer Progress Report; Model Progress Update; Project Binder Update	Number of Producers Involved-25 Number of Underserved Producers -14 Number of Acres – 9,000 $ Provided to Producers - 0 GHG Benefits Quantified – 164 New Markets – 3 Markets Expanded - 0 Number of measurement Tools - 16	Soil Test, Model Development, Database Development, General GCEH and sub-awardee work	$1.20M
Q4 YR 1	Spring Grower Contract Region 1,2,3,5; Equipment Installed; Fertilize, Fall Seeding; COMET Model Report; Year-End Review; Year-End Report	Number of Producers Involved-25 Number of Underserved Producers -14 Number of Acres – 9,000 $ Provided to Producers – 252K GHG Benefits Quantified – 304 New Markets – 3 Markets Expanded - 2 Number of measurement Tools - 16	Grower Incentive, Model Development, Year End Reporting, General GCEH and sub-awardee work	$1.01M
Q1 YR 2	Spring 2024 Field Boundaries; Soil Test, Radar; COMET Model Report; Seeding	Number of Producers Involved-55 Number of Underserved Producers-28 Number of Acres – 23,400 $ Provided to Producers – 252K GHG Benefits Quantified – 444 New Markets – 4 Markets Expanded - 3 Number of measurement Tools - 16	Soil Tests, Radar, Imagery, Equipment Data Logging Expense, Model Development, General GCEH and sub-awardee work	$2.80M
Q2 YR 2	Fall Grower Contract Region 4,5; Equipment Installed; Data Transfer Progress Report; Project Binder Update; Mid-Year Meeting Crops; Sprayed	Number of Producers Involved-55 Number of Underserved Producers -28 Number of Acres – 23,400 $ Provided to Producers – 252K GHG Benefits Quantified – 768 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Model Development, Sensor Calibration, Data Base Development, Mid-Year Meeting Updates, General GCEH and sub-awardee work	$715K
Q3 YR 2	Harvest; Fall Field Boundaries Outlined; Soil Test, Radar; Data Transfer Progress Report; Model Progress Update; Project Binder Update	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 34,200 $ Provided to Producers – 252K GHG Benefits Quantified – 1,092 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Soil Test, Model Development, Database Development, General GCEH and sub-awardee work	$1.12M
Q4 YR 2	Fertilize, Fall Seeding; COMET Model Report; Year-End Review; Year-End Report	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 34,200 $ Provided to Producers – 1.638M GHG Benefits Quantified – 1,488 New Markets – 5	Grower Incentive, Model Development, Year End Reporting, General GCEH and sub-awardee work	$2.10M

		Markets Expanded - 3 Number of measurement Tools - 16		
Q1 YR 3	Spring 2025 Field Boundaries; Soil Test, Radar; COMET Model Report; Seeding	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 48,600 $ Provided to Producers – 1.638M GHG Benefits Quantified – 1,884 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Soil Tests, Radar, Imagery, Model Development, Equipment Data Logging Expense, General GCEH and sub-awardee work	$2.02M
Q2 YR 3	Data Transfer Progress Report; Project Binder Update; Mid-Year Meeting Crops; Sprayed	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 48,600 $ Provided to Producers – 1.638M GHG Benefits Quantified – 2,208 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Analytics Development, Sensor Calibration, Mid-Year Meeting Updates, General GCEH and sub-awardee work	$650K
Q3 YR 3	Harvest; Fall Field Boundaries Outlined; Soil Test, Radar; Data Transfer Progress Report; Model Progress Update; Project Binder Update	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 59,400 $ Provided to Producers – 1.638M GHG Benefits Quantified – 2,532 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Soil Test, Model Development, General GCEH and sub-awardee work	$1.11M
Q4 YR 3	Fertilize, Fall Seeding; COMET Model Report; Year-End Review; Year-End Report	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 59,400 $ Provided to Producers – 3.402M GHG Benefits Quantified – 2,928 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Grower Incentive, Model Development, Year End Reporting, General GCEH and sub-awardee work	$2.42M
Q1 YR 4	Spring 2026 Field Boundaries; Soil Test, Radar; COMET Model Report; Seeding	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 73,800 $ Provided to Producers – 3.402M GHG Benefits Quantified – 3,324 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Soil Tests, Radar, Imagery, Equipment Data Logging Expense, Model Development, General GCEH and sub-awardee work	$1.97M
Q2 YR 4	Data Transfer Progress Report; Project Binder Update; Mid-Year Meeting Crops; Sprayed	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 73,800 $ Provided to Producers – 3.402M GHG Benefits Quantified – 3,648 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Analytics Development, Sensor Calibration, Mid-Year Meeting Updates, General GCEH and sub-awardee work	$556K
Q3 YR 4	Harvest; Fall Field Boundaries Outlined; Soil Test, Radar; Data Transfer Progress Report; Model Progress Update; Project Binder Update	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 84,600 $ Provided to Producers – 3.402M GHG Benefits Quantified – 3,972 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Soil Test, Model Development, General GCEH and sub-awardee work	$1.02M
Q4 YR 4	Fertilize, Fall Seeding; COMET Model Report; Year-End Review; Year-End Report	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 84,600 $ Provided to Producers – 5.166M	Grower Incentive, Model Development, Year End Reporting, General GCEH and sub-awardee work	$2.32M

		GHG Benefits Quantified – 4,368 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16		
Q1 YR 5	Spring 2027 Field Boundaries; Soil Test, Radar; COMET Model Report; Seeding	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 99,000 $ Provided to Producers – 5.166M GHG Benefits Quantified – 4,764 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Soil Tests, Radar, Imagery, Equipment Data Logging Expense, Model Development, General GCEH and sub-awardee work	$1.49M
Q2 YR 5	Data Transfer Progress Report; Project Binder Update; Mid-Year Meeting Crops; Sprayed	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 99,000 $ Provided to Producers – 5.166M GHG Benefits Quantified – 5,088 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Analytics Development, Sensor Calibration, Mid-Year Meeting Updates, General GCEH and sub-awardee work	$288K
Q3 YR 5	Harvest; Fall Field Boundaries Outlined; Soil Test, Radar; Data Transfer Progress Report; Model Progress Update; Project Binder Update	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 99,000 $ Provided to Producers – 5.166M GHG Benefits Quantified – 5,412 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Soil Test, Model Development, General GCEH and sub-awardee work	$531K
Q4 YR 5	Year-End Review; Year-End Report; Project Recap	Number of Producers Involved-70 Number of Underserved Producers-35 Number of Acres – 99,000 $ Provided to Producers – 6.390M GHG Benefits Quantified – 5,736 New Markets – 5 Markets Expanded - 3 Number of measurement Tools - 16	Grower Incentive, General GCEH and sub-awardee work, Project Final Report	$2.06M

Global Clean Energy Holdings

Climate-Smart Practices and Limitations

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

NRCS Practice Code	Practice Name
E328E	Soil Health Crop Rotation
E328F	Modifications to Improve Soil Health and Increase Soil Organic Matter
E329A	No-Till to Reduce Soil Erosion
E329C	No-Till to Increase Plant Available Moisture
E329D	No-Till to Increase Soil Health and Soil Organic Matter Content

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

N/A

Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Version 1.0

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

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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."

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

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

Project Summary

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

Table 1. Project Summary elements

Data element name	Description	Frequency
Commodity type	Type of commodity(ies) incentivized by the project	Quarterly
Commodity sales	Indicates sales of the commodity(ies) related to the project occurred this quarter	Quarterly
Farms enrolled	Indicates enrollment activities occurred this quarter	Quarterly
GHG calculation methods	Methods used to calculate greenhouse gas (GHG) benefits	Quarterly
GHG cumulative calculation	Method used to calculate cumulative GHG benefits	Quarterly
Cumulative GHG benefits	Whole project estimate of total GHG (CO2e) emission reductions	Quarterly
Cumulative carbon stock	Whole project estimate of total carbon sequestration	Quarterly
Cumulative CO2 benefit	Whole project estimate of total CO2 emission reductions	Quarterly
Cumulative CH4 benefit	Whole project estimate of total CH4 emission reductions	Quarterly
Cumulative N2O benefit	Whole project estimate of total N2O emission reductions	Quarterly
Offsets produced	Amount of carbon offsets produced by project	Quarterly
Offsets sale	Name of marketplace where carbon offsets were sold	Quarterly
Offsets price	Price of carbon in offset sales	Quarterly
Insets produced	Amount of carbon insets produced by project	Quarterly
Cost of on-farm TA	Cost of on-farm technical assistance (TA) provided to producers	Quarterly
MMRV cost	Cost of measurement, monitoring, reporting, and verification (MMRV) activities	Quarterly
GHG monitoring method	Methods used by project to monitor GHG benefits (up to 5)	Quarterly
GHG reporting method	Methods used by project to report on GHG benefits (up to 5)	Quarterly
GHG verification method	Methods used to verify GHG benefits (up to 5)	Quarterly

Partner Activities

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

Table 2. Partner Activities elements

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

Marketing Activities

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

Table 3. Marketing Activities elements

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

Producer Enrollment

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

Table 4. Producer Enrollment elements

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

Field Enrollment

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

Table 5. Field Enrollment elements

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

Farm Summary

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

Table 6. Farm Summary elements

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

Field Summary

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

Table 7. Field Summary elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
Tract ID	Unique Tract ID assigned by FSA	
Field ID	Unique Field ID assigned by FSA	
State or territory of field	State name	
County of field	County name	
Commodity type	Type of commodity produced from field	Quarterly
Practice type	Type of practice(s) incentivized in field (up to seven)	Quarterly
Date practice complete	Date that practice implementation is certified complete	Quarterly
Contract end date	End date of contract	Quarterly
MMRV assistance provided	Indicator that MMRV assistance is provided to field	Quarterly
Marketing assistance provided	Indicator that marketing assistance provided for commodity from field	Quarterly
Incentive per acre or head	Indicator that a per acre/head incentives is provided for the CSAF practice(s) on this field	Quarterly
Field commodity value	Value of commodity produced from field	Quarterly
Field commodity volume	Volume of commodity produced from field	Quarterly
Cost of implementation	Total cost of practice implementation in field	Quarterly
Cost coverage	Percent of total cost of implementation of practice covered by project incentives	Quarterly
Field GHG monitoring	Methods used to monitor GHG benefits in field (up to 3)	Quarterly
Field GHG reporting	Methods used to report on GHG benefits for field (up to 3)	Quarterly
Field GHG verification	Methods used to verify GHG benefits for field (up to 3)	Quarterly
Field GHG calculations	Methods used to calculate GHG benefits for field	Quarterly
Field official GHG calculation	Method used to calculate official GHG benefits for field	Quarterly
Field official GHG ER	Official estimate of total GHG emission reductions for field	Quarterly
Field official carbon stock	Official estimate of total carbon sequestration for field	Quarterly
Field official CO2 ER	Official estimate of total CO2 emission reductions for field	Quarterly
Field official CH4 ER	Official estimate of total CH4 emission reductions for field	Quarterly
Field official N2O ER	Official estimate of total N2O emission reductions for field	Quarterly
Field offsets produced	Amount of carbon offsets produced in field	Quarterly
Field insets produced	Amount of carbon insets produced in field	Quarterly
Other field measurements	Indicator that field data was collected for reasons other than GHG benefit estimation	Quarterly

GHG Benefits - Alternate Modeled

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

Table 8. GHG Benefits – Alternate Modeled elements

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

GHG Benefits - Measured

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

Table 9. GHG Benefits - Measured data elements

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

Additional Environmental Benefits

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

Table 10. Additional Environmental Benefits elements

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

Supplemental Data Submission

Project MMRV Plan

Definition of MMRV elements:

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

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

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

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

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

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

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

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

Field modeled GHG benefit reports

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

Field direct measurement results

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

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

Data Descriptions

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

Unique IDs

Project ID: Unique ID at the project level – "Award Identifying Number" shown on award documentation
Partner ID: Unique ID at the partner level – use EIN; if no EIN, a unique ID will be assigned for use in these reports
State or territory of operation: State or territory name
County of operation: Physical county name
Farm ID: Unique ID at the operation level assigned by Farm Service Agency (FSA)
Tract ID: Unique ID at the tract level assigned by FSA
Field ID: Unique ID at the field level assigned by FSA

Project Summary

Commodity type	
Data element name: Commodity type	**Reporting question:** What climate-smart commodity types are produced by this project?
Description: Type of commodity incentivized by the project. These commodities include those for whom farmers are directly receiving incentives or other types of marketing support. See full list of commodity options in Appendix B. List one commodity per row.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** FSA commodity list
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

Commodity sales	
Data element name: Commodity sales	**Reporting question:** Did project activities result in sales this quarter of the commodity(ies) produced by this project?
Description: Indicator of sales of commodity(ies) related to project activities. If sales are reported, complete the *Marketing Activities* worksheet (Table 3) as part of the quarterly performance report.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

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

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

GHG cumulative calculation

Data element name: GHG cumulative calculation

Reporting question: What method(s) was used to calculate the total cumulative GHG benefits reported here?

Description: List the method(s) that was used to calculate the total cumulative GHG benefits reported by the project this quarter.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Models
- Direct field measurements
- Both

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative GHG benefits

Data element name: Cumulative GHG benefits

Reporting question: What are the project's estimated total GHG emission reductions (CO2eq) to date?

Description: Total cumulative estimated greenhouse gas emission reductions from practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative carbon stock

Data element name: Cumulative carbon stock

Reporting question: How much carbon has the project sequestered to date?

Description: Estimated total cumulative change in carbon stock based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of carbon = 3.67 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative CO2 benefit

Data element name: Cumulative CO2 benefit

Reporting question: What are the project's estimated total cumulative CO2 emission reductions to date?

Description: Estimated total cumulative carbon dioxide emission reductions based on practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative CH4 benefit

Data element name: Cumulative CH4 benefit

Reporting question: What are the project's estimated total CH4 emission reductions to date?

Description: Estimated total cumulative methane reduction based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CH4 reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative N20 benefit

Data element name: Cumulative N2O benefit

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets produced

Data element name: Offsets produced

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets sale

Data element name: Offsets sale

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

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

Data type: Text

Select multiple values: NA

Measurement unit: Name

Allowed values: Text

Logic: Respond if >0 to 'Offsets produced'

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets price

Data element name: Offsets price

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars per metric ton

Allowed values: 0-500

Logic: Respond if >0 to 'Offsets produced'

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Insets produced

Data element name: Insets produced

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cost of on-farm TA

Data element name: Cost of on-farm TA

Reporting question: What is the total amount that has been spent to provide on-farm TA?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars

Allowed values: $0-$50,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

MMRV cost

Data element name: MMRV cost

Reporting question: What is the total amount that has been spent on MMRV activities?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars

Allowed values: $0-$50,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

GHG monitoring method

Data element name: GHG monitoring 1-5

Reporting question: How did the project monitor GHG benefits?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

GHG reporting method

Data element name: GHG reporting 1-5

Reporting question: How did the project track and report implementation of practices to reduce GHG emissions?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

GHG verification method

Data element name: GHG verification method 1-5

Reporting question: How did the project verify implementation of practices to reduce GHG emissions?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Partner Activities

Unique IDs	
Partner ID	Unique Project ID for each partner

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

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

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

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

Partnership start date

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

Partnership end date

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

New partnership

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

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

Partner total requested

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

Total match contribution

Data element name: Total match contribution

Reporting question: What is the total match value the organization has contributed to the project to date?

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

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Total match incentives

Data element name: Total match incentives

Reporting question: What is the total value of match provided by this organization for producer incentives?

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

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Match type

Data element name: Match type 1-3

Reporting question: What types of match contributions has the organization provided to the project?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Match amount

Data element name: Match amount 1-3

Reporting question: What is the value of the match contributions the organization provided to the project?

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

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Training type provided

Data element name: Training type 1-3 provided

Reporting question: What types of training has the organization provided to project partners?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Activity by partner

Data element name: Activity 1-3 by partner

Reporting question: What types of activities has the organization provided to the project?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Activity cost

Data element name: Activity cost 1-3	**Reporting question:** What is the value of the activities this organization has provided to the project?
Description: Cumulative (total) cost of each activity type that the organization has undertaken or offered from the start of the partnership to the end of the reporting quarter. Enter amounts for up to the top three (in dollar value) activity types. The worksheet provides three columns for this data element. Enter one value for each column. If fewer than 3 activity types are provided, leave unnecessary columns blank.	
Data type: Decimal	**Select multiple values**: NA
Measurement unit: Dollars	**Allowed values:** $0-$100,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Quarterly

Products supplied

Data element name: Products supplied	**Reporting question:** What products or supplies were provided to enrolled fields?
Description: Name(s) of products supplied to enrolled producers as incentives or matching contributions. Enter the name of each product, including its brand. Separate each product name with a comma. If no products or supplies were provided by the organization, leave the column blank.	
Data type: Text	**Select multiple values**: NA
Measurement unit: Name	**Allowed values:** Text
Logic: None – all respond	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Quarterly

Product source

Data element name: Product source	**Reporting question:** Which companies provided the supplies?
Description: Name of firm or company from which supplies were obtained.	
Data type: Text	**Select multiple values**: NA
Measurement unit: Name	**Allowed values:** Text
Logic: Respond if text entered for 'Products supplied'	**Required:** Yes
Data collection level: Partner	**Data collection frequency:** Quarterly

Marketing Activities

Commodity type

Data element name: Commodity type

Reporting question: What type of commodity is produced by the farmers enrolled in this project?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: FSA commodity list

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Marketing channel type

Data element name: Marketing channel type

Reporting question: What type of marketing channel is used to sell this commodity?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Number of buyers

Data element name: Number of buyers

Reporting question: How many buyers are there in this marketing channel?

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

Data type: Integer

Select multiple values: No

Measurement unit: Count

Allowed values: 1-500

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Names of buyers

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

Marketing channel geography

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

Value sold

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

Volume sold

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

Volume sold unit

Data element name: Volume sold unit

Reporting question: What is the unit of volume?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Price premium

Data element name: Price premium

Reporting question: What price premium is received for the commodity sold in this marketing channel?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars

Allowed values: $0.01-$10,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Price premium unit

Data element name: Price premium unit

Reporting question: What is the unit for the price premium?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Price premium to producer

Data element name: Price premium to producer

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Percent

Allowed values: 0-100

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Product differentiation method

Data element name: Product differentiation method 1-3

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Marketing method

Data element name: Marketing method 1-3

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Marketing channel identification method

Data element name: Marketing channel identification method 1-3

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Traceability method

Data element name: Traceability method 1-3

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Producer Enrollment

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

Producer data change

Data element name: Producer data change

Reporting question: Is there new/updated information for a producer who is re-enrolling in the project?

Description: Indicates that there is new or updated information for a producer who had previously enrolled in the project and is re-enrolling.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Yes
- No

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Re-enrollment

Producer start date

Data element name: Producer start date

Reporting question: When did the producer enroll in the project?

Description: Date that the producer enrolled in the project by signing their first contract.

Data type: Date

Select multiple values: NA

Measurement unit: MM/DD/YYYY

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

Producer name

Data element name: Producer name

Reporting question: What is the name of producer enrolled in the project?

Description: Name of the producer enrolled in the project; the name must match the name contained in the customer's Business Partner record and the Farm Operating Plan in FSA Business File for that Farm ID.

Data type: Text

Select multiple values: NA

Measurement unit: NA

Allowed values: Text

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

Underserved status

Data element name: Underserved status

Reporting question: Is this producer considered an underserved and/or a small producer?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: No

Data collection level: Producer

Data collection frequency: Initial enrollment

Total area

Data element name: Total area

Reporting question: What is the total area of the farm?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

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

Total crop area

Data element name: Total crop area	**Reporting question:** What percent of the current operation is cropland?
Description: Area of the total farm that is currently used as cropland. If a producer is enrolled in the project for multiple years, review the total crop area each time a new contract is signed and provide any necessary updates.	
Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Total livestock area

Data element name: Total livestock area	**Reporting question:** What amount of the current operation is used for livestock (by area)?
Description: Area of the total farm that is currently used for pasture, grazing, rangeland; or animal housing, feeding or milking. If a producer is enrolled in the project for multiple years, review the total livestock area each time a new contract is signed and provide any necessary updates.	
Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Total forest area

Data element name: Total forest area	**Reporting question:** What amount of the current operation is forested (by area)?
Description: Area of the total farm that is currently considered forest land use. Forest land use means that at least 10% of the land area is covered in trees that will be at least 13 feet tall when mature. If a producer is enrolled in the project for multiple years, review the total forest area each time a new contract is signed and provide any necessary updates.	
Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Livestock type

Data element name: Livestock type 1-3

Reporting question: What types of livestock are raised on the farm?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: Respond if 'Total livestock area' >0

Required: Yes

Data collection level: Producer

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

Livestock head

Data element name: Livestock head 1-3

Reporting question: How many livestock (by type) are on this operation?

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

Data type: Integer

Select multiple values: NA

Measurement unit: Head count

Allowed values: 1-10,000,000

Logic: Respond if 'Total livestock area' >0

Required: Yes

Data collection level: Producer

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

Organic farm

Data element name: Organic farm

Reporting question: Is any part of the farm currently USDA-certified organic or transitioning to USDA-certified organic?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: No

Data collection level: Producer

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

Organic fields

Data element name: Organic fields

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'Organic operation'

Required: No

Data collection level: Producer

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

Producer motivation

Data element name: Producer motivation

Reporting question: Which of the following was the primary reason the producer enrolled in this project?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

Producer outreach

Data element name: Producer outreach 1-3

Reporting question: What types of outreach were provided to producers?

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

Data type: List

Select multiple values: Yes

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF experience

Data element name: CSAF experience

Reporting question: Has the primary operator implemented CSAF practices in the last ten years anywhere on the farm?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF federal funds

Data element name: CSAF federal funds

Reporting question: Were prior CSAF practices supported by federal funds?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF state or local funds

Data element name: CSAF state or local funds

Reporting question: Were prior CSAF practices supported by state or local funds?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF nonprofit funds

Data element name: CSAF nonprofit funds

Reporting question: Were CSAF practices supported by nonprofit funds?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF market incentives

Data element name: CSAF market incentives	**Reporting question:** Were CSAF practices supported by market incentives?
Description: If this farm (under the primary operator) has implemented CSAF practices in the last ten years, was implementation supported by market incentives? Market incentives include premiums paid by a commodity buyer or by a consumer based on branding or labeling as a climate-smart commodity.	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'CSAF experience'	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment

Field Enrollment

Unique IDs

Farm ID	Unique Farm ID assigned by FSA
Tract ID	Unique Tract ID assigned by FSA
Field ID	Unique Field ID assigned by FSA
State or territory of field	State name (must match FSA farm enrollment data)
County of field	County name (must match FSA farm enrollment data)
Prior Field ID, if applicable	Prior Field ID assigned by FSA if there has been reconstitution of the farm resulting in a new Field ID during the field's enrollment in the project

Field data change

Data element name: Field data change

Reporting question: Has the information previously reported for this field changed?

Description: Indicator that this entry is being used to report any relevant changes, such as a new Field ID number or changes to the commodity or practice combinations, for a field that has previously been enrolled in the project.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Re-enrollment

Contract start date

Data element name: Contract start date

Reporting question: What is the start date of the contract with the producer that includes this field?

Description: Start date listed on the contract that enrolls the field in the project.

Data type: Date

Select multiple values: NA

Measurement unit: MM/DD/YYYY

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Total field area

Data element name: Total field area

Reporting question: What is the total size of the enrolled field?

Description: Total size of the field enrolled with the project.

Data type: Decimal

Select multiple values: No

Measurement unit: Acres

Allowed values: .01-500

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Commodity category

Data element name: Commodity category	**Reporting question:** What category of commodity(ies) is (are) produced from this field?
Description: Category of commodity(ies) produced in field enrolled in the project	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Crops • Livestock • Trees • Crops and livestock • Crops and trees • Livestock and trees • Crops, livestock and trees
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Commodity type

Data element name: Commodity type	**Reporting question:** What type of commodity is produced from this field?
Description: Type of commodity produced in field enrolled in the project. See full list in Appendix B. The worksheet provides a drop-down list of the allowed values. Choose the appropriate value. Enter additional commodities in subsequent rows.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** FSA commodity list
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Baseline yield

Data element name: Baseline yield	**Reporting question:** What is the baseline yield of this field?
Description: Average annual yield of commodity in 3 years prior to enrollment. Provide yield for the enrolled field if possible. If not at field level, provide average annual yield for the specific commodity for the operation.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Production per acre or animal	**Allowed values:** .01-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Baseline yield unit

Data element name: Baseline yield unit

Reporting question: Baseline yield unit

Description: Unit of average annual yield of commodity in enrolled field in 3 years prior to enrollment. The worksheet provides a drop-down list of choices for this data element. If "other" is chosen, use the additional column to enter the appropriate yield unit as free text.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Animal units per acre
- Bushels per acre
- Carcass pounds per animal
- Head per acre
- Hundred-weights (or pounds) per head
- Linear feet per acre
- Liveweight pounds per animal
- Pounds per acre
- Tons per acre
- Other (specify)

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Baseline yield location

Data element name: Baseline yield location

Reporting question: For what portion of the operation is the baseline yield being reported?

Description: Location of the reported average annual yield of commodity in 3 years prior to enrollment. If "other" is chosen, use the additional column to enter the appropriate location as free text.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Enrolled field
- Whole operation
- Other (specify)

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Field land use

Data element name: Field land use

Reporting question: What is this field's land use history?

Description: Prior to enrollment, what was the most common land use for this field in the past 3 years?

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Crop land
- Forest land
- Non-agriculture
- Other agricultural land
- Pasture
- Range

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Field irrigated

Data element name: Field irrigated	**Reporting question:** What is this field's irrigation history?
Description: Prior to enrollment, what was the most common irrigation practice on this field the past 3 years?	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • No irrigation • Center pivot • Drip-subsurface • Drip-surface • Flood/border • Furrow/ditch • Lateral/linear sprinklers • Micro-sprinklers • Seepage • Side roll • Solid set sprinklers • Supplemental • Surface • Traveling gun/towline • Wheel Line • Other
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Field tillage

Data element name: Field tillage	**Reporting question:** What is this field's tillage history?
Description: Prior to enrollment, what was the most common tillage approach during the past 3 years?	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • None • Conventional, inversion • Conventional, vertical • No-till, direct seed • Reduced till, inversion • Reduced till, vertical • Strip till • Other
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Practice past extent - farm

Data element name: Practice past extent - farm

Reporting question: What percent of the farm has implemented this CSAF practice (combination) previously?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Field any CSAF practice

Data element name: Field any CSAF practice

Reporting question: What is this field's prior experience with CSAF practices?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Practice past use - this field

Data element name: Practice past use - this field

Reporting question: Have this CSAF practice (combination) been implemented previously in this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Practice type

Data element name: Practice type 1-7

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: See list in Appendix A

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Practice standard

Data element name: Practice standard 1-7

Reporting question: What standard does the CSAF practice follow?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- NRCS
- Other (specify)

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Planned practice implementation year

Data element name: Practice 1-7 implementation year

Reporting question: What year is the CSAF practice planned to be implemented?

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

Data type: Integer

Select multiple values: No

Measurement unit: Year

Allowed values: 2022-2030

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Practice extent

Data element name: Practice 1-7 extent

Reporting question: To what extent is the practice implemented?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Extent

Allowed values: .01-100,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Practice extent unit	
Data element name: Practice 1-7 extent unit	**Reporting question:** Unit for extent of practice implementation
Description: Unit for extent of practice implementation on the field specified by the contract. If "other" is chosen, use the additional column to enter the appropriate unit.	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Acres • Head of livestock • Linear feet • Square feet • Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

CSAF Practice Sub-questions

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

Farm Summary

Unique IDs

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

Producer TA received

Data element name: Producer TA received 1-3

Reporting question: What types of technical assistance were provided to this producer?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Producer incentive amount

Data element name: Producer incentive amount

Reporting question: What is the total value of financial incentives provided to this producer?

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

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Incentive reason

Data element name: Incentive reason 1-4

Reporting question: Why were incentives provided to this producer?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Incentive structure

Data element name: Incentive structure 1-4

Reporting question: What are the units for the financial incentives provided to this producer?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Incentive type

Data element name: Incentive type 1-4

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on enrollment

Data element name: Payment on enrollment

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on implementation

Data element name: Payment on implementation

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on harvest

Data element name: Payment on harvest

Reporting question: What portion of the financial incentive is provided to the producer upon harvest of the commodity?

Description: Any incentive payment provided to the producer upon harvesting or slaughtering the commodity included in the contract. Full payment means the full incentive amount for any contract held by the producer is paid upon harvest. Partial payment means that only part of the full incentive amount for any contract held by the producer is paid upon harvest. No payment means that none of the full incentive amount for any contract held by the producer is paid upon harvest.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on MMRV

Data element name: Payment on MMRV

Reporting question: What portion of the financial incentive is provided to the producer upon completing MMRV requirements?

Description: Any incentive payment provided to the producer upon completing the annual MMRV requirements included in the contract. Full payment means the full incentive amount for any contract held by the producer is paid upon MMRV being complete. Partial payment means that only part of the full incentive amount for any contract held by the producer is paid upon MMRV being complete. No payment means that none of the full incentive amount for any contract held by the producer is paid upon MMRV being complete.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on sale

Data element name: Payment on sale

Reporting question: What portion of the financial incentive is provided to producer upon sale of the commodity?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Field Summary

Unique IDs

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

Commodity type

Data element name: Commodity type

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: FSA commodity list

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Practice type

Data element name: Field practice type 1-7

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: See list in Appendix A

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Date practice complete

Data element name: Date practice complete

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

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

Data type: Date

Select multiple values: No

Measurement unit: MM/DD/YYYY

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Contract end date

Data element name: Contract end date

Reporting question: Contract end date

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

Data type: Date

Select multiple values: No

Measurement unit: MM/DD/YYYY

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

MMRV assistance provided

Data element name: MMRV assistance provided

Reporting question: Was MMRV assistance provided?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Marketing assistance provided

Data element name: Marketing assistance provided

Reporting question: Was marketing assistance provided?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Incentive per acre or head

Data element name: Incentive per acre or head

Reporting question: Is this field receiving a per-acre or per-head incentive?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field commodity value

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

Field commodity volume

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

Field commodity volume unit

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

Cost of implementation

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

Cost unit

Data element name: Cost unit

Reporting question: What is the unit for cost?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Cost coverage

Data element name: Cost coverage

Reporting question: What percent of the practice cost is covered by the incentive?

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

Data type: Integer

Select multiple values: No

Measurement unit: Percent

Allowed values: 0-100

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field GHG monitoring

Data element name: Field GHG monitoring 1-3

Reporting question: How were GHG impacts monitored in this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field GHG reporting

Data element name: Field GHG reporting 1-3

Reporting question: How were GHG benefits reported for this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field GHG verification

Data element name: Field GHG verification 1-3

Reporting question: How was implementation of practices to reduce GHG emissions verified for this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field GHG calculations

Data element name: Field GHG calculations

Reporting question: What methods are used to calculate GHG benefits in this field?

Description: List the method(s) used to calculate GHG benefits in this field. If yes to direct physical measurements, submit result reports (see *Supplemental Data Submission – Field direct GHG measurement results*).

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Models
- Direct field measurements
- Both

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official GHG calculation

Data element name: Field official GHG calculation

Reporting question: What method was used to calculate the official GHG benefits in this field?

Description: List the method used to calculate the official GHG benefits in this field that are reported as part of the project's aggregate impact.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Models
- Direct field measurements

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official GHG ER

Data element name: Field official GHG emission reductions

Reporting question: What are the estimated total GHG emission reductions (CO2eq) in this field?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official carbon stock

Data element name: Field official carbon stock

Reporting question: How much carbon has been sequestered in this field?

Description: Estimated total change in carbon stock based on practice implementation in this field. This data element can be reported in any quarter and is cumulative for the year. Conversion rate is one ton of carbon = 3.67 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official CO2 ER

Data element name: Field official CO2 emission reductions

Reporting question: What are the estimated total CO2 emission reductions in this field?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official CH4 ER

Data element name: Field official CH4 emission reductions

Reporting question: What are the estimated total CH4 emission reductions in this field?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CH4 reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official N20 ER

Data element name: Field official N2O emission reductions

Reporting question: What are the estimated total N2O emission reductions in this field?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field offsets produced

Data element name: Field offsets produced

Reporting question: How many carbon offsets have been produced in this field?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field insets produced

Data element name: Field insets produced	**Reporting question:** How many carbon insets have been produced in this field?
Description: Total carbon insets produced in the field during the quarter (not cumulative). Insets are defined as having been verified and certified using an accepted standard and accounted for within Scope 3 emissions for a firm.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Other field measurement

Data element name: Other field measurement	**Reporting question:** Were data collected from the field for reasons other than GHG benefit estimation?
Description: Direct physical measurements or data collection taken in the field for any reason other than GHG benefits estimation. These reasons could include calibration of GHG estimation tools or models, tracking other environmental benefits (see Field environmental benefits report), and other reasons. If yes, submit corresponding reports (see *Supplemental data submission - Field direct measurement results*).	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

GHG Benefits - Alternate Modeled

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

Commodity type

Data element name: Commodity type 1-6 **Reporting question:** What type of commodity(ies) is produced from this field?

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

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

Measurement unit: Category **Allowed values:** FSA commodity list

Logic: None – all respond **Required:** If project calculates GHG benefits using multiple methods

Data collection level: Field **Data collection frequency:** Annual

Practice type

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

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

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

Measurement unit: Category **Allowed values:** See list in Appendix A

Logic: None – all respond **Required:** If project calculates GHG benefits using multiple methods

Data collection level: Field **Data collection frequency:** Annual

GHG model

Data element name: GHG model

Reporting question: What model was used for alternate calculation of GHG benefits?

Description: Select the model used for the alternate calculation of the field's GHG benefits.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: If project calculates GHG benefits using multiple methods

Data collection level: Field

Data collection frequency: Annual

Model start date

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

Model end date

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

Total GHG benefits estimated

Data element name: Total GHG benefits estimated	**Reporting question:** What is the alternate estimate of the field's total GHG emission reductions?
Description: Total greenhouse gas emission reductions from practice implementation in the field estimated using an alternate model.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total carbon stock estimated

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

Total CO2 estimated

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

Total CH4 estimated

Data element name: Total CH4 estimated	**Reporting question:** What is the alternate estimate of the field's total CH4 emission reductions?
Description: Total methane emission reductions based on practice implementation in the field estimated using an alternate model. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total field N20 estimated

Data element name: Total N2O estimated	**Reporting question:** What is the alternate estimate of the field's total N2O emission reductions?
Description: Total nitrous oxide emission reductions based on practice implementation in the field estimated using an alternate method. Conversion rate is one ton of N_2O = 298 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons N2O reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

GHG Benefits - Measured

Unique IDs

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

GHG measurement method

Data element name: GHG measurement method

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

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

Data collection level: Field

Data collection frequency: Annual

Lab name

Data element name: Lab name

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

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

Data type: Text

Select multiple values: No

Measurement unit: NA

Allowed values: Free text

Logic: None – all respond

Required: If applicable

Data collection level: Field

Data collection frequency: Annual

Measurement start date

Data element name: Measurement start date

Reporting question: On what date did the measurement start?

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

Data type: Date

Select multiple values: No

Measurement unit: MM/DD/YYYY

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

Logic: None – all respond

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

Data collection level: Field

Data collection frequency: Annual

Measurement end date

Data element name: Measurement end date

Reporting question: On what date did the measurement end?

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

Data type: Date

Select multiple values: No

Measurement unit: MM/DD/YYYY

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

Logic: None – all respond

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

Data collection level: Field

Data collection frequency: Annual

Total CO2 reduction calculated

Data element name: Total CO2 reduction calculated

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2

Allowed values: 0-10,000,000

Logic: None – all respond

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

Data collection level: Field

Data collection frequency: Annual

Total field carbon stock measured

Data element name: Total field carbon stock measured

Reporting question: What is the total amount of carbon sequestered based on repeat measurements in this field?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

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

Data collection level: Field

Data collection frequency: Annual

Total CH4 reduction calculated

Data element name: Total CH4 reduction calculated	**Reporting question:** What are the total measured CH4 emission reductions?
Description: Total annual methane emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field
Data collection level: Field	**Data collection frequency:** Annual

Total N20 reduction calculated

Data element name: Total N2O reduction calculated	**Reporting question:** What are the total measured N2O emission reductions?
Description: Total annual nitrous oxide emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of N_2O = 298 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons N2O reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field
Data collection level: Field	**Data collection frequency:** Annual

Soil sample result

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

Soil sample result unit

Data element name: Soil sample result unit

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: If a project conducts soil samples in this field

Data collection level: Field

Data collection frequency: Annual

Measurement type

Data element name: Measurement type

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: If a project conducts soil samples in this field

Data collection level: Field

Data collection frequency: Annual

Additional Environmental Benefits

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

Environmental benefits

Data element name: Environmental benefits

Reporting question: Are environmental benefits other than GHGs being tracked in the field?

Description: Tracking of environmental benefits other than greenhouse gas emission reductions and carbon sequestration in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduction in nitrogen loss

Data element name: Reduction in nitrogen loss

Reporting question: Are reductions in nitrogen losses being tracked in the field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'Environmental benefits'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduction in nitrogen loss amount

Data element name: Reduction in nitrogen loss amount

Reporting question: How much reduction in nitrogen losses have been measured in the field?

Description: Total amount of reduction in nitrogen losses that is measured and reported in the enrolled field.

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: 0-1,000,000

Logic: Respond if yes to 'Reduction in nitrogen loss'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduction in nitrogen loss amount unit

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

Reduction in nitrogen loss purpose

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

Reduction in phosphorus loss

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

Reduction in phosphorus loss amount

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

Reduction in phosphorus loss amount unit

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

Reduction in phosphorus loss purpose

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

Other water quality

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

Other water quality type

Data element name: Other water quality type	**Reporting question:** What type of other water quality metric have been measured in the field?
Description: Type of other water quality metric (besides nitrogen loss and phosphorus loss reductions) that is measured in the field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Sediment load reduction • Temperature • Other (specify)
Logic: Respond if yes to 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Other water quality amount

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

Other water quality amount unit

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

Other water quality purpose

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

Water quantity

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

Water quantity amount

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

Water quantity amount unit

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

Water quantity purpose

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

Reduced erosion

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

Reduced erosion amount

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

Reduced erosion amount unit

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

Reduced erosion purpose

Data element name: Reduced erosion purpose

Reporting question: What is the purpose of tracking reduced erosion in the field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: Respond if yes to 'Reduced erosion'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduced energy use

Data element name: Reduced energy use

Reporting question: Is reduced energy use being tracked in the field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'Environmental benefits'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduced energy use amount

Data element name: Reduced energy use amount

Reporting question: How much energy use reduction has been measured in the field?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: 0-1,000,000

Logic: Respond if yes to 'Reduced energy use'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduced energy use amount unit

Data element name: Reduced energy use unit

Reporting question: What is the unit for the energy use reduction measured in the field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Kilowatt hours
- Other (specify)

Logic: Respond if yes to 'Reduced energy use'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduced energy use purpose

Data element name: Reduced energy use purpose

Reporting question: What is the purpose of tracking reduced energy use in the field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: Respond if yes to 'Reduced energy use'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Avoided land conversion

Data element name: Avoided land conversion

Reporting question: Is avoided land conversion being tracked in the field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'Environmental benefits'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Avoided land conversion amount

Data element name: Avoided land conversion amount

Reporting question: How much avoided land conversion has been measured in the field?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: 0-1,000,000

Logic: Respond if yes to 'Avoided land conversion'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Avoided land conversion amount unit

Data element name: Avoided land conversion unit

Reporting question: What is the unit for the amount of avoided land conversion measured in the field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Acres
- Other (specify)

Logic: Respond if yes to 'Avoided land conversion'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Avoided land conversion purpose

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

Improved wildlife habitat

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

Improved wildlife habitat amount

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

Improved wildlife habitat amount unit

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

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

CSAF Practice Sub-questions

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

Table 11. Follow-on questions for select CSAF practices

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

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

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

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

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

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

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

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

Appendix A: Climate-smart Agriculture and Forestry Practices

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

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

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

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

Appendix B: Commodity List

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

PARSNIP
PASSION FRUITS
PAWPAW
PEACHES
PEANUTS
PEARS
PEAS
PECANS
PENNYCRESS
PEPPERS
PERENNIAL PEANUTS
PERIQUE TOBACCO
PERSIMMONS
PINE NUTS
PINEAPPLE
PISTACHIOS
PITAYA/DRAGONFRUIT
PLANTAIN
PLUMCOTS
PLUMS
POMEGRANATES
POTATOES
POTATOES SWEET
PRUNES
PSYLLIUM
PUMMELO
PUMPKINS
QUINCES
QUINOA
RADISHES
RAISINS
RAMBUTAN
RAPESEED
RHUBARB
RICE
RICE SWEET
RICE WILD
RUTABAGA
RYE
SAFFLOWER
SAPODILLA
SAPOTE
SCALLIONS
SESAME
SHALLOTS
SORGHUM
SORGHUM DUAL PURPOSE
SORGHUM FORAGE
SOYBEANS
SPELT
SQUASH
STAR GOOSEBERRY
STRAWBERRIES
SUGAR BEETS
SUGARCANE
SUNFLOWERS
SUNN HEMP
TANGELOS
TANGERINES
TANGORS
TANGOS
TANNIER
TARO
TEA
TEFF
TI
TOBACCO CIGAR WRAPPER
TOBACCO BURLEY
TOBACCO BURLEY 31V
TOBACCO CIGAR BINDER
TOBACCO CIGAR FILLER
TOBACCO CIGAR FILLER BINDER
TOBACCO DARK AIR CURED
TOBACCO FIRE CURED
TOBACCO FLUE CURED
TOBACCO MARYLAND
TOBACCO VIRGINIA FIRE CURED
TOMATILLOS
TOMATOES
TREES TIMBER
TRITICALE
TRUFFLES
TURNIPS
VETCH
WALNUTS
WAMPEE
WASABI
WATERMELON
WAX JAMBOO FRUIT
WHEAT
WILLOW SHRUB
WINTER MELON
WOLFBERRY/GOJI
YAM

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

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

I. Overarching Statement

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

II. Eligibility and Highly Erodible Lands and Wetlands Compliance

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

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

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

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

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

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

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

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

III. Other Environmental and Cultural Resources Reviews

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

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

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

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

IV. Producer Benefits

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

V. Producer Data Protection and Disclosure

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

VI. Other Data and Reporting Requirements

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

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

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

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

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

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

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

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

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

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

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

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

VII. Competition and Anti-Competitive Practices

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

VIII. Suspension and Disbarment

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

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

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

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

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

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

X. Non-Disparagement

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