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:
NR233A750004G034		Date of Final Signature - 04/14/2028	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	FISCHER FARMS NATURAL FOODS, LLC PO BOX 86 ST. ANTHONY IN 47575 UEI Number / DUNS Number: HQFWNLJBLSK1 / 117051038

7. NRCS Program Contact	8. NRCS Administrative Contact	9. Recipient Program Contact	10. Recipient Administrative Contact
Name: JOHN ANDERSON	Name: LYN MILLHISER	Name: Joseph Fischer	Name: Diana Fischer
(b)(6)			

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

15. Project Title/ Description: The project expands markets for climate-smart beef & pork in Southern Indiana and Northern Kentucky and supports farmer & rancher 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	15,000,000.00	$8,675,225.00
Additional funds total	$0.00	$0.00
Grand total	15,000,000.00	$8,675,225.00

18. Approved Budget

Personnel	$4,554,647.90	Fringe Benefits	$1,056,057.20
Travel	$409,148.30	Equipment	$0.00
Supplies	$827,841.30	Contractual	$3,267,415.80
Construction	$0.00	Other	$4,884,889.50
Total Direct Cost	14,068,891.30	Total Indirect Cost	$931,108.70
		Total Non-Federal Funds	$8,675,225.00
		Total Federal Funds Awarded	15,000,000.00
		Total Approved Budget	23,675,225.00

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: 2023.04.24 08:44:08 -05'00'	Date
Name and Title of Authorized Recipient Representative Diana Fischer Chief Executive Officer Fischer Farms Natural Foods, LLC	Signature Diana R Fischer	Date 4/21/23

NONDISCRIMINATION STATEMENT

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, 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 Fischer Farms Natural Foods, LLC (Recipient), is to build markets for climate-smart commodities and invest in America's climate-smart producers to strengthen U.S. rural and agricultural communities.

Objectives

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

Budget Narrative

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

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

TOTAL BUDGET $23,675,225

TOTAL FEDERAL FUNDS $15,000,000
PERSONNEL $4,140,589
FRINGE BENEFITS $960,052
TRAVEL $371,953
EQUIPMENT $0
SUPPLIES $752,583
CONTRACTUAL $2,970,378
CONSTRUCTION (usually n/a) $N/A
OTHER $4,020,880 (with Producer /ncentives of $2,207,538)
TOTAL DIRECT COSTS $13,216,435
INDIRECT COSTS $1,783,565 ($931,108.70 FED /DC + $852,456.30 NONFED /DC Earned Listed in Other)

TOTAL NON-FEDERAL FUNDS $8,675,225
PERSONNEL $1,594,267
FRINGE BENEFITS $398,567
TRAVEL $0
EQUIPMENT $150,660
SUPPLIES $120,000
CONTRACTUAL $6,346,198
CONSTRUCTION (usually n/a) $N/A
OTHER $65,533
PRODUCER INCENTIVES $0
TOTAL DIRECT COSTS $8,675,225
INDIRECT COSTS $0

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

See attachment – Budget Narrative.

Responsibilities of the Parties:

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

RECIPIENT RESPONSIBILITIES

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

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

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

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

Performance Reports: Quarterly

SF425 Financial Reports: Quarterly

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

Expected Accomplishments and Deliverables

See attached Benchmarks Table and associated Project Narrative.

Resources Required

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

Milestones

See attached Benchmarks Table and associated Project Narrative.

GENERAL TERMS AND CONDITIONS

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

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

Page 006

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Page 007

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Page 008

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Page 009

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Page 010

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Page 011

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Page 012

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Page 013

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Page 014

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Page 015

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Page 019

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Page 021

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Page 022

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Page 023

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Page 024

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Page 025

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Page 027

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Page 029

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Page 030

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Page 031

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Page 032

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Page 033

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Page 034

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Page 035

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Page 036

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Page 037

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Page 038

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Page 039

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Page 040

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Page 041

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Page 045

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Executive Summary - Fischer Farms Ultimate Beef Strategy

Contact Information: Dave Fischer, Principal Investigator 7510 E State Rd. 64 Birdseye, IN 47513, (812) 631-0353, dave@ffnatural.com
Project Partners: Joseph Fischer, Fischer Farms Natural Foods; Jodee Smith, Indiana University; Kevin Ellett, Geospherics
Underserved/Minority Focused Project Partners: Dave Fischer, Fischer Farms Natural Foods

Table of Contents

Executive Summary

Fischer Farms Ultimate Beef Strategy is a project led by Fischer Farms Natural Foods, LLC (FFNF) to first measure and document the Climate-Smart practices that have been in use at Fischer Farms, LLP and other area supplying farms. Then the large difference between the conventional

beef carbon-footprint and the Fischer Farms Climate-Smart practices will be marketed to targeted audiences. These meats will be marketed under a new Fischer Farms – Climate Smart brand. The meat will be further processed in a new solar-powered, highly efficient facility to further reduce the carbon footprint. The efficient distribution and supply chain system already developed by FFNF over the last 18 years will be updated and utilized to efficiently bring the products to the customer. FFNF will work to educate & incentivize over 100 farmers in Southern Indiana and Northern Kentucky, with an emphasis on underserved farmers, to implement NRCS Climate-Smart practices. Technical Service Providers will be used as required to educate and implement these practices. FFNF will work with Geospherics and highly accredited soil scientists to analyze existing NRCS standard climate-smart practices and work with agronomists and farmers to develop new industry standards in climate-smart practices.

The Fischer Farms Ultimate Beef Strategy has three critical components.

I. **Climate-Smart Production**
II. **Climate-Smart Processing & Order Fulfillment**
III. **Climate-Smart Distribution, Marketing & Sales**

It all starts with Climate-Smart Production practices on the farms that adapt NRCS practices to build soil health, capture carbon, and reduce GHG emissions. The farms' production must then be processed efficiently and utilize efficient Climate-Smart processes to quickly fill customer orders. Finally, a dedicated Sales & Marketing effort with an efficient distribution network is required to educate buyers on why purchasing Climate-Smart commodities is good for their business or institution. These three components are much like a three-legged stool, without the success of all three, the others will fail.

Dave and Diana Fischer own two separate businesses, Fischer Farms Natural Foods, LLC (FFNF Natural Meat business) and Fischer Farms, LLP (beef farm). FFNF is applying for this grant and is well-suited to be the key entity to execute this project. Fischer Farms, LLP will be one of many network farmers that sells live animals to FFNF. Fischer Farms, LLP will initially be one of the largest network farms and be relied upon to demonstrate climate-smart practices. Other network farms will be utilized to demonstrate practices and build a community of farms that work together to raise cattle and hogs utilizing climate-smart practices. These network farms will receive a premium for their animals because of the premium in the market that will be paid for Fischer Farms Climate-Smart products. The Principal Investigator (PI), Agronomists, and Network Builders from FFNF will lead this community by organizing educational sessions, field days and research plots on multiple network farms. Dave Fischer has personally built a reputation of innovative practices that work. As one area farmer put it, "I don't understand it, but it works! I've seen the tilth of their soil, seen their crops…" This project will be heavily focused on educating these farmers on how it works and how they can implement these

climate-smart, soil health practices on their farms through a community of farmers working together. This community will tie together and expand an existing network of agricultural professionals from the University of Kentucky, Purdue University, innovative farmers, and other agricultural experts in the fields of soil and animal science.

To help clarify project nomenclature and ownership:

i. Fischer Farms Natural Foods, LLC (FFNF) – Meat processing, sales company owned by Dave & Diana Fischer with their son Joseph as Director of Business Development, Diana as Chief Executive Officer, Dave – Support - Systems & Processes. Diana Fischer owns 51% and Dave Fischer owns 49%.
ii. Fischer Farms, LLP – Beef farm that is separately owned by Dave & Diana Fischer. Dave Fischer owns 99% and Diana Fischer owns 1%.
iii. Fischer Farms – Brand name for our products
iv. Fischer Farms – Collective term for both our businesses

FFNF currently sells the meat raised by Fischer Farms, LLP and other area farms with qualities of Natural, Local, Premium, Fresh, & Sustainable. Through marketing and sales expertise developed over the last 18 years FFNF can command a 20-30% premium over conventional beef. Even budget-minded institutions such as Indiana University are able to justify the pricing by considering the premium quality, local impact, and alignment with the universities like-minded sustainability commitments. This project will expand those qualities to include "Climate-Smart" which will have a significant impact on FFNF's ability to sell at a premium over conventional meat prices. Indiana University will leverage their 10+ years' experience in developing and implementing a local sustainable food policy. As part of this grant, IU will conduct social science research to understand the challenges and opportunities for institutions to purchase climate-smart foods and create best practices for use within institutions to strengthen policies and activities that are shown to work. To achieve this, IU will work in years 1-5 on the Fischer Farms Ultimate Beef project to create relationships and conduct research. IU will disseminate academic and policy-oriented information to nonprofits and public and private institutions to share results.

Fischer Farms has consistently taken a "meet farmers where they are" pathway in working with network farms; in the proposed project activities, this approach will effectively reduce barriers to implementing Climate-Smart practices. This collaborative approach ensures farmers capitalize on their existing assets (e.g., barns, pasture, equipment) and utilize the resources (labor, land) they have available. The current network of 22 producers includes 16 small and underserved farmers. Special emphasis will be placed on expanding the network of farmers in underserved areas with one such area only 10 miles from FFNF's offices. Dave, Diana, & Joseph

Fischer see this project as a boost to supporting small family farms in the area and strengthening the communities in which this network of farmers live. All existing network producers truly appreciate participating in this risk-reducing system that offers flexibility for their lifestyle and/or personal business growth. (Please see Letters of Support). These networks are required to compete with megafarms, huge feedlots, and consolidated packers.

Fischer Farms Natural Foods and its network of participating farms are located in Southern Indiana and Northern Kentucky. Some network farmers are in an identified climate and economic justice geographic area; as enthusiastically noted in Letters of Support, additional farmers will be recruited from these regions should the project be awarded. Project activities will support market expansion in Indiana and into Cincinnati and Louisville, with grocers, restaurants, and institutional buyers.

As Fischer Farms Natural Foods is a for-profit business with a proven track-record, they are well-equipped to ensure their suppliers, contractors and personnel are efficient and that the program's transaction costs are minimized. FFNF will provide in-kind match for personnel who will be responsible for project oversight and efficiency (fiscal, logistical, etc.) in each component of the project (Production, Processing, and Distribution). Upon completion of the grant, FFNF will be a stronger company with key personnel in place and sales volumes to support the expanding business. This business will continue spreading its key principals of building soil health, producing natural premium products, sequestering carbon, and building communities to other farmers and regions long after the completion of this grant.

Fischer Farms Natural Foods LLC operate an annual $7+ million business working with 22 network producers and landowners. All products are marketed as local and natural and uphold Fischer Farms' quality standards. Each week FFNF sells meat to 120+ restaurants and institutions. Indiana University, a customer since 2008, promotes Fischer Farms as a "featured supplier" due to the company's dedication to regenerative sustainable agricultural practices. The proposed program leadership team has an over four-year working relationship and decades of experience working with farmers and promoting climate-smart practices for food and energy systems. Most importantly, this management team is dedicated and passionate about raising Climate-Smart products and building their communities!

I. Fischer Farms Background / Overview

The Fischer farm has been in the family since the mid 1800's. Prior to the 1980s, the rolling grounds on the farm were tilled and cropped and highly eroded. For the past 20 years, Fischer Farms, LLP has focused on regenerating soil health and quality through their complex production system. Driven by sustainable land stewardship and a legacy of family farming, Dave Fischer, Co-owner and Farm Manager, continuously seeks out ways to improve production

practices and increase product quality while simultaneously enhancing the environmental benefits including carbon capture.

In 2004, Fischer Farms Natural Foods, LLC (FFNF) started direct selling beef and now operates as a distribution hub for products from neighboring farms and food businesses including pork, chicken, turkey, eggs, maple syrup, sorghum molasses, vegetables, goat cheese and pretzels. Dave Fischer has long provided the opportunity for small and underserved farmers to participate in the market channels he developed for his Fischer Farms beef. Working with Amish growers, for example, who only communicate via hand-written letters, he has ensured they have consistent sales for years totaling more than $1.1 million since 2012. In 2021, Fischer Farms Natural Foods was awarded the Indiana Small Business Development Center's Family-Owned Small Business of the Year for their contributions to the local rural economy.

Fischer Farms Natural Foods is well-known and respected in the Indiana market where they sell more than $3.2 million of beef annually. Working with the local meat processor, Sander Processing, FFNF developed a collaborative working relationship that, in 2021, evolved into a new strategic partnership facility for slaughter and processing. This new facility has allowed their business to expand to 25+ beef and 90 hogs per week that is immediately sold and shipped throughout the state. Accommodating more than 1,300 custom cuts distributed through 6 distributors, Diana Fischer, Co-owner and CEO of FFNF, manages $7 million in annual order fulfillment from their office in the FFNF facility connected to the Sander Processing facility.

The demand for Fischer Farms meat is well-established. Joseph Fischer, Director of Business Development, is in constant contact and ongoing communication with distributors, buyers, restauranteurs, chefs, and institutions to provide not just high-touch customer service, but one-on-one education about regenerative agriculture and why buying meat from Fischer Farms differs fundamentally than buying from a broadline distributor. Chefs quickly understand the high quality of Fischer Farms products, but only through ongoing conversations and long-term trust building, that can ensure chefs and buyers understand the food system benefits of sustainable purchasing.

FFNF currently works with 22 small network farmers who partner to raise beef. The partnerships with each network farmer take on a variety of structures; each member can specialize in an aspect best suited to their available resources. An end-to-end cattle farm is complex and requires scale at critical parts of the supply chain. Areas include heifer development; spring, fall, and summer calving herds to provide year-round supply; genetics selection and development; proper weaning facilities to minimize cattle stress; vaccination and animal health protocols; feeder cattle growing/grazing development 550-850 pounds and finishing 850-1,400 pounds. Almost all farmers in the network are missing key capabilities to produce a finished calf ready for processing. Even a cow/calf farm has complexities and costs

that a typical small or even mid-size farmer will struggle to execute efficiently without scale. For this reason, FFNF has chosen to "meet farmers where they are" and be very flexible with the farmer's resource availability. Some rotationally graze cattle on their land for a flat fee per day. Others own their cattle and Fischer Farms, LLP buys the cattle as feeders or FFNF buys the finished cattle if they meet the strict guidelines for genetics, natural feeding, sustainability, husbandry, and overall quality. Additional examples of how Fischer Farms "Meets Farmers Where They Are" include:

New Market: A part-time farmer who owns 25 acres of pasture ground, used to purchase feeder cattle in the spring, rotationally grazed the calves, and then sold the calves in the fall. In 2020 he grazed 20 cow/calf pairs from Fischer Farms from May until November. He is paid $1.40/day for each pair which resulted in three times more profit than previous years' model. He won the Indiana Forage Council producer of the year award in 2022.
Improved Practices: Two young farmers were interested in switching from their father's and grandfather's method of constantly grazing entire fields. Fischer Farms hired a part-time expert grazer to work with each farmer to set-up new systems and assisted with adaptations to weather and growing conditions. This resource was provided to the beginning rotational grazers at no cost.

Cropland Conversion: A network farmer retired from business but still enjoys managing his 140-acre farm. Fischer Farms, LLC helped him convert 40 acres from cropland back to pasture and installed waterers to allow for rotational grazing. The farm's exterior fences do not permit grazing small calves, so the farmer grazes cows without calves during the summer and spring calving cows from December through February. He enjoys moving the cattle 2-3 times per week and how his farm is now all in grass with minimal erosion.

Beef Quality

Over the last 18 years, Fischer Farms has determined what key components are required to raise the highest quality beef. First is to start off with the right genetics for marbling, ribeye area, and tenderness. Next the cattle must always have nutrition and gain a minimum of 1.75 lbs. per day during their growing phase. Finally, the finish phase needs to result in a slow but steady gain of approximately 2.5 lbs. per day and the cattle are not harvested until truly finished. Dave Fischer personally inspected every steak produced for the first 7 years of FFNF. He would then deliver directly to top chefs across Indiana. The feedback from these chefs gave Dave the understanding of what true quality was and how to consistently deliver this quality. Dave learned that the color of the meat indicates tenderness and this tenderness is mostly attributable to the genetics. Producing a quality steak one time is easy; but it is very difficult to deliver consistent high quality. Fischer Farms has been able to achieve consistently high quality by taking the chef feedback all the way back to bull selection, heifer development, and the cattle nutrition program. Fischer Farms can deliver more consistent high quality because of the

detailed management of the cattle from genetics to processing. Conventional beef is unable to know the detailed background of the cattle they are slaughtering and therefore determine quality grade by a three second inspection of the ribeye while processing 6,000 head per day.

Ryegrass-Corn Silage Rotation

Fischer Farms has fine-tuned the NRCS standard practice of grazing cover crops to a unique, but replicable, rotation of an annual ryegrass, wheat, crimson clover cover crop planted in September of each year followed by no-till corn for silage planted in late May. The annual ryegrass mix grows quickly in the fall and produces a massive root system along with 24" above-ground growth that is rotationally grazed until January. Fall-born calves creep graze the slow growing months of January-February. In March, the ryegrass starts growing quickly again with 2-3' of above ground biomass by April when some is grazed, and some is harvested and chopped for silage. A final harvest for ryegrass silage happens in May-June, creating up to three harvests per year on the ryegrass planting. Annual ryegrass can produce 2,600-4,500 pounds of root mass per acre; corn produces 3,000-4,000 pounds (Magdoff and Van Es 2021). In *Building Soils for Better Crops*, Magdoff and Van Es reference studies that show after incorporating a cover crop, only 13% of the above ground carbon remained while 50% of the root-derived carbon was present. During the 100 days of corn plant growth, the corn plants are estimated to capture 18 tons of CO_2 per acre from the air (Thelen 2021). The above-ground biomass is harvested for silage in August, leaving behind the roots. Thus, with an approximate 8,000 pounds of roots added to the soil, FFNF calculates an additional 4,000 pounds per acre of persistent organic matter are added annually from roots alone.

Dr. Lloyd Murdock, University of Kentucky, analyzed the results in October 2017 after Fischer Farms repeated this practice for 7 years. Dr. Murdock showed that 14" of the fragipan layer was converted to subsoil in the 7 years. Also, the field where these practices were done had 9.9" of topsoil, the neighboring field with the same slope, soil type, and history but managed for pasture had only 4" of topsoil. Ryegrass roots are able to penetrate over 40" deep into the fragipan and develop pathways through the soil for future crops to develop deep root systems. The ryegrass roots produce a salt extract that also chemically break down the fragipan, expanding topsoil and subsoil layers.

After following this process for the last 12-15 years, the soil in Fischer Farms' fields is visibly darker and higher in organic matter. Dr. Murdock estimated that an additional 1" of topsoil was added each year. Soil samples pulled in 2011 showed average organic matter of 2.4% and Cation-Exchange-Capacity (CEC) average of 10.2. Soil samples pulled in 2020 from the same area had OM of 3.6% and CEC of 14.7.

Dr. Murdock's Fischer Farm research findings (included along with his letter of support) demonstrate how this system showed dramatically better results than other farmers utilizing ryegrass; the full season and multiple annual harvests allow roots to grow to their full potential. Dr. Murdock lives only 15 miles from a large network farm in Kentucky and will continue to work with us on improving their soil through these practices.

In summary, the Fischer Farms Ultimate Beef Project will utilize key learnings Fischer Farms has made on its farm implementing standard NRCS practices in the area of cover crops grazing, rotational grazing, nutrient management, and no-till practices. And implement new practices of Kelp feeding, diverse cover crops, grazing summer annuals and microbiome practices that are just now finishing university research trials.

II. Fischer Farms Ultimate Beef Project

Project Goals & Activities

Fischer Farms Ultimate Beef Strategy is an innovative farm-to-buyer approach that will implement NRCS Climate-Smart practices and additional best practices developed at Fischer Farms for beef production; establish a farmer network to magnify farmer, land, soil and animal benefits; and take action at every step of the processing and marketing journey to reach a negative carbon hoofprint.

Fischer Farms Ultimate Beef Strategy is uniquely positioned to address the requirements of the Partnerships for Climate Smart Commodities program through rigorous scientific research and quantification, sustainable scaling of business practices, and innovative partnerships and collaborations focused on equity and justice. From on-farm production, through processing and distribution, and finally to end buyers, the Fischer Farms Ultimate Beef label is a pilot project with a carbon negative hoofprint, a diversified and equitable farmer network, and a long-standing commitment to quality and customer service that can be tailored to other regions.

The Fischer Farms Ultimate Beef Strategy will:

[1] ***Implement climate-smart practices and research*****:** Implement climate-smart production practices, activities, and systems on network farms in conjunction with robust scientific research and quantification of carbon sequestration and GHG emissions from the Fischer Farms Farmer Network

[2] ***Develop equity and justice focused partnerships*****:** Expand work with innovative partnerships and collaborators focused on equity and justice for farmers and the food system

[3] ***Enhance sustainability and efficiency of processing:*** Enhance the efficiency and sustainability of the Fischer Farms Ultimate Beef brand through streamlined, climate-smart processing and renewable energy

[4] *Expand market through sales and marketing Climate-Smart campaign*: Expand upon existing customers by marketing Climate-Smart through a strategic sales and marketing campaign that clearly articulates the impact of climate-smart beef and pork to consumers

To accomplish the above listed goals, Fischer Farms Natural Foods has developed a project plan that incorporates activities across four initiatives. Three initiatives (I, II, and III) sub-divide the beef value chain into distinct components. A fourth initiative, (0) Program Management, Research and Dissemination, will span across the entire beef value chain (and all project activities). The project is expected to enable growth after the conclusion of the 5-year grant period of an additional 25+% without further construction of new facilities followed by prolonged, sustainable growth.

Program Goals	Production	Processing	Market Exp.
[1] Implement climate-smart practices & research	X	X	X
[2] Develop equity and justice focused partnerships	X		X
[3] Enhance sustainability and efficiency of processing		X	
[4] Expand market through sales & marketing campaign			X

Leadership Team Participation

Fischer Farms has put together a unique leadership team to make this project successful.

Dave Fischer, PI and Project Lead, will spend 90% of his time managing the entire project. Dave puts in long days and will continue this dedication to making this project successful. He is passionate about this work and is excited to take his experience from the last 20+ years to the next level with a focus on Climate-Smart. His previous role of Fischer Farm Manager has been filled by an experienced employee who has been promoted to the role. Additionally, a key cattle person and mechanic have been hired to ensure Dave can focus on his new role.

Diana Fischer will spend 90% of her time managing the processing and order fulfillment portions of this project as Processing Operations Director. Diana has been the key day-to-day manager for FFNF for 10+ years. Her attention to detail and endless pursuit of customer satisfaction makes her perfect for this role.

Heath Weyer currently reports to Diana in Order Fulfillment. He has accepted the role of Further Processing Manager if this grant is awarded and his current position will be backfilled. Heath brings 20 years of experience as a Process Engineer at a large manufacturing plant to this position. He has taken the lead role in identifying the further processing equipment needed and the design of the new building. Heath will be 100% dedicated to the successful start-up and efficient running of the Further Processing facility to bring Climate-Smart products to market at reasonable prices.

Joseph Fischer will be 15% dedicated to the project in Year 1 with a transition to 90% dedication in Years 2 - 5 as project production and sales volumes scale in Y2. He is currently engaged part-time in synergistic projects promoting local food sourcing in the Indiana area and online direct-to-consumer market. Joseph grew up in the business and worked frequently on the farm during his childhood years and into college. He worked successfully as a healthcare merger and acquisition transaction consultant for 3 years prior to returning to the family business in 2019. Since 2019 Joseph has led sales and marketing efforts for FFNF and grown sales through the challenging COVID- 19 time period. Joseph is enthusiastic about selling Climate-Smart products and overseeing a marketing and sales team to ensure successful market expansion during the project.

Ultimate Beef Quality Standards

The Ultimate Beef Project will start with the key components that Fischer Farms has determined to produce consistently top-quality beef. Top quality is critical to the success of this project because despite the meat being Climate-Smart, customers won't buy inferior or inconsistent quality, and will likely not pay a premium for it. Without the quality and corresponding sales volumes, the expanding farmer network won't be realized, and climate smart acreage metrics will be decreased. The Fischer Family has spent the last 18 years working closely with customers to understand the key quality characteristics and these learnings will be key to make the Ultimate Climate-Smart Beef program successful.

Quality Characteristics of Beef

1. **Marbling** – fine lines of fat throughout the muscle give the beef a rich, buttery flavor. This is a key criterion for most chefs and buyers when making purchasing decisions. This fine marbling is in contrast to wider bands of fat around the outside which are not as desirable as it is waste and therefore a negative experience for most customers.
2. **Tenderness** – quality is often associated with tenderness. This is arguably best tested by eating a steak or biting into a hamburger made from top quality beef that is more tender. An analysis of breeds and tenderness was conducted, and Black Angus won with Red Angus following closely behind. Other breeds were much less tender including one of the most popular breeds, Simmental. Fischer Farms has experimented with Simmental and Gelbvieh crossed with Angus and found similar results as the meat was consistently not as tender. Additionally, about 1 out of 10 cattle would have good marbling but have a light pink color to the meat and be chewy and would have to be made into hamburger.
3. **Consistent Size** – Restaurants and other foodservice customers require cuts to be consistent in size. An example of why this consistency is important is that grilling a steak to the right temperature is difficult if a 16oz ribeye is 1" thick for one steak and 1.5"

thick for the next. Similarly, a 12 lb. brisket is an issue when the rest of the briskets are 18-20lbs. Consistent size cattle produce consistent size carcasses which produce consistent size cuts of meat.

4. **Flavor** – Beyond marbling, the beef needs to have a consistent beefy flavor. Beef that are pushed through on a high growth diet and harvested at 14-16 months of age often have a watery or low flavor profile. Beef that have the right genetics and are fed the correct way throughout their entire life without the use of growth hormones have a deep rosy red color and deep, rich, beefy flavor. Fischer Farms dry ages the beef for 2 weeks to enhance this strong beefy flavor.

The Fischer Family spent years reading research and analyzing their own farm operations to change the parameters that lead to consistent quality.

1. **Genetics** – the cattle must start off with the proper genetics to produce the quality characteristics of marbling, ribeye area, frame size, and tenderness. Additionally, the cattle must have other characteristics to work for the FFNF program; docility, frame size consistency, maternal milk, fertility, polled, high growth and efficient feed conversion. Many of these characteristics can be improved through crossbreeding. Fischer Farms has tried almost all breeds to cross with the high performing Angus. The only cross breed that has consistently worked to date is Shorthorn cattle. Specifically, a subset of Shorthorn that Waukaru Shorthorn in Rensselaer, Indiana have identified through ultrasound and DNA testing to maintain the high marbling of the angus while improving feed efficiency and growth.
2. **Feed Program** – Cattle in the conventional feeding program are commonly put on low-quality forage diets after weaning at 600 pounds until they slowly reach about 850 pounds. During this time the cattle gain only 1-1.25 lbs. per day. The cattle are growing in size but appear skinny. Cattle at conventional beef auctions receive a premium for not appearing “fleshy” so that the feedlots can put compensatory gain on them. However, in starving the cattle during this time period, the cattle use up the fat cells in their muscles to feed their growth. Then, when corn and other grains are fed at approximately 80% of their diet during the finishing phase the fat cells in the meat are gone and the fat presents as large chunks on the exterior of the muscles.
   Fischer Farms’ own experience and university research indicates that growing cattle should never gain less than 1.75 lbs. per day. Fischer Farms uses a combination of high-quality forages (ryegrass or summer annuals) and silage based total mixed ration (TMR) to ensure the faster growth. At 1,000 pounds the cattle are transitioned to a 15-20% grain diet which increases their gains to 2.25-2.5 lbs. per day. The resulting meat has great marbling without the undesirable large chunks of fat in the meat. This feed program also produces the desired beefy flavor and tenderness.

3. **Husbandry & Care** – Fischer Farms believes a key part of their success in consistent quality is in the finishing facilities and quality of life the cattle enjoy, especially for the last 3-4 months. The cattle are finished under roof in well-ventilated barns without sides for open airflow. The cattle are bedded in sawdust or straw and enjoy space that is 2-3 times the recommended space for finishing cattle. The cattle always have a fresh complete feed ration available and spend the majority of their time relaxing in the dry bedding. When it is time for harvest, the cattle are calmly sorted to individually select the cattle that are truly finished. The cattle are then walked onto a trailer and hauled 3 miles to the butchering facility. The cattle stay on feed until 4-16 hours prior to slaughter. Michigan State did a study showing "dark cutters" (poor quality beef) are primarily caused when cattle were held without feed for 24 hours or more, resulting in a drop in blood sugar. Fischer Farms eliminates the opportunity for cattle's blood sugar to drop by working closely with the Sander Processing team to ensure a quick harvest.

Regenerative Ag & Climate-Smart Practices

The Fischer Farms Ultimate Beef Strategy builds on a foundation of years of studying NRCS and university research and working through the details of making these practices work for their soil, geography, and climate. Key regenerative agricultural practices implemented at Fischer Farms include no-till, cover crops, and rotational grazing. Additional innovative techniques in biology, summer annual grazing techniques, and crop diversity/selection are currently being trialed with the goal of reducing or eliminating chemical inputs. Dave Fischer spends hours analyzing university research and listening to industry leading podcasts to learn from others before experimenting with trials at Fischer Farms. This project will now let Fischer Farms build on these practices and focus on those that are Climate-Smart and spread these practices to a large farmer network. The Fischer Farms Ultimate Beef label will also translate NRCS standard climate-smart practices into marketable terms for the buyers and consumers of meat.

Fischer Farms Ultimate Beef is not a line of climate-smart meat products designed to capture higher prices; it is a whole-business approach from a farm family deeply committed to land stewardship and regenerative agriculture. The Fischer Farms Ultimate Beef label will ensure buyers that their beef is:

Carbon Negative – From farm to plate, FFNF will demonstrate how beef can be carbon negative. Through existing innovative farm practices and the addition of new practices, Fischer Farms' network farms will continue to improve carbon sequestering rates and reduction of GHG emissions. Partnerships with leading researchers and industry experts will further quantify the carbon impact through measurement of critical components and utilization of peer-reviewed research to model the complete Life Cycle Analysis. Ultimately reducing GHG emissions throughout the value chain, while significantly increasing soil carbon content on the farm, will create a beef product with a net-negative carbon hoofprint.

Pasture Raised – Continual experimentation with forage species adapted to the regional climate, Fischer Farms' network farms are committed to a no-till, high-quality, carbon-capturing, annual pasture mix/rotation that upholds the medium growth rates and marbling qualities of their current products.
All Natural –For cleaner, healthier meat, Fischer Farms' network farms practice humane raising processes without the use of growth hormones or routine antibiotics and minimally processes its meat without fillers, solutions, MSG, nitrates, etc. Working with soil scientists and agronomists on composts, soil biota, humic acids and other natural amendments, FFNF strives to end the use of chemical fertilizers, pesticides, and herbicides while upholding quality standards.
Superior Quality – Through selective genetics, careful breeding, and growth rate standards, network farms consistently supply the finely marbled steaks and premium meats that set the standard for high quality —a quality critical to market expansion for climate-smart beef. With no quality sacrifice in exchange for responsible purchasing decisions, a top-quality, climate-smart beef product will more easily convert interested buyers.

Committed to Farm and Food Justice – With an existing network of more than 100 diversified, small, veteran, beginning, BIPOC and other underserved producers committed to the brand, Fischer Farms Ultimate Beef ensures fair pay and equitable representation for farmers and workers in the value chain.

Research and Implement Climate-Smart Practices

The Fischer Family has always viewed their farm as a research and development facility. Studies of the soil microbiome present new research opportunities. Over the last year, Fischer Farms has examined research by Dr. David Johnson with the University of New Mexico, and Dr. Elaine Ingham with Soil Food Web, Inc. Project PI Dave Fischer has enrolled in Ingham's 62 class course to better understand the role of the microbiome in sequestering carbon, thus eliminating the need for commercial fertilizers, pesticides, and fungicides. Having invested over $10,000 in biological supplements in 2022, FFNF believes the biology of the soil is the next frontier in creating a truly green agricultural revolution. In developing the soil microbiome, Fischer Farms network farms will be well positioned to reach the project's end goal of producing the best quality beef without chemicals while also sequestering a tremendous amount of carbon.

Fischer Farms will also pursue new research in intercropping, possibly corn + cow peas for silage, corn + clover, forage sorghum + legumes, etc. Dave Fischer carefully studies the findings of regenerative Ag leaders such as Rick Clark, Gabe Brown, John Kempf, Nicole Masters, Kris Nichols, Ray Archuletta, and others to learn from their findings to implement and adapt working solutions. To fully capitalize on this opportunity, proposed project activities include the hiring of an agronomist and leveraging a support team of university researchers. Network farms

will conduct ongoing experiments and measurements of plant growth and soil microbiome after biological soil amendments are made. Fischer Farms network will continue to monitor progress related to these practices and their corresponding impact on the overall goal of producing innovative, climate-smart meat. Fischer Farms will continue to monitor university and USDA research in these areas and incorporate results as practical to reduce chemical inputs and build soil health.

Program Overview

I. Climate-Smart Production

All FFNF beef is processed and distributed less than three miles from the "home farm." The "home farm" consists of 750 acres with 350+ acres in ryegrass-corn silage/sorghum sudan/forage sorghum/legume rotation, 110 acres in rotational grazing and permanent pasture management, 15 acres in filtering ponds and wetlands, and 230 acres in woodland. This home farm is a separate LLP that now acts as a network farm for Fischer Farms Natural Foods. Fischer Farms, LLP also rents 215 acres of rotationally grazed permanent pasture; network farmers rotationally graze an additional 500+ acres. Fischer Farms, LLP will continue to work with FFNF to develop experiments with NRCS practices, research additional techniques, and be a model for certain practices. Fischer Farms, LLP has spent years fine-tuning the practice of planting cover crops for grazing and stored feed. This expertise will be shared to other network farms. Other network farms will become a model for the practices and skills that they have mastered.

FFNF would like to expand rotational grazing practices to all network farmers. Climate-smart production practices have regenerated soils, including a 50% increase in soil organic matter (2.4-3.6% OM), 1" per year increase in topsoil, and increase of Cation Exchange Capacity (CEC) from 10.2 to 14.7 over 9 years. The Fischer Farms Ultimate Beef Strategy proposes to extend these benefits by incentivizing Climate-Smart practices on a large network of farms directly, and many more indirectly, through field days, on-farm tours, and other educational/outreach activities.

Building a Community of Climate-Smart Farmers and Agricultural Experts

FFNF will build a networked community of farmers and agricultural experts working together to understand how to build soil health and raise Climate-Smart beef and pork. Some farmers have extensive experience in rotational grazing, others in utilizing biologicals, and others in cover crops. FFNF will combine the farmers' experience with agronomists, soil scientists, and cattle experts to bring together the knowledge needed to implement the Climate-Smart practices adapted to our climate and conditions. FFNF will organize frequent educational meetings and

field days in both Kentucky and Indiana. These educational sessions will be led by farmers, Network Builders, agronomists or invited experts. Farmers seem to learn best from other farmers who have already worked through the issues in implementing the practices. Periodically, a restaurant or institution customer will be invited to speak to these network farmers to motivate farmers and let the customers meet the farmers behind the meat. An emphasis will be made to have experienced farmers lead these sessions and become mentors to other network farmers.

Network Builders

FFNF will hire two key personnel to lead the building of this network of Climate-Smart farmers. Many titles were discussed for this role, including herdsperson, soil health advocate, management grazing specialist, and community mentor. But the best encompassing title is Network Builder. The primary goal of this person is to build a network of Climate-Smart farmers. Their role will consist of educator, mentor, consultant, and facilitator. They will provide expertise in the Climate-Smart practices as well as cattle health, genetics, nutrition, agronomy, soil health, and ag-economics. They will work closely with Technical Service Providers (TSPs) and our area NRCS representatives to implement Climate-Smart practices and appropriate Nutrient & Pest Management Plans. Experts in each area will be available to train and work with the Network Builders. The Network Builders will work beside the farmers to build trust and detailed expertise in each component. Like a consultant, they will take expertise learned while implementing Climate-Smart practices at one farm to many others. This is similar to the role the PI, Dave Fischer, has previously performed with the current group of network farmers. Dave developed these mentoring and consulting skills while working 15 years as a supply chain consultant before returning to the family farm 20 years ago. He will hire and then work beside the Network Builders to mentor their development. Preliminary discussions have already begun with two individuals who have the knowledge, respect, and skillsets to be excellent in these roles. A well-respected cattle buyer and farmer advocate in Elkton, KY, has agreed to serve as the Network Builder for the Kentucky region. Additionally, preliminary discussions with a well-respected cattle expert in Indiana are promising for him to be the Network Builder for Southern Indiana.

Community Test Plots

To help the community learn and try new scenarios, Fischer Farms will provide a two-acre field that is visible from a main highway with easily accessible parking to create a test plot area. The field has sufficient space for approximately 40 individual plots that are 16’ wide. These plots can demonstrate cropping trials such as a legume cover crop that is terminated with liquid nitrogen fertilizer. A community member performed this practice 30 years ago with great success and will lead the effort on planting and demonstrating. Other plots can simultaneously show different cover crop mixes and crop rotations. Additionally, other plots could have perennial

grass to harvest at different frequencies and heights to demonstrate the impact of rotational grazing. The PI & agronomist will work with local NRCS and Purdue extension agents to set-up field days but also invite farmers to stop by anytime to evaluate the plots throughout the seasons. This hands-on self-lead experience will allow farmers to learn at their own pace and when they have time. Other farmers will bring ideas to the group of what they would like to see different in plots and be willing to take the lead on some trials.

Building a Community of Climate-Smart Professionals

FFNF will strive to build a robust community that is working towards the common goal of producing and purchasing beef and pork utilizing the most Climate-Smart practices possible. A component of the marketing plan is to have a Carbon Counter on the Fischer Farms website that continuously tallies the pounds of carbon that has been sequestered through the network. This goal should be ever present in this entire community's mind. An annual dinner meeting with all stakeholders invited may be a beneficial opportunity to celebrate progress. This community will require many different skills and roles, some key people include:

1. Farmers
2. Meat Processing Professionals
3. Marketing Professionals
4. Order Fulfillment Professionals
5. Distribution Professionals
6. Sales Professionals
7. Soil Scientists
8. NRCS Technical Service Providers
9. Agronomists
10. Carbon Sequestration Experts
11. Cattle experts
12. Biologists
13. University Dining and Sustainability Professionals
14. Hospital Nutrition & Dining Professionals
15. Retail store and meat counter managers
16. Restaurant Managers
17. Chefs
18. Eco-Biologists
19. Bankers
20. Business and Accounting Professionals
21. IT Specialists

Developing this community may seem overwhelming and likely would be if the project was starting from scratch, but FFNF has 18 years of experience working with individuals from each

of these 20+ categories. Leveraging the existing network and growing it into new geographies and institutions will be critical for the success of the Ultimate Beef Project.

A. Implement Climate-Smart Production Practices

The Fischer Farms Ultimate Beef Project will implement NRCS standard Climate-Smart practices across the wide network of farmers by education and incentives. These practices have been tested and adapted for our climate, soil type, and goals of raising top-quality beef. These incentives will not result in a contractual commitment for a producer to sell his calves to FFNF or a farmer finishing the cattle for FFNF, but FFNF will pay a premium for these cattle. FFNF requests a first-right-of-refusal to purchase the cattle. This should not be an issue as the farmer will work with the Network Builder & PI to ensure their cattle meet FFNF's protocols in genetics, natural feeding, husbandry, etc. prior to receiving the incentive. To achieve the processing and marketing goals of this project, farmer incentives need to be limited to the network farmers who intend to sell their cattle to FFNF or an FFNF network farmer. The farmer receiving the incentives will receive premiums for his cattle above what is possible through other markets. FFNF reserves the right to discontinue working with farmers who do not follow protocols after receiving incentives. For example, a farmer who receives incentives for rotational grazing and then injects his calves with growth hormones will disqualify them from being marketed under the Fischer Farms Climate-Smart brand. FFNF has developed selection criteria to allocate incentives if demand for farmer incentives outpaces sales volumes.

i. Annual Ryegrass Cover Crops

The project team will continue to evaluate cover crop mixes and plan to run trials including cereal rye and barley in 2023. However, annual ryegrass has differentiated itself by its massive root system. In *Building Soils for Better Crops*, Magdoff and Van Es estimate winter cereal cover crops to produce only half the root mass as annual ryegrass. More scientists are pointing to root mass as the critical determinant in building soil health, organic matter and capturing carbon.

Fischer Farms is convinced a key part to building soil health is having a fast-growing plant thriving in all four seasons. Corn and Sorghum species grow incredibly well during the hot months. Corn does most of its growth in a short 60-day window and likes temperatures above 85 degrees. Annual ryegrass grows well between 45-85 degrees. During these high growth periods, the plants are in overdrive and through the "Liquid pathway" is depositing sugars into the soils via exudates.

Fischer Farms has taught neighbors how to successfully use annual ryegrass in their cover crop mixes. Field management tips are specific to our region and climate. Examples include grazing fields tightly before polar vortexes in January, waiting to plant in October if grazing is not an option, and mixing in 20% wheat to hold the ryegrass up in the spring when its fast growth makes the grass want to fall over as it gets tall. By keeping it upright while the fields are too wet to harvest, the ryegrass can continue growing with more sun exposure and photosynthesis.

A neighbor who tried annual ryegrass was frustrated after he tilled the soil in the spring and was left with large root wads which required 2-3 more passes with a disc before planting. After further discussions, the neighbor learned the value of no-till planting corn instead of his usual discing after silage harvest. Now, after planting annual ryegrass on his 1,000 acres for 4 years, he and his agronomist are amazed at how the soil health and tilth have improved.

Other cover crop mixes will continue to be tested with special interest in a legume-heavy crop prior to corn. A mix of clover varieties and hairy vetch is planned for the corn grain harvest for pork production and to increase the energy for the finishing of cattle.

Fischer Farms has also developed practices to utilize the annual ryegrass for grazing calves prior to and after weaning. The calves creep graze under a fence wire away from their mothers onto the ryegrass. Then to wean the calves, gates are put up to keep the calves on the ryegrass. The calves do especially well during this low stress weaning.

Other key learnings have been to reduce soil compaction during silage harvest, which doesn't begin until the fields are dry and silage trucks with wide tires are used. Also, trucks are instructed to wait at the field entrance and trucks swapped out at this point regardless of how full they are.

One deterrent Fischer Farms often hears related to ryegrass is being able to terminate it prior to planting the main crop. Fischer Farms uses the practices of cutting for silage and then waiting for three days to spray a light application of glyphosate and Corvus without any issues. Fischer Farms will continue to experiment with practices to reduce or eliminate the spraying. Planting corn, forage sorghum, & sorghum sudan in 15" rows and strip spraying experiments are planned.

The Ultimate Beef Project will incentivize network farmers to plant an approved cover crop mix. This should cover approximately 75% of the seed cost depending upon the mix and current seed prices. More details on these incentive payments are in the budget narrative. Fischer Farms will host field days to show the benefits of ryegrass in improving soil health and producing forage. Other network farms will also host ryegrass field days and become mentors for new farmers.

ii. <u>Rotational Grazing</u>

FFNF encourages intensive grazing for cattle on pasture with some cattle being moved daily on small paddocks. Appropriately managed rotational grazing has been demonstrated to build organic matter and is an NRCS Climate-Smart practice. FFNF is hiring farmers with experience practicing rotational grazing as Network Builders. They will train other network farmers on how to rotationally graze. The Network Builders will connect with new network farmers, demonstrate rotational grazing practices, train them, and support them with best practices.

A couple farms in the current Fischer Farms network practice daily moves of less than an acre per paddock. This type of rigorous management builds the soil and with minimal or no chemical inputs. The cattle also become very docile and easy to manage.

To encourage the adoption of rotational grazing practices across all network farms, project funds will be used to provide incentives per head per day on a tiered payment system that results in a higher payment for more frequent moves. As rotational grazing practices require different equipment (e.g., step-in fence posts, timed-release gates, reels, poly wire), these supplies will be 50% cost shared up to a maximum amount per year to reduce barriers to adoption among farmers that are unable or unwilling to cover these costs.

iii. Summer Annual Grazing

FFNF is interested in implementing farming practices that result in the cattle being considered closer to entirely grass finished. Most of the grain has already been removed from the nutrition program. Grazing summer annuals can be a significant step in this direction. Summer annuals have a much higher energy content than perennial pastures. Gains of 1-1.25 lbs. per day are common from grazing grower calves on perennial pastures. Therefore, calves will pull fat cells from their meat during this time and the fat cells do not return during the finishing phase. FFNF insists on a high-quality forage-based diet during the calf's grower phase. This is why FFNF's meat retains the thin lines of marbling throughout the meat but does not have the wide bands of fat as conventional meat does. Fischer Farms began doing work 3 years ago with a SARE grant to analyze the best methods to graze summer annuals. Even though the SARE grant is completed, ongoing analysis of grazing techniques will be continued. FFNF will incentivize network farmers to plant summer annuals for grazing growing calves and cow/calf pairs.

iv. Feed Kelp to Reduce Methane Production

Studies show feeding Kelp to cattle results in an up to 80% reduction in methane production (Roque 2021). Fischer Farms, LLP currently adds kelp to cattle feed to reduce GHG. Project funds will be used incentivize network farmers to feed kelp to cattle during the cow/calf stage and after weaning. Kelp is readily available as an additive to mineral supplements and costs less than $0.01/day per cattle. A trial of 15,000 cattle was conducted using the popular Kelp brand, Tasco, to monitor GHG reductions. To more accurately model the total carbon impact of the FFNF system and share quantitative results with industry magazines and universities, project

activities include the kelp feeding analysis. Scientists at the National Institute of Standards and Technology (NIST) recently developed a new technology, Dual Comb Laser Technology, for measuring all greenhouse gases simultaneously over large areas (Giorgetta et al, 2021). The project's Geospherics team will work with NIST scientists to measure GHG emissions (see Project Narrative section 0.B Greenhouse Gas Emission). FFNF will encourage network farmers to feed kelp to cattle. Tasco is approved as a cattle supplement with beneficial effects on the health of the cattle rumen and even the meat's shelf-life and red coloring.

v. FFNF Finished Calf Climate-Smart Incentives

FFNF is attempting to simplify the administering of incentive payments while maintaining overall goal of more Climate-Smart practices being implemented. The incentives will also be designed to educate network farmers on the value of the climate smart practices so that practices are continued after grant funding is completed. To achieve these goals, FFNF has developed a premium system to pay network farmers for utilizing these practices during the growing and finishing phases of cattle production. Currently FFNF pays a premium for quality and naturally feeding cattle, this has motivated many area farmers to eliminate growth hormones, reduce antibiotic use to only therapeutic, and eliminate the use of ionophores such as Rumensin. These premiums have pushed network farmers into raising cattle with higher quality genetics. Now through the Fischer Farms Ultimate Beef Project, additional incentives will be paid to implement Climate-Smart Practices. These premiums will be paid to farmers when they sell their cattle to FFNF. The farmer always has the option to sell their cattle elsewhere but the premiums will motivate them to sell the cattle to FFNF and take advantage of these premiums available through this program and the premium from marketing the beef as Climate-Smart.

1. Kelp Fed
   This Climate Smart practice will incentivize network farmers to feed kelp to calves during growing and finishing phase. This is the simplest incentive and will allow farmers an easy onboarding step to implement climate practices. FFNF Network Builders will work with area mineral suppliers to make sure Tasco or similar products are readily available for network farmers.
2. Climate Smart Grower Forage Diet
   This Climate Smart practice will incentivize network farmers to graze their growing cattle on summer annuals or ryegrass (depending upon the season). Alternatively, to extend the season, these forages can be used as the main ingredient in a feed ration mix with distillers or other protein additives.
3. Climate Smart Finisher Diet
   This Climate Smart practice will incentivize network farmers to feed a Climate Smart diet during the finishing phase. Cattle in the conventional market are typically finished on a

diet of 80% or more grain with ionophores used to control the risk of acidosis. Feeding only the grain from the plant leaves the remaining plant material to decay on top of the ground which results in captured carbon quickly returning to the atmosphere. FFNF's practice of harvesting and feeding the entire corn plant as silage turns the plant material to manure that builds soil organic matter. Feeding corn silage also creates time in the Fall for cover crops to be planted and keeps a growing plant on the soil year-round because the crop is harvested early. Grain production typically allows corn to dry-down in the field from August to October. Minimal growth occurs during this time and the biology in the soil is starved of exudates. A corn silage crop can be harvested in August and immediately followed with a ryegrass-based cover crops that quickly develops into a thriving living field in 2-3 weeks and is in full production by October.

4. Nitrogen Smart Silage
   This Climate Smart practice will incentivize network farmers to feed corn silage or other silages that were raised using Climate Smart NRCS practices to minimize Nitrogen fertilizer usage and nitrous oxide GHG emissions. This will include Nitrogen sampling of soils prior to application, splitting Nitrogen applications to apply close to the time the plant needs the Nitrogen, and to not overload the soil based on its CEC rating. Other practices include growing a legume cover crop such as Balansa clover & hairy vetch prior to corn, adding humic acid to liquid Nitrogen, and similar practices that reduce Nitrogen usage and thus reduce nitrous oxide emissions.
5. Nitrogen Smart Grains
   This Climate Smart practice will incentivize network farmers to feed corn or other grains that were raised using Climate-Smart NRCS practices. This will include Nitrogen sampling of soils prior to application, splitting Nitrogen applications to apply close to the time the plant needs the Nitrogen, and to not overload the soil based on its CEC rating. Similar legume cover crops and humic acid additions will be incentivized.

II. Climate-Smart Processing

Climate smart meat requires an end-to-end commitment to efficiencies and environmentally sustainable practices. Production practices on network farms will capture and sequester carbon while reducing greenhouse gas emissions. The next step in the value chain is processing. Processing costs are a significant component of the end-cost of meat. Fischer Farms, like many small to mid-size farm operations, suffer from higher processing costs per pound relative to the mega cattle packers who process 6,000 beef animals per day. These higher costs do translate into better working conditions for workers with higher pay, contributing to an overall rural economy in a more positive way, but are problematic for scaling up. The business-to-business relationship between Fischer Farms Natural Foods and 3rd party processors (e.g., Sander Processing) has been and will continue to be a key factor in the growth of Fischer Farms.

FFNF currently has strict criteria for quality, genetics, and natural raising practices (E.g., no growth hormones, routine antibiotics, etc.). Sustainability practices are preferred but not required. During the project period, FFNF will transition all beef and pork to climate-smart production practices and therefore be able to market all meat as climate smart to buyers.

Fischer Farms Natural Foods has an existing partnership with Sander Processing who currently processes meat for the Fischer Farms brand. The proposed growth will require further investment in building expansion, as well as equipment at the processing and fulfillment center. The cost for these expenses will not be qualified as part of the project budget. In addition to the capacity growth, the processing step will also maintain the overall climate smart commitment by introducing new climate smart practices at this critical stage of the meat value chain such as solar panels, efficient equipment, efficient processes, recycling.

This savings and efficiency will not only enable a sustainable business growth model, it will allow Fischer Farms Ultimate Beef to compete with other beef products that do not engage in the climate-smart commitment, thus making the choice for the environment easy for chefs, institutions, and consumers.

A. Increase processing capacity to support growth

The Fischer Farms Ultimate Beef Strategy employs a 'Further Processing Facility' model where FFNF will be responsible for many of the final value-added meat products and additional efficiencies resulting from the increase in processing capacity.

The current state of the processing step consists of a 3rd party processor (Sander Processing) conducting the steps from slaughter to packaged product. The expected future state is a 3rd party processor (e.g., Sander Processing) will conduct the slaughter and initial breakdown step of butchering. The final processing and packaging steps will be conducted by the FFNF team. This will allow the 3rd party processor to achieve scale efficiencies with their responsibilities and allow FFNF to invest in higher efficiency equipment and new infrastructure that will ultimately reduce the cost per pound at scale. There will be a period of time before this scale is reached in which the lower throughput will not allow these cost savings to be realized and therefore attributed to the cost of the meat. Cost competitiveness in the market will be critical to increasing the demand for on-farm production of meat that was raised using climate smart practices.

To bridge the gap between the current smaller scale of operations to mid-size, efficient processing, funds are requested to offset some of the processing costs paid to a 3rd party processor (e.g., Sander Processing) during the first four years of the project period.

Fischer Farms Natural Foods will conduct a 3rd party processor selection to determine the partner for the grant period. Selection criteria will include price, logistics, flexibility, scope of services, packaging, scalability, and perceived commitment to long-term partnership.

Project funds will be used to offset 3rd party processing costs for climate-smart meat. This will result in sustainable processing costs at the conclusion of the project period while also encouraging sales growth through competitive market pricing during the "ramp up" period. Fischer Farms Natural Foods will contribute a 25% match in Year 1 and Year 2 before increasing in Years 3 and Year 4. As processing steps are transitioned from the 3rd party processor to FFNF, third party processing costs per head will decrease proportionally. During the 5th year of the project, FFNF will contribute 100% of 3rd party processing costs to exhibit sustainability of the program after conclusion of the project period.

B. Decrease processing costs through installation of new equipment

FFNF will install new, higher efficiency equipment that will not be eligible for project funds but will enable the meat to be produced at a lower cost per pound with scale.

Project funds will be utilized to hire FFNF processing personnel and a processing manager during the transition period until scale has been reached and efficiencies are realized as cost per pound savings.

To power new and existing processing facilities, FFNF will fund the installation of a solar panel system on the existing order fulfillment and processing facility. Currently electric bills are over $3,500 per month during summer months. Solar panels will reduce these bills and coal powered electric usage by approximately 80%. The solar panels will further contribute to the farm-to-table climate smart process.

Further Processing Equipment

FFNF built a new order fulfillment building in 2020-21 and opened for production in May 2021. This building is attached via a tunnel to Sander Processing new butcher and processing facility. This facility can handle the current capacity and has the ability to butcher and breakdown more beef and pork, but the further processing equipment is small batch-based and requires excessive labor. For FFNF to expand the market share of climate-smart beef and be competitively priced with conventional meats, a new, more efficient further processing facility and equipment are required. A third-party processor (e.g., Sander Processing) will utilize their facility to butcher and break down the beef and pork into combos with like products. These combos will then be moved to the new FFNF further processing facility to be made into burgers, packaged ground beef, cut steaks, roasts and other products ready to ship.

This new Further Processing building and equipment will greatly reduce FFNF's cost per pound and make the climate-smart products more competitively priced with conventional meat

making it an easier decision for restaurants and institutions to switch to Fischer Farms' climate-smart products. Increasing the sales of climate-smart products will allow FFNF to expand to include more farmers to implement our climate-smart practices.

Fischer Farms has carefully selected the equipment in partnership with industry experts to ensure that the equipment is right sized for the expected volumes and expected uses. This continued partnership with industry experts will ensure smooth transition to the new workflow and equipment operation. The expected equipment falls into the following categories which will each bring efficiencies with scale to the climate smart processing step in the meat value chain.

High Volume Line

This line will eliminate eight manual steps in producing patties and greatly decrease set-up times and the lead time required from order received to delivery. At top speed, this line can produce four patties per second. The changeover time between 4 oz and 8 oz patties should be less than five minutes. The input to this line will be 400-pound buggies of trim, it will grind the trim twice and mix the product. The ground meat is then fed through a stuffer that creates accurate portion sized blocks of meat. These blocks are gently flattened into the correct thickness between two conveyors. This patty is different from the typical "hockey puck" patty that has been standard for many years. More restaurants are requesting these soft, butcher-style patties. The patties then feed onto a conveyor line and the interleaver slides a piece of paper between each patty. The patties are stacked and automatically placed into the vacuum packaging machine. The sealed packages come out of the machine and are arranged into a single file line. Each package is weighed and labelled. Then an employee puts the packages into boxes with a label on the outside of each box. These labels will have both product and customer information which makes the boxes ready to put on a skid for shipment to the customer. This line will take an eight manual step process down to three steps that are more efficient and produce much more product per hour of labor. This will greatly reduce labor costs and improve overall efficiencies, for some products this will be a 10X improvement. The packaging and labeling portion of this line is designed to be easily fed by employees with products such as cut steaks, roasts, etc. to utilize the efficiency of the scale, labeling, and boxing for other products. These are similar to the lines that Fischer Farms' primary competitors use to produce burger patties at lower costs. These machines will put the project's climate-smart products at more of a competitive price to the conventional meat market.

Batch Equipment

In addition to the high-speed line, FFNF needs smaller batch type equipment to perform the further processing. This includes a slicer to cut bacon and other similar cuts. This equipment also includes large vacuum packaging machines to handle bigger cuts, such as inside rounds and

whole briskets that are too large for the high-speed line. Also included in this section is a sausage stuffer and separator to create both pork and beef links.

High Speed Cutting Equipment

This includes an Image cutting machine (I-Cut 130) that visually analyzes a whole muscle such as a strip loin, ribeye, or tenderloin and determine the optimal cutting method to get the most steaks from each piece. Currently FFNF must pay to have these cuts made by hand.

This also includes a slicer, Treif Felix, that will cut products such as roasts into beef strips that are used in fajitas and stir fry meals at Indiana University and potentially many other restaurants and institutions. These specialty products help FFNF to utilize a higher percentage of the carcass into non-ground beef products. High margin products allow the climate-smart products to compete with the conventional beef supply chain more effectively. More restaurants and institutions want products that are prepared and easy to cook and serve. They want to move away from the low quality frozen prepared dishes but struggle to find skilled labor to efficiently turn roasts into products such as stir-fry strips. Currently FFNF must pay a 3rd party processor, Sander Processing, to cut these strips by hand.

The Platino flattener will allow FFNF to sell cutlets or schnitzels that are ready prepared with less labor than required today. Customers such as Indiana University buy thousands of these type cuts each week for sandwiches and schnitzel type products. FFNF cannot produce most of their requests because of the lack of this equipment. This will be a key product to open the doors at other universities to the project's climate-smart meats.

Cooked Meats Facility

FFNF currently pays third party processor, Sander Processing, to haul products that need to be cooked to a facility 10 miles away. This facility does not meet FFNF's current requirements. This equipment will be installed in a separate portion of the new Further Processing facility and all cooked meats must be kept in this separate area until packaged to eliminate the risk of cross contamination with uncooked products. The uncooked meat will be prepared with an injector and tumbler to brine the meat prior to cooking.

Material Handling Equipment

This category of equipment consists mostly of combo bins, scales, and a combo dumper that will transfer the material into buggies to feed other pieces of equipment. The combos will be filled in the breakdown facility and then moved with electric pallet jacks to FFNF's further processing areas holding cooler to be ready for processing.

III. Climate-Smart Market Expansion

Efficient distribution is one of the most challenging but essential components of the FFNF value chain. Buyers have become accustomed to incredibly short lead times and frequent deliveries offered by broadline distributors. FFNF has made the evolution from direct deliveries to a broad distributor network that enables faster response time, frequent deliveries, and convenient ordering options. FFNF's six distribution partners each possess either service or geographic characteristics that make them a valuable part of the FFNF system. Buyers can order either directly from FFNF or through their preferred distributor. Stocked products at distributor warehouses allow for next day delivery. Orders placed directly with FFNF are delivered with a two-day lead time. This flexible, quick order and delivery schedule offers convenience for buyers, who often perceive that purchasing locally grown food is more logistically challenging.

A. Sales: Establish sales team in alignment with key geographies and customer sectors

The majority (98%) of the current FFNF customer base is foodservice and retail wholesale accounts. While expansion of the direct-to-consumer market is planned, most of the revenue will continue to be driven by wholesale accounts. The foodservice industry is a competitive, high-touch sales process driven by trusted relationships between sales representatives and chefs/buyers. These relationships take time to develop and time to maintain. For the last 18 years, FFNF has excelled at this model of direct sales to restaurants and institutions. Dave Fischer, and now his son, Joseph, meet directly with chefs/buyers and host frequent visits to the farm to tell the family's story and highlight the regenerative, sustainable agricultural message.

For the Fischer Farms Ultimate Beef Strategy, additional outside sales reps will be needed in strategic geographic locations and to focus on specific buyers. Grant funds will be used to support the hiring and training of three new sales representatives in markets of Indiana, Cincinnati, Louisville, and to specifically work with university and institutional buyers. Each sales representative will ideally bring connections in their designated segment (e.g., university foodservice contacts, restaurant group relationships) to more quickly onboard new customers. Fischer Farms Natural Foods' flexible ordering process and range of distributor relationships will arm sales representatives with opportunities to pursue accounts large and small with minimal restrictions. Existing distributor relationships enable sales representatives to begin selling product immediately without starting up new logistical relationships.

Project funds will be used to support the sales team with advertising and marketing materials to accelerate brand awareness and help educate consumers/buyers about the impacts of climate smart meat. Project funds will also be used to provide meat samples to prospective customers as that is an industry standard part of the sales process to persuade buyers. Buyers require samples to see that the meat is packaged appropriately for their usage, is the high quality that FFNF promotes, and is cut to the specifications that the customer is seeking.

FFNF expects to increase sales of climate smart meat through the duration of the project. This sale of FFNF product is not considered program income as federal funds will not be used to directly purchase product that is ultimately sold for profit. Additionally, FFNF will not expense network farmers for the use of services provided by employees supported by federal funds. If unforeseen program income is realized during the project period, it will be considered additive to further support the goals of the project.

B. Marketing: Develop climate-smart brand and consumer awareness campaign

FFNF is strategically positioned in the market as: Premium, Natural, Local, Sustainable. This "bundle of benefits" takes on different levels of importance for different customer groups. Some customers are very passionate about the top-quality meat that FFNF consistently provides (e.g., high-end steakhouses). Others are especially proud to serve Fischer Farms meat because of the sustainability component of the value offering (e.g., institutions with sustainability pledges). The suite of benefits allows FFNF to cater to a wide customer base without customers having to sacrifice any value important to them. Customers are encouraged to proudly display the "Fischer Farms" name on their menus and logos on their shelves so that consumers can feel confident knowing where their food comes from. This shared message has allowed FFNF to develop strong brand recognition and a solid reputation for quality in current markets over the last 15+ years.

Opportunity exists to build stronger climate-smart brand recognition. Customers are familiar and trusting of the established Fischer Farms brand and commitment to regenerative agriculture. As consumers become increasingly aware of the impacts of climate change, FFNF is well positioned to leverage its existing market position to an even stronger presence in the national movement to combat climate change via carbon sequestration and reduced GHG emissions. FFNF recognizes that the USDA recently approved a Processor Verified Process (PVP) for Low Carbon Beef for Dr. Colin Beal. FFNF is delighted to see that other beef producers are working with a rigorous scientific approach to certify farms and the beef cattle they produce as Low Carbon. If awarded, the proposed project will contribute to this growing body of knowledge, both in the peer-reviewed literature, and in the farmer-to-farmer and USDA-generated pathways of sharing. Additionally, Fischer Farms Ultimate Beef will provide the critical opportunity for a network of small and underserved farmers who would otherwise be challenged to verify and enter climate-smart market channels already established.

FFNF will be able to quantify each buyer's climate impact. For example, a restaurant will be able to market to their customers the positive impact they are having on climate change by buying Fischer Farms Ultimate Beef with numerical calculations on carbon captured and net climate impacts. Project activities (and supporting funds) will support the hiring of a marketing director who will develop the climate-smart brand roadmap, create climate-smart marketing materials, and tell the story of the Fischer Farms impact. The marketing director and marketing intern will

also work directly with researchers to ensure the promotion, quantification, and story of Fischer Farms Ultimate Beef is grounded in science, and impacts not just our environment, but the social justice elements of who gets to participate in producing and consuming climate-smart beef.

Sales and Marketing Activities

The sales and marketing activities are grouped into six overlapping initiatives:

- Develop Climate Smart Marketing Strategy: this initiative is the first to begin and spans the duration of the project. The goal of this initiative is to develop and maintain a consistent climate smart marketing strategy across markets and stakeholders. Key personnel include a marketing manager and marketing interns (on annual summer basis). Ongoing development and refresh of marketing strategies and marketing materials both digital and physical will be instrumental to the success of other initiatives. This initiative will span from 5/1/2023 - 3/31/2028.
- Conduct Indiana Climate Smart Marketing and Sales Campaign: FFNF has established some brand recognition in the Indiana market which makes it the ideal market to approach first. While there is existing brand recognition, there is a significant opportunity to expand the awareness of "climate-smart" and further cement the association of "Fischer Farms" with the climate impact it represents. A dedicated sales representative will focus on bringing this message to new and existing customers in coordination with materials and messaging developed by the director of marketing. This initiative will span from 5/1/2023 - 3/31/2028.
- Conduct Direct-to-Consumer Climate Smart Marketing and Sales Campaign: FFNF has built a robust platform to scale the direct-to-consumer sales channel. A marketing campaign can easily be supported and bring climate-smart directly to households across 75% of the United States. Initiative activities will be executed by a coordinated effort with the Marketing Manager, Marketing Intern, and Market Expansion Director. This initiative will span from 7/1/2023 - 3/31/2028.
- Conduct Institution Climate Smart Marketing and Sales Campaign: Institutions will be a priority for the project due to their opportunity as both a purchaser of climate smart meat but also as a promoter of their commitment to responsible purchasing to their diners. For example, corporations and universities that choose to purchase climate smart meat will be very open to publicly promoting these purchasing decisions to their shareholders. As a result, FFNF will hire a dedicated representative to find new institutional partners and connect them with the Marketing Manager to make the promotion of these practices easier via signage, content, online promotions, etc. This initiative will span from 4/1/2024 - 3/31/2028.

- Conduct Retail Climate Smart Marketing and Sales Campaign: Retail outlets are an untapped opportunity that has significant opportunity to expand both the availability and awareness of climate smart meat to consumers. Fischer Farms has previously been hindered by packaging limitations that restricted the opportunities to pursue these accounts. New equipment that will be installed in the production component of this project will open doors to these opportunities. Fischer Farms possesses existing relationships with distributors with connections to these retailers. The Market Expansion Director will conduct most of the initiative activities with collaboration from the marketing manager and intern. Marketing activities will develop in-store campaigns that bring messaging directly to shoppers and encourage retailers to promote climate-smart products. This initiative will span from 4/1/2023 - 3/31/2028.
- Conduct Louisville/Cincinnati Climate Smart Marketing and Sales Campaign: The Louisville and Cincinnati markets present great opportunity for FFNF market expansion. The two cities are only 100 miles apart and therefore will be covered by one sales representative. With three current distributor partners actively delivering to the area, both cities will have distributor overlap that provides flexibility to suit customer preferences. Fischer Farms has a limited customer base in each market without a marketing/sales push and has received positive feedback from both markets. This initiative will span from 1/1/2025 - 3/31/2028.

0. Program Management, Research & Dissemination

Program Management, Research, and Dissemination combines the overarching activities that span production, processing, and market expansion (Initiatives I, II, III). The growth of the FFNF business offers the unique opportunity to engage farmers and buyers in a research-based conversation about beef and climate change and to magnify impact with more acres, more farmers, more cattle, and more eaters. The Partnership for Climate Smart Commodities program is a rare opportunity for a farmer-led investigation into best practices for their production system for maximum industry impact. The proposed project team includes researchers, leaders in their respective fields and highly experienced in grant management—a testimony to the team's collegiality and their collective years of focused, intentional, and progressive work to raise the best meat with the lowest climate impacts.

A robust research plan will demonstrate the GHG benefits and carbon sequestration potential of the Ultimate Beef commodity. An additional key objective of the research plan is to demonstrate how the Ultimate Beef strategy will deliver benefits and new opportunities to rural communities in line with the Justice40 initiative. Rigorous sampling, first-of-a-kind monitoring, and innovative analysis will lead to a new science-based understanding of the potential to deliver beef to the market that is truly a climate-smart commodity.

The Ultimate Beef project will follow the guidelines as directed by the USDA Data Submission Guide. The required reporting will be done at the Project, Partner, Producer, and Field level as applicable.

A. Conduct program management tasks to ensure successful execution

Key personnel including the PI and research team will be responsible for the deliverables, data management, and reporting on grant outcomes. To ensure critical interdisciplinary project discussions, a Project Advisory Panel of researchers and practitioners will be recruited to share data collection plans and preliminary results. Field days, video products, and farm tours will engage farmers (new and existing) and technical assistance agencies in co-leading the dissemination of information.

B. Conduct robust research and dissemination tasks

Carbon Sequestration: Quantifying the impacts of farm management practices on soil C sequestration requires a rigorous sampling of soil organic C stocks across reference and treatment fields. To meet this objective, soil samples will be collected in proposal years 1 and 4. The initial sampling will document current soil C stocks and allow for comparisons among reference fields undergoing standard management practices to fields that have been managed using the new ryegrass rotation for over 5 years. These data will provide both a baseline of C stocks and allow for quantification of total C sequestered to date using the improved practices. The samples collected in year 4 will document any ongoing changes in C stocks associated with different management regimes.

The sample design and collection will follow GRACEnet protocols (Liebig et al., 2010; Davis et al., 2018). Sample locations will be determined based on detailed analysis of existing farm site soil data using 1) a standard random sampling pattern for broad coverage, and 2) a stratified random sampling where substantial spatial variability exists owing to topography, soil type, or soil properties. All site physiographic, spatial and management information will be documented and stored in a geodatabase linked with georeferenced sampling locations. Sampling an average of five locations per acre in the highly variable areas is expected to rigorously document baseline soil C stocks and C changes (Cerri et al., 2013). Samples will be collected at each location to a depth of 1.2 m at three depth intervals of 0-30 cm, 30-60 cm, 60-120 cm. It is particularly important to document deep soil C stocks given the expected impact of the deep-rooted ryegrass system on fragipan degradation and deep C inputs. Samples will be collected using a coring device and analyzed for bulk density, rock fragments, total C and N, organic C, and general agronomic characterization including texture, pH, and nutrient status (FAO, 2019). Approximately 15% of samples will also include inorganic carbon and fractionation analysis to separate particulate organic matter from mineral associated organic matter to better inform our understanding of carbon sequestration processes at participant farms. Results from the

rigorous sampling approach will lead to a minimum of ***two manuscript submissions to high-impact journals***: one submission in year 2 documenting the enhanced carbon sequestration that has occurred at Fischer Farms, and one submission in year 5 documenting the increase in carbon sequestration at Fischer Farms and two new partner farms that will adopt the Ultimate Beef production system.

Greenhouse Gas Emissions: Scientists at the National Institute of Standards and Technology recently developed a new technology for measuring all greenhouse gases simultaneously over large areas (Giorgetta et al, 2021). This novel technology is proposed to measure methane and other greenhouse gases at both the barn lots and pasture settings at FFNF network farms. This approach will provide the first-ever detailed measurements of beef cattle GHG emissions on pasture and allow for the quantification of the impacts of algae feed supplement on reducing methane emissions with the Ultimate Beef production system. Results of this unique monitoring experiment will be submitted as ***one or more manuscripts to high-impact journals in YR4*** of the project.

Life Cycle Assessment and Global Warming Potential: In 2019, the most comprehensive studies to date were published on the environmental footprints of US beef cattle production systems (Rotz et al., 2019) and the full value chain of the US beef industry (Asem-Hiablie et al., 2019). These studies provide rigorous benchmarks by which to assess the overall GHG benefits and carbon sequestration potential of the Ultimate Beef commodity. Rotz et al. (2019) provides a benchmark for GHG emissions of the conventional Midwest beef cattle production (cradle-to-gate) of 25.5 kg CO_2e/kg CW (carcass weight). Asem-Hiablie et al. (2019) provides a full value chain reference of 48.4 kg CO_2e/kg CB (CB stands for Consumer Benefit) which converts to 31.5 kg CO2e/kg CW. These studies both suggest that the on-farm production component accounts for over 80% of the total global warming potential (GWP) of the US beef system.

The research plan entails 1) relevant data collection and analysis of the Ultimate Beef system, 2) implementation of USDA's COMET-Farm and IFSM modeling tools, and 3) development of an ISO-compliant Life Cycle Assessment to calculate the GWP benefits of Ultimate Beef relative to the conventional US system. A significant factor to note is that neither of the benchmark studies used a recently proposed GWP* method published in 2018 (Allen et al., 2018) and 2019 (Cain et al., 2019) that is meant to provide a more accurate GWP accounting of short-lived climate pollutants like methane. Our innovative analysis will use both the conventional GWP method and the new GWP* method to achieve two key research objectives: 1) identifying general pathways to achieving carbon neutral/negative beef and initial assessment of the Ultimate Beef commodity value chain, and 2) demonstrate the benefits of Ultimate Beef in reducing GWP relative to conventional beef production based on newly acquired project data. These key research outcomes will be embodied in ***manuscript submissions to high-impact journals in YR2 and YR5***.

Environmental Justice and Equity: Fischer Farms Natural Foods has established innovative partnerships with those committed to equity and justice in our regional food system. For four years, FFNF has been involved in the development of the Indiana Value Chain Network (2018-2021), and now the Partners IN Food (2021-2024), both supported by USDA grants in the Local Agriculture Market Program (LAMP). These evolving networks prioritize equity and are working to ensure that new leadership from formerly marginalized groups is supported and elevated. This work is culminating in the formation of a new statewide organization, Partners IN Food and Farming (PIFF), that will represent a diverse farmer base, while gathering grassroots organizations and state agencies committed to systemic change for the Indiana food system. Throughout the Fischer Farms Ultimate Beef Strategy project period, these forming networks will have ongoing support and participation by a diversity of actors from the public, private, and nonprofit sectors. PIFF's key feature is the formation of a Buyer Network for Indiana, supported by the Indiana Department of Agriculture. The goal of the Buyer Network is to highlight and feature restaurants, universities, schools, hospitals and retirement villages who feature local food on their menus and to gather these groups together for peer-to-peer learning and sharing along with connection to value chain professionals and farmer suppliers. The goals are to increase the market pull on locally grown food for wholesale buyers in Indiana. PIFF also has created a new position for a statewide BIPOC value chain professional who will connect farmers and buyers and solve gaps in information and logistics. One of PIFF's key leaders, the Hoosier Young Farmers Coalition—entirely run and led by volunteer farmers—maintains a network of beginning and socially disadvantaged farmers that extends throughout Indiana, and to other Young Farmers Coalitions nationally. They are a very active group working to secure funding for farmers, establish a farmer mentorship program, and to work with Purdue Extension on training Educators on how to work with socially disadvantaged farmers. FFNF will continue to participate in these partnerships to expand the prevalence of local, equitable food systems.

Fischer Farms Natural Foods looks forward to actively participating in the "USDA Partnerships for Climate-Smart Commodities Learning Network" to share best practices with like-minded awardees in their efforts to promote climate-smart commodities.

Ineligible Project Expenses

Fischer Farms is excited about managing this project to implement and spread Climate-Smart practices to beef and pork farms throughout the region; expanding the processing facility to efficiently process the meat and develop a market that will pay a premium for Climate-Smart meats. In addition to FFNF's cash match for project related expenses, FFNF has already made a substantial investment and will make further large investments in project expenses that are excluded from the USDA guidelines and therefore not included in the project budget but are considered likely necessary for project execution. These figures are included to demonstrate

FFNF's commitment to the project and financial planning to incorporate ineligible expenses that are likely required for successful project completion.

FFNF Existing Investments

1. **$906,728 Order Fulfillment Center** This facility was completed in 2021. 5,500 sq ft refrigerated order fulfillment and cold storage facility built with connecting tunnel to Sander Processing in St. Anthony, IN. Sander Processing built a $3M+ slaughter and processing facility that was completed at the same time to process our animals which is 90% of their business. As the Climate-Smart beef & pork sales increase, the Sander Processing facility will only have the capacity to butcher and break-down the animals and send combo's of subprimals to the new further processing facility. If these facilities weren't available an additional $4 million in new buildings would be required to complete this project.

2. **Business Relationships** FFNF is investing the business relationships that were built over the last 20 years. The credibility and brand awareness of Fischer Farms, the existing relationships with 120 customers including Indiana University, Butler University, Rose-Hulman and the 6 distributors. The Ultimate Beef Project will be more successful with these businesses and their relationships as a starting point than if the project was starting from scratch.

FFNF Ineligible Project Investments

3. **$1,906,800 Further Processing Building** The additional meat sales due to this project will require a new refrigerated processing facility and FFNF has plans to start construction of this building in late 2023 or early 2024. This building will add over 10,000 sq ft of processing, cold storage, and office space.

4. **$2,668,982 Further Processing Equipment** Sales will exceed the current processing capacity of 3rd party processor, Sander Processing, by approximately year 3. FFNF has done extensive research on appropriate equipment that can streamline the processing and reduce the processing costs from the current low volume category to a mid-tier meat processor. FFNF will purchase this new highly efficient equipment to process the volumes and reduce the processing cost per pound. Current equipment estimates are close to $2.7M and will change based on product sales volumes and equipment price changes.

5. **$120,000 Refrigerated** Truck FFNF bought a late model refrigerated truck in 2021 to make deliveries to customers that cannot be well serviced by distributors, this includes Indiana University that receives deliveries three times per week. This truck will be used to deliver the

Climate-Smart products. This truck will probably need to be replaced by FFNF before the completion of the Ultimate Beef project at an expense of $120,000.

6. **$1,000,000 Accounts Receivables** The typical time from delivery until the customer pays is five weeks with universities, institutions, and distributors sometimes demanding even longer terms. FFNF estimates an additional $1M by the final years of the Ultimate Beef Project.

7. **$300,000 Inventory** Farmers expect to get paid for their livestock within days of selling. The beef is dry aged for up to 14 days and then spends days being processed and delivered to the customer before the customers payment terms even start. Additionally, seasonal products (e.g., short-ribs, steak cuts) are held in freezer inventory for months to wait for better pricing. FFNF expects inventory to increase by $300,000 because of the Ultimate Beef Project.

8. **$250,000 Incidentals** FFNF is projecting to spend at least $250,000 in unforecasted expenditures to make the Ultimate Beef Project successful. Examples include processing equipment cost overruns, computer programming, packaged software, and hardware to upgrade existing order fulfillment system and integrate it to new processing equipment, utilities, laptops and software for new employees and training for employees. FFNF needs to host frequent dinners for network farmers and the support community, hall rental, catered meals and guest speaker fees will be additional expenses FFNF will need to cover. With the new cap of $15 million the project line-items were simplified to reduce the administrative costs, but these costs will still be required.

FFNF and project partners will be required to make a substantial investment during the Ultimate Beef Project. These figures sum up to over $6,000,000 in total expenses.

Ineligible Project Investments

Further Processing Building	$1,906,800
Further Processing Equipment	$2,668,982
Refrigerated Truck	$120,000
Accounts Receivable Increase	$1,000,000
Inventory Increase	$300,000
Project Incidentals	$250,000
	$6,245,782

Additionally, Dave & Diana Fischer will be making substantial investments in cattle and equipment to support the growth of the farmer network. Fischer Farms owning the cattle and paying farmers a daily rate to graze them is essential for beginning farmers and those who cannot make the investment. Depending upon the mix of farmers that want to own their own

cattle and those who want to be paid a daily rate to graze, the new investment in cattle by Fischer Farms can quickly exceed $2M with 1,000 head of cows and feeder cattle and $500,000 in additional equipment such as livestock trailers, pickup trucks, farm trucks, ATVs, and silage equipment.

Fischer Farms Natural Foods is prepared to make these substantial investments to execute the Ultimate Beef Strategy project and to build a business focused on bringing Climate Smart Beef to the Indiana and Kentucky regions. The Ultimate Beef Project will create a standard for how beef can be raised while improving soil health, minimizing chemical inputs, and sequestering carbon. The project will ensure that climate-smart practices are integrated with each stage of the meat value chain: production, processing, and sales and marketing. Climate smart activities begin with production activities. Efficient climate smart processing is critical to both climate impact and cost competitiveness with non-climate smart competition. The market expansion component of the value chain will drive on-farm climate-smart production volumes and perform the important activity of educating the end-consumer.

Clarification of Questions from USDA letter dated December 22, 2022

To ensure our grant application has addressed all the questions from the USDA in the letter dated December 22, 2022, we have explicitly addressed these questions below.

Will all climate smart agriculture practices be covered by & follow NRCS practice standards?

All Climate Smart practices that are covered by NRCS practice standards will follow these standards. FFNF will work with the NRCS on uncovered practices such as feeding Kelp to cattle to ensure any regulations are followed.

What is your process for ensuring that implementation of the practices meet NRCS standards?

The FFNF Network Builders, agronomist and PI will all be trained on applicable NRCS standards. Then these employees will then train network farmers and monitor their conformance to the practice standards.

Are you proposing to implement any practices on land that is not currently used for agricultural production?

No

Will any practices involve ground disturbance below the plow zone, such as fencing? Conversion of cropland to rangeland?

No

Please describe any potential project activities that may involve concentrated animal feeding operations (CAFOs)?

The farmer who produces hogs for FFNF is a CAFO. FFNF and Indiana University have investigated to make sure this producer has not violated any regulations and will continue to monitor their compliance. Additional CAFO's may be selected to receive incentives from this project and will be monitored similarly to ensure regulations are followed.

Technical assistance is the responsibility of the grant recipient. Please clarify in your proposal who will be providing the technical assistance.

FFNF will assemble a team of experienced agricultural personnel to provide the technical assistance that will be led by the PI, Network Builders and Agronomist. Expertise from others in the extended community will be pulled in as needed.

If manure & other products such as sawdust will be spread on the land a nutrient management will be required. What is your plan to get a nutrient management plan?

This project no longer has the use of sawdust and spreading manure on the land as an incentivized practice. Each farmer will be required to adhere to state and federal regulations. FFNF's agronomist will be trained in creating a nutrient management planned and readily available to work with NRCS TSP's and applicable farms to develop nutrient management plans as required.

Are there any State or Federal approvals needed for the feed additives you propose to use such as Kelp?

No, Tasco is a readily available mineral supplement that has been fed to cattle with appropriate feed regulations followed for over 20 years. It was initially used to lower cattle body temperatures when grazing endophyte fescue and has been researched by university trials.

Milestones and Benchmarks

BENCHMARKS submitted 04 18 2023

Project benchmarks will be projected on an annual basis and tracked on a quarterly basis towards annual targets.

	Y1	Y2	Y3	Y4	Y5
Sales	$8.9M	$10.5M	$13.0M	$15.4M	$18.2M
CS Beef Harvested	1,674	1,970	2,428	2,873	3,396
CS Pork Harvested	2,151	5,210	6,524	7,444	8,545
Rot. Grazing Head Days	294,354	460,944	629,964	819,214	976,500
Kelp Head Days	500,000	1,000,000	1,300,000	1,500,000	1,800,000
Summer Annual Acres	375	500	625	750	875
ARG Acres Planted	1,500	2,000	2,500	3,000	3,500
Rotational Grazing Acres	1,000	1,500	2,500	3,250	4,000
Farmers attend education	50	100	125	150	200
Tons Carbon Sequestered/yr	1,500	2,500	3,500	5,000	6,000
No-till Crop Acres	500	1,000	1,200	1,500	2,000
Network Farmers	30	50	70	90	110
Small/Underserved	20	30	40	50	60
Number of Jobs Created/Maintained					
Production	3	3	3	3	3
Processing	3	7	8	9	10
Sales & Marketing	2	3	4	4	4
Marketing Reach	75K	125K	150K	200K	250K

QUARTERLY MILESTONES / DELIVERABLES

Climate-Smart Production Milestones

Y1Q1 Hire Network Builder - Indiana

Y1Q1 Hire Network Builder - Kentucky

Y1Q1 Hire Agronomist

Y1Q1 Initial Climate-Smart Education Dinner & Meeting

Y1Q1 Complete Initial Rotational Grazing Supplies sign-up & Allocation

Y1Q1 Complete Summer Annuals sign-up & Allocation

Y1Q1 Complete ARG Sign-up & Allocation

Y1Q2 CS Practice Field Day

Y1Q3 CS Practice Annual Ryegrass Field Day

Annual Production Milestones (Beginning 2024)

Q4 Annual Climate-Smart Dinner & Meeting of Network Farmers

Q4 Complete Rotational Grazing Supplies sign-up & Allocation

Q4 Complete Climate-Smart Summer Annuals sign-up & Allocation

Q1 Complete Climate-Smart Cover Crop Sign-up & Allocation

Q2 Climate-Smart Practice Field Day

Climate-Smart Processing Milestones

Y1Q1 Hire Processing Manager

Climate-Smart Sales & Marketing Milestones

Y1Q1

Hire Indiana Sales Representative

Y1Q2

Hire Marketing Manager
Climate Smart (CS) Marketing Strategic Plan
2023 Intern Performance Review
Completion of Indiana Sales Representative Onboarding
Indiana CS Sales and Marketing Plan
Direct-to-Consumer CS Sales and Marketing Plan

Y1Q3

Y1Q4

Indiana CS Sales and Marketing Plan - 2024 Refresh

Y2Q1

Climate Smart (CS) Marketing Strategic Plan - 2024 Refresh
Hire Institution Sales Representative
Retail CS Sales and Marketing Plan

Y2Q2

Completion of Institution Sales Representative Onboarding
Institution CS Sales and Marketing Plan
2024 Intern Performance Review
Direct-to-Consumer CS Sales and Marketing Plan - 2024 Refresh

Y2Q3

Y2Q4

Indiana CS Sales and Marketing Plan - 2025 Refresh
Hire Louisville/Cincinnati Sales Representative

Y3Q1

Completion of Louisville/Cincinnati Sales Representative Onboarding
Louisville/Cincinnati CS Sales and Marketing Plan - 2025 Refresh
Institution CS Sales and Marketing Plan - 2025 Refresh
Climate Smart (CS) Marketing Strategic Plan - 2025 Refresh
Retail CS Sales and Marketing Plan - 2025 Refresh

Y3Q2

2025 Intern Performance Review

Direct-to-Consumer CS Sales and Marketing Plan - 2025 Refresh

Y3Q3

Y3Q4

Indiana CS Sales and Marketing Plan - 2026 Refresh

Y4Q1

Louisville/Cincinnati CS Sales and Marketing Plan - 2026 Refresh
Institution CS Sales and Marketing Plan - 2026 Refresh
Climate Smart (CS) Marketing Strategic Plan - 2026 Refresh
Retail CS Sales and Marketing Plan - 2026 Refresh

Y4Q2

2026 Intern Performance Review
Direct-to-Consumer CS Sales and Marketing Plan - 2026 Refresh

Y4Q3

Y4Q4

Indiana CS Sales and Marketing Plan - 2027 Refresh

Y5Q1

Louisville/Cincinnati CS Sales and Marketing Plan - 2027 Refresh
Institution CS Sales and Marketing Plan - 2027 Refresh
Climate Smart (CS) Marketing Strategic Plan - 2027 Refresh
Retail CS Sales and Marketing Plan - 2027 Refresh

Y5Q2

2027 Intern Performance Review
Direct-to-Consumer CS Sales and Marketing Plan - 2027 Refresh

Y5Q4

Indiana CS Sales and Marketing Plan - 2028 Refresh

Geospherics deliverables:

1) YR1 (month 6): Soil carbon sequestration interim report: initial results from soil sampling and analysis at Fischer Farms.
2) YR1 (month 6): LCA and GWP interim report: initial results from FFUB value chain assessment and literature data sources.
3) YR2 (month 18): Manuscript submitted to peer-reviewed journal documenting enhanced soil carbon sequestration at Fischer Farms via FFUB production processes.
4) YR2 (month 18): Manuscript submitted to peer-reviewed journal identifying general pathways to achieving carbon neutral/negative beef and initial assessment of the FFUB commodity value chain.
5) YR3 (month 30): GHG monitoring interim report: initial results from dual-comb laser spectroscopy measurements at Fischer Farms for reference group and algae supplement group.
6) YR4 (month 42): Manuscript submitted to peer-reviewed journal documenting GHG emissions of FFUB cattle.
7) YR5 (month 54): Manuscript submitted to peer-reviewed journal documenting enhanced soil carbon sequestration at all three farms adopting the FFUB production processes.
8) YR5 (month 54): Manuscript submitted to peer-reviewed journal demonstrating the benefits of FFUB in reducing GWP relative to conventional beef based on full value chain LCA.

Climate-Smart Practices and Limitations-Fischer Farms NF, LLC

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

NRCS Practice Code	Practice Name
810	Annual Forage for Grazing Systems
512	Forage and Biomass Planting
528	Prescribed Grazing
590	Nutrient Management
592	Feed Management

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

Table of Contents

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."

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.