



Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE



CLIMATE CHANGE ADAPTATION PLAN

AGRICULTURAL MARKETING SERVICE

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INTRODUCTION

The Agricultural Marketing Service (AMS) facilitates the fair and efficient marketing of U.S. agricultural products, including food, fiber, and specialty crops. AMS administers programs that create domestic and international marketing opportunities. AMS also provides the agriculture industry with valuable services to ensure the quality and availability of wholesome food for consumers around the world. Over 4,000 AMS professionals support the country's diverse agricultural operations, which range from individual farmers to international businesses. These operations employ 1 in 12 people in the United States. AMS also administers millions of dollars in annual grant investments, creating opportunities by supporting economic development in small towns and rural communities.

Much of the Agency's support for agriculture is provided through commodity-specific efforts, such as our Dairy; Specialty Crops; Livestock and Poultry; and Cotton and Tobacco Programs; and Federal Grain Inspection Service. AMS also oversees the National Organic Program; Science and Technology Program; Transportation and Marketing Program; and the Fair-Trade Practices Program. AMS provides regulatory oversight for over 20 research and promotion programs and enforces other Federal regulations such as the Perishable Agricultural Commodities Act (PACA), the United Grain Standards Act (USGSA), the Agricultural Marketing Act (AMA), and the Seed Act. As part of our sector support activities, we administer a suite of services to support U.S. agricultural industries. These include, but are not limited to:

- **Market News:** For over 100 years, AMS has provided free, unbiased price and sales information to assist in the marketing and distribution of farm commodities. Each year, Market News issues thousands of reports, providing the industry with key wholesale, retail, and shipping data. The reports give farmers, producers, and other agricultural businesses the information they need to evaluate market conditions, identify trends, make purchasing decisions, monitor price patterns, evaluate transportation equipment needs and accurately assess movement
- **Quality Grading and Inspection:** AMS works within the commodity sectors to determine and issue USDA quality factors and grades. Often, the grade is used by wholesalers to determine price or meet contract terms. For consumers, these grade marks are sometimes listed on the product (beef, lamb, chicken, turkey, butter, and eggs) and sometimes unlisted (fresh and processed fruits and vegetables). These quality factors and grades are critical to trade and the ease of business transactions. Currently, AMS grades a variety of commodities to include grain, cotton, fresh and processed fruits and vegetables, poultry, eggs, livestock and meat, dairy products, and tobacco.
- **Auditing and Accreditation:** To protect the market value and opportunity for U.S. commodity producers, the certification and quality of products must be trusted both nationally and internationally. AMS is recognized as a competent and reliable provider of these services. AMS uses International Organization for Standardization (ISO), Hazard Analysis and Critical Control Point (HACCP) Principles and Guidelines to ensure fair, thorough, and consistent auditing and accreditation services. Use of these services is voluntary. They are available to U.S. producers and are paid for by user-fees.
- **Fair and Competitive Markets:** Fair and competitive markets are critical to the health of the U.S. agriculture industry and the economy. The health of these systems also contributes to an innovative and resilient marketplace. AMS plays a key role in ensuring legal, competitive, and fair markets to help protect both the producers and consumers from deceptive, unfair, discriminatory, or illegal practices.
- **Market Development:** AMS also builds new and expanded markets by delivering resources through a range of grant programs and by conducting oversight activities that support the National Organic Program and industry-driven commodity marketing programs. In terms of grants, AMS invests heavily in the development of markets through its Farmers Market and Local Food Promotion Program, which funds projects for local and regional food producers and businesses, and Regional Food Systems Partnership Grants, which fund the critical planning and convening functions necessary for a variety of stakeholders and multi-level government actors to coordinate development and enhancement of regional food systems, ensuring more intentional decision-making to benefit producers and contribute to a secure food supply. Additional market development grants to support local and regional food supply chains include the Dairy Business Innovation Initiatives, Meat and Poultry Inspection Readiness Grants, and Specialty Crop Block Grants. In terms of oversight activities, the AMS National Organic Program (NOP) is the federal regulatory program that develops and enforces consistent national standards for organically produced agricultural products sold in the United States, ensuring market integrity. Finally, AMS oversees 22 commodity boards that empower farmers, ranchers, and agricultural businesses to pool their resources and combine efforts to develop new markets, strengthen existing markets, and conduct important research and promotion activities.

BACKGROUND AND SUMMARY

On 27 Jan 2021, President Biden issued Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad. Amongst other requirements, this EO directed the USDA to build robust climate action plans, along with data and information products designed to improve adaptation and increase resilience to the effects of climate change. In response to this EO, USDA implemented Departmental Regulation (DR) 1070-001, USDA Policy Statement on Climate Change Adaptation. The DR created a process around which USDA agencies, including AMS, must create and implement climate adaptation plans. This process included climate change vulnerability assessment with risk identification and mitigation, and metric creation. As part of this, the DR acknowledged the need to complete budgeting analysis to plan and allocate resources to complete the required efforts.

This plan represents the first steps in AMS' process to meet the requirements under the DR. Our plan highlights ongoing and planned AMS initiatives supporting climate change adaptation and resilience, recognizing that climate change will impact all levels of the agriculture and food industry, from farms to consumers.

Disruptions in agriculture include, but are not limited to, high temperatures, droughts and floods, lower crop yields, strain or death of livestock, and increased frequency of extreme events that cause disruption in the supply chain. Although the impact of climate change on agriculture and the supply chain is understood at a high level, as part of adaptation planning and meeting the requirements of both the EO and DR, AMS's plan accounts for specific vulnerabilities and risks for each of its programs. On an ongoing basis, AMS will examine the current and future climate change impacts to our mission, programs, operations, and stakeholders.

OVERVIEW OF CLIMATE CHANGE EFFECTS AND VULNERABILITIES

Given the unique scope of AMS work, the vulnerabilities that directly impact the agency's mission are factors, such as extreme weather, that can prevent us from conducting our services and oversight activities in support of industry. These may impact mobility, facilities, supply chains, or operational safety.

The agricultural sectors that AMS supports may also experience a diverse array of climate change impacts, ranging from widespread production or processing capacity issues to more localized effects on individual facilities. To add to this complexity, certain commodities with more complex supply chains, such as livestock, may be additively impacted by threats (e.g., climate impacts on feed production for the livestock, drought conditions affecting animal health, and processing facility shutdowns due to extreme weather events). Examples of potential or probable climate change impacts include:

- Decreased crop yield
- Increased frequency of extreme events, resulting in flooding and field contamination
- Drought and water scarcity
- Shortened or longer growing seasons
- Pollinator loss
- Increased pests and disease
- Reduced or variable winter chill
- Impact of heat and drought conditions on forage sources
- Heat stress on crops and livestock
- Heat stress on workforce
- Extreme weather impacts on facility operations (e.g., flooding, loss of power, inability of workers to travel to operate plants, etc.)
- Costs associated with necessary adaptation actions

All of these impacts can create volatility in the marketplace, pose supply chain risks, and decrease food and water security. Appropriately planning for climate change adaptation requires planning for significant resource demand across the spectrum and addressing the often-disproportionate impacts on underserved communities.



CLIMATE CHANGE ADAPTATION ACTIONS

OVERVIEW

Adaptation planning is key to food security and the successful support of U.S. agricultural commodities. As AMS delivers on USDA's priorities, we will implement several initiatives that address climate change adaptation to support uninterrupted mission-critical services. To ensure success, AMS is implementing a phased approach that can be revisited on a cyclical basis (i.e., each fiscal year).

The first cycle of this work commenced in FY 2022 and includes:

- **PHASE I:** Identification of climate adaptation risks, opportunities, and on-going initiatives
- **PHASE II:** Ongoing implementation of targeted initiatives with metrics. Metrics are defined on a project-by-project basis, rather than globally itemized in this plan, and, if warranted, each project is scoped in terms of resource allocation and detailed implementation plans.
- **PHASE III:** Examine lessons learned and redesign, as needed. Continue to identify and address emerging adaptation initiatives.



AGENCY INITIATIVES

AWARENESS AND EDUCATION

- **Vulnerability:** The threats posed by climate change are not necessarily well understood across our workforce, which can result in a lack of preparedness in areas at risk for severe weather and difficulty responding to customer service needs during extreme events.
- **Action:** To build knowledge across our team, AMS will institute an employee awareness and education campaign. To achieve this, we will utilize existing USDA climate change training resources to improve awareness and education regarding the impacts of climate change on our operations, sectors, and stakeholders. This will be a critical step in helping us understand and assess our vulnerabilities. As we improve our knowledge of the issue, we may see additional risks and vulnerabilities in our systems and can prepare our adaptation actions accordingly.
- **Status:** Planned
- **Implementation Plan:** AMS will utilize existing programs and independent events to raise employee awareness of the risks posed by climate change and how they can be prepared to respond if impacted by its effects.

CONTINGENCY OPERATIONS PLANNING

- **Vulnerability:** Increased frequency of extreme events (hurricanes, derechos, etc.) or long-term impacts (such as changes in flood plains) could severely impact our operational and support capability in the field. These events could compromise the structures in which we work and/or put the safety of our personnel at risk. The complexity of this issue is increased by the fact that many of the facilities in which we operate are not owned by us (i.e., providing grading services in poultry plant). To ensure successful operations in the event of climate change impacts, we must highlight the risks within each of the areas in which we operate and build robust contingency operation (ConOps) plans to ensure we are prepared.
- **Action:** Review existing plans and/or assess need for new ConOps plans, to ensure all climate change-related vulnerabilities are assessed and incorporated. This action will be done in consultation with industry to jointly determine contingency plans that allow AMS to continue service delivery to our customers and/or to grant flexibilities during extreme weather events and other disasters. Areas of specific consideration, as needed, should include, but is not limited to:
 - Specific risk assessment (location and mission based geared toward contingency activities)
 - Scenario planning for different types of disasters
 - Ingress and Egress Routes
 - Personnel safety
 - Temporary housing for personnel
 - Access to food
 - Access to fuel
 - Access to internet and computers
 - Creation of information tools for personnel
 - Waiver planning, clearance, and implementation
 - Key resource list
 - Return to Work Planning
 - Facility damage assessment
 - Safety assessment (electricity, air quality, etc.)
- **Status:** Planned
- **Implementation Plan:** AMS will address these considerations in its next round of Continuity of Operations (COOP) planning, which is done on an annual cycle.

INDUSTRY SUPPORT (MARKETING)

- **Vulnerability:** Part of the agency's day-to-day mission is to provide support to industry. Some of this takes the form of inspection and process verification, whereas others support marketing approaches. AMS programs often work with different commodity boards and industry groups from a variety of sectors of U.S. agriculture. These stakeholders utilize AMS to review marketing materials that reference climate change (i.e., commodity boards) and to conduct process verification for new sustainability or climate related activities (e.g., process verified programs). To ensure consistency and clarity of information in the marketplace, the content of these materials and processes should be vetted and aligned with the most up to date USDA climate science and policy. In addition, there are opportunities for USDA to collaborate with the commodity boards on industry-driven research that supports the growth of climate smart practices and products in agriculture. By engaging in strategic partnerships (e.g., pairing boards with USDA's scientific community), we could additionally leverage and build out the climate-related research pursued by industry boards and amplify that work for broader reach and impacts across commodity areas.
- **Action:** Institute a process by which AMS engages Department-level climate experts to aid in review of climate related standards and marketing programs.
- **Action:** Encourage commodity boards to invest in climate adaptation and mitigation research.
- **Status:** In Process
- **Implementation Plan:** These efforts will be managed by the AMS commodity programs, as needed.

INDUSTRY SUPPORT (RESOURCES)

- **Vulnerability:** As industry works towards climate adaptation, they may define more specific resource needs from AMS than the marketing support listed above. To this end, industry may approach AMS through a variety of avenues, to include pursuit of grants to achieve their emerging climate change goals. For example, like many commodity sectors, specialty crops producers face a variety of climate change impacts, dependent on what the commodity is and where they produce it. Climate change impacts like, drought, increased pests, increased diseases, and floods are only part of the many climate change effects that these producers will encounter.
- **Action:** AMS will facilitate and promote opportunities to access USDA grants, programming, and climate change information to ensure stakeholders have access to resources to conduct and communicate climate change initiatives. To start, AMS has been encouraging investments through USDA's Specialty Crop Block Grant Program (SCBGP) toward projects that address climate adaptation and mitigation research and practices that will enhance the competitiveness of U.S. or U.S. territory-grown specialty crops.
- **Status:** In Progress
- **Implementation Plan:** These efforts will be implemented by AMS commodity and grant programs, and is part of the USDA Agri-Food Supply Chain Assessment: Program and Policy Options for Strengthening Resilience.

INDUSTRY SUPPORT (MARKET NEWS)

- **Vulnerability:** One of the largest risks the impacts of climate change pose is market instability. Extreme events, supply chain challenges, and long-term yield and quality issues within the commodity sectors mean that periods of instability are likely to increase. AMS plays a critical role in informing and supporting U.S. commodity markets through its market news functions.
- **Action:** Ensure consistent and continued report issuance, covering key wholesale, retail, and shipping information. This information is critical to maintaining a healthy market and supply chain for U.S. commodities, making the system much more resilient to the market impacts of climate change.
- **Status:** Ongoing
- **Implementation Plan:** This is part of AMS's core mission.

USDA PARTNERSHIP FOR CLIMATE-SMART COMMODITIES SUPPORT

- **Vulnerability:** The USDA Partnership for Climate-Smart Commodities initiative is a massive effort which will require a range of personnel resources and expertise. The Farm Production and Conservation (FPAC) team has already expressed the need for support to AMS, which has a primary function within its scope of grant review and approval.
- **Action:** AMS stands ready to support FPAC on their climate-smart ag work by providing marketing and grant expertise during proposal reviews and project implementation.
- **Status:** Planned
- **Implementation Plan:** These efforts will be managed by AMS commodity and grant programs, as needed.

SUPPLY CHAIN DISRUPTIONS (TRANSPORTATION)

- **Vulnerability:** Climate related vulnerabilities affect all transportation modes, creating bottlenecks in agricultural supply and distribution, and reducing the system's resiliency. Collaborative efforts to identify and build research and data in ways that can address these vulnerabilities and enact mitigation efforts are key to addressing increased frequency and severity of transportation disruptions.
- **Action:** AMS Transportation Services Division will utilize cooperative agreements to work with partners, identifying climate related disruptions to transportation networks. AMS will also continue to build new data and analytics, including those relevant to climate if/where available, into its AgTransport 3.0 dynamic data platform that stakeholders can use to assess supply chain challenges.
- **Status:** Planned
- **Implementation Plan:** This project is being implemented by the AMS Transportation and Marketing Program and is aligned under the USDA Agri-Food Supply Chain Assessment: Program and Policy Options for Strengthening Resilience.

ORGANIC TRANSITION INITIATIVE

- **Vulnerability:** Many organic production methods make agricultural systems more resilient to the impacts of climate change. However, transitioning to organic production requires technical and financial resources to convert an operation and achieve USDA organic certification.
- **Action:** AMS will facilitate transition to organic, including conservation practices and methods and climate-smart agriculture practices and methods. To achieve this, AMS will implement wrap-around technical assistance, including farmer-to-farmer mentoring and support building organic supply chains (including processing, storage, distribution, and other supply chain needs) in targeted markets through USDA's Organic Transition Initiative.
- **Status:** Planned
- **Implementation Plan:** This project is being implemented by the AMS National Organic Program.

ORGANIC AND CLIMATE-SMART AGRICULTURE

- **Vulnerability:** The marketplace does not fully acknowledge and reward the strong link between organic production and climate-smart agriculture. As such, there exists an opportunity to reinforce and capture the connections between climate-smart agriculture and what many certified organic farmers are already doing. This may help organic farmers better capture other incentives or more clearly align with other programs that reward or compensate farmers for climate-smart programs. It could also help transitioning farmers better understand the broader benefits of organic certification.
- **Action:** AMS will seek input from the National Organic Standards Board (NOSB), a federal advisory committee, on how to reinforce and capture these connections and to investigate how organic farmers can better connect with and capitalize on climate-smart programs, policy, and market infrastructure.
- **Status:** In Progress
- **Implementation Plan:** This project is being implemented by the AMS National Organic Program.

COTTON RISK TRENDING

- **Vulnerability:** Temperature, rainfall, and other impacts of climate change negatively impact both the yield and quality of cotton.
- **Action:** AMS Cotton and Tobacco Program is working with the team from TIBCO to compile a database tracking and trending system. The platform will help identify climate related impacts on crop quality and production, enabling USDA and industry to anticipate and adapt to the impacts of climate change.
- **Status:** Ongoing
- **Implementation Plan:** The project is being implemented by the AMS Cotton and Tobacco Program.



CROSS-CUTTING ADAPTATION ISSUES AND CONSIDERATIONS

- **ENVIRONMENTAL JUSTICE**

Many of our employees live and work in areas that may experience the disproportionate impacts of climate change. For many who live in areas that will be most impacted by the effects of climate change, housing, transportation, food, and internet connectivity can be cut off through extreme events. Acknowledging this and supporting our employees by placing their well-being as a priority is the first step in ensuring we can continue to support industry through these events. To address this, AMS fully supports our employees during contingency operations planning and will improve outcomes through our education and awareness campaign.

- **WORKFORCE CLIMATE LITERACY**

AMS has created an initiative to raise awareness and offer training for both the leadership and their teams in climate change impacts. Details of this effort are addressed above in the awareness initiative.

- **USDA CLIMATE HUBS**

Over the course of the coming year, AMS will assess opportunities in which we can support the Climate Hubs (e.g., ensuring our relevant grant announcements are distributed through the Climate Hubs network). New opportunities will be included in future action plans to support and facilitate climate priorities within USDA.

Table 1 AMS adaptation actions to address climate change effects and vulnerabilities

Climate Vulnerability	Action Title/Description	Type of Activity	Lead Office	Timeframe	AMS External Coordination	Progress Metrics	Accomplishments to Date
Climate Literacy	Awareness and Education of AMS Employees	Ongoing	Office of the Administrator – Training Officer	Ongoing	NA	# of courses or trainings offered; # of employees participated	Ongoing work
Shocks Due to Extreme Climate Events	Contingency Operations Planning; Consult with industry on needed flexibilities	Ongoing	Office of the Administrator – Compliance, Safety, and Security Division	Ongoing	Third-party Facilities with AMS Employees co-located	# of ConOps plans updated	Ongoing work
General (Industry Support)	Institute a process by which AMS engages Department-level climate experts to aid in review of climate related marketing programs.	Ongoing	AMS Grading and Auding Functional Committee	Ongoing	NA	TBD	Established a process for PVPs with OCE’s climate experts
General (Industry Support)	Encourage commodity boards to invest in climate adaptation and mitigation research	Ongoing	AMS Research and Promotion Functional Committee	TBD	Engage with subset of commodity boards doing climate related research	TBD	NA
General (Industry Support)	Promote opportunities to access USDA grants, programming, and climate change information and communicate climate change initiatives	Ongoing	Cross-Programmatic (AMS Transportation and Marketing; others)	Ongoing	NA	TBD	Incorporated climate change priority language in grant RFAs where appropriate

General (Industry Support)	Ensure consistent and continued report issuance, covering key wholesale, retail, and shipping information given supply chain impacts of climate	Ongoing	AMS Market News Functional Committee	Ongoing	Industry cooperators	# reports issued and markets covered annually	Ongoing work
General (USDA support)	Support FPAC on their climate-smart ag work by providing marketing and grant expertise during proposal reviews and project implementation	Ongoing	Cross-Programmatic	Ongoing	NA	# of AMS reviewers or consultations provided	Ongoing work
Supply Chain Resilience	Utilize cooperative agreements to work with partners, identifying climate related disruptions to transportation networks	Ongoing	AMS Transportation and Marketing Program	2022-2023	University cooperators	# of agreements and research products produced	Ongoing work
Supply Chain Resilience	Facilitate transition to organic, including conservation practices and methods and climate-smart agriculture practices and methods.	Proposed	AMS National Organic Program	2022-2025	External cooperators; producer groups; certifying agents	# of transitioned operations and new partnerships	NA
Supply Chain Resilience	Seek input from the National Organic Standards Board (NOSB) on how to reinforce and capture connections between organic and climate-smart agriculture and capitalize on climate-smart programs, policy, and market infrastructure.	Ongoing	AMS National Organic Program	Ongoing	National Organic Standards Board	TBD	Ongoing work; Request sent to NOSB in February 2022
Supply Chain Resilience	Cotton Risk Trending to assess impact of climate on cotton quality	Proposed	AMS Cotton and Tobacco Program	Ongoing	Technology partners and cotton industry	TBD	NA