United States Department of Agriculture

Fiscal Year 2025–2026 AI Strategy

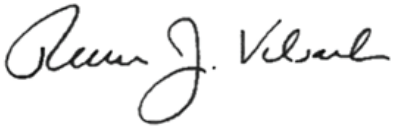
Contents

"The U.S. Department of Agriculture and the agriculture sector in the United States have long embraced technology and the opportunities it can provide to produce more with less, helping us feed, fuel, and clothe a growing global population. From biotechnology to precision agriculture, these advancements allow our farmers, ranchers, and producers to remain the standard for high-quality, safe, and nutritious food. At the Department, we simultaneously use new technologies to find ways to be more efficient in our work for the American people, be they farmers, consumers, or residents of rural communities.

That is why I am proud to announce the U.S. Department of Agriculture's first comprehensive strategy for integrating artificial intelligence (AI) to advance our mission of ensuring the health, safety, and prosperity of American agriculture. This document, guided by President Biden's leadership, and the Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, will build the foundation for USDA to meaningfully enhance our artificial intelligence capabilities, infrastructure, and workforce.

At the heart of our strategy is a commitment to transparency, ethics, and accountability. We recognize the transformative potential of AI, but most importantly, we also understand the importance of using it responsibly. Therefore, our AI Strategy for Fiscal Years 2025–2026 reflects a thoughtful, responsible, transparent, and accountable approach to harnessing cutting-edge technologies that support data-informed decision-making, improve our efficiency, and enhance our ability to serve the American people.

While USDA has responsibly used AI for some time, institutionalizing this work and charting a path forward on how we use it well is an exciting new chapter for USDA. I am confident that our responsible and purposeful use of AI will strengthen the future of American agriculture for generations to come."



Thomas J. Vilsack
Secretary
U.S. Department of Agriculture

“Our progress in advanced analytics and data-informed decision-making over the past decade demonstrates the importance of this inaugural AI Strategy, which will establish the technological and cultural infrastructure to responsibly use AI, increase employee satisfaction, and expand the impact of our mission delivery. This Strategy underpins and builds on USDA’s strategic goals as well as data, information technology (IT), and workforce strategies to ensure that our data, technology, workforce, and governance structures support responsible and effective AI use. USDA further commits to designing and deploying AI strategically and in ways that respect privacy, safeguard data, and minimize biases so that all stakeholders can benefit from the opportunities that AI can provide.

This document could not have been created without the collaboration and invaluable inputs received from stakeholders representing every USDA Mission Area and key departmental functions including, but not limited to: data, program delivery, procurement, human resources, diversity and inclusion, cybersecurity, privacy, IT, human rights, finance, and strategic planning. Together, we have built a vision for AI at USDA that lays the foundation to explore and enhance our potential over the next two years and onwards.”

Christopher Alvares
Chief Data & AI Officer
U.S. Department of Agriculture

Introduction

The U.S. Department of Agriculture (USDA) works to provide economic opportunity through innovation to help rural America thrive, to promote agricultural production to feed the nation and the world, and to preserve America's natural resources. These missions and our back-end operations will all benefit from AI-driven efficiencies and insights. Our use of AI will be underpinned by the necessary infrastructure, data readiness, governance, and workforce preparedness, and most importantly measures to ensure the ethical, equitable, and responsible use of AI.

At USDA, AI will have an outsized impact by:

Creating operational efficiencies by using AI and generative AI (GenAI) to streamline repetitive tasks and enhance our front-line workforce's ability to save time and focus on mission-related priorities. In particular, GenAI can streamline activities such as drafting summaries, reports, and communication materials to improve efficiency and knowledge sharing. AI will not replace our workforce, rather it will enhance and augment our workforce.

Leveraging our vast amounts of geospatial data and computer vision capabilities to help us explore automating the analysis of satellite, drone, and ground-level imagery to monitor crop health, forest health, predict the spread of wildfire, and assess damage from natural disasters. It can also enhance real-time surveillance to improve land use planning and assess biosecurity threats.

Expanding the use of predictive analytics such as intelligent automation and machine learning to enhance agricultural production, improve food safety, increase sustainability, predict changes in crop yields, increase understanding of animal disease outbreaks, and more proactively allocate resources to mitigate the impacts of droughts, floods, or pest outbreaks.

Driving data-informed agricultural policy and research, such as processing large datasets, creating actionable insights for policymaking, forecasting market trends, improving pest management, and enabling better decisions that benefit farmers and consumers alike.

Forging stronger relationships with academia and expanding our already-strong presence at agricultural schools and universities across the country can both improve how we do business and can help us recruit the future AI workforce.

Exploring AI in a semi-federated model will help us elevate expertise from across our USDA Mission Areas, offices, and programs to make USDA-wide policies stronger, and also identify when flexibility is needed for trailblazers to have room to explore and innovate within the parameters of this Strategy.

This **FY25–26 USDA AI Strategy** is a product of consultation with hundreds of programmatic, operational, and executive stakeholders across Mission Areas and Staff Offices. Our Strategy incorporates a broad definition of AI, inclusive of advanced analytics and generative AI, and seeks to support USDA's existing culture of innovation and data-informed decision-making by strategically integrating AI into our federated operating environment. The goals and objectives in this document address the findings of our current state assessment and provide a clear path to responsible and effective AI adoption. In this way, the Strategy also builds on several objectives in the FY24–26 USDA Data Strategy related to artificial intelligence, machine learning, and automated systems (for more on USDA's definition of AI, reference "Key Definitions" in the Appendix).

Vision Statement

USDA will build workforce readiness, governance, and technological infrastructure required to safely integrate AI into our mission and business delivery and more effectively distribute benefits and services internally and across the nation.

Over the next two years, USDA aims to be a leader in the federal space in growing and supporting our data and AI workforce. We understand that increasing our AI maturity is a large undertaking that will not be possible without supporting top talent, engaging our employees, and using AI as a tool to allow our people to free up their time to focus on the mission. USDA will empower its practitioners to use AI and GenAI effectively and safely, recognizing the power of these tools to enable our practitioners and not replace them. USDA is embarking on a two-year journey of learning and growth that will position us to make the most out of AI advancements and opportunities in the years to come.

Collaboration across USDA will be the main driver to achieve our vision. We understand that AI encompasses a vast range of capabilities, and we cannot approach AI in a silo. The Chief AI Officer (CAIO) will consult closely with many communities, including but not limited to: data, IT, human resources, finance, procurement, legal, civil rights, inclusion and diversity, labor unions, agencies and programs, and more. These diverse perspectives will not only help us achieve the goals set out in this document, but they will also help ensure that our actions collectively work to the benefit of USDA's beneficiaries and stakeholders. Similarly, external partnerships will also play a critical part in our journey. We will continue to work with the National Institute of Standards and Technology (NIST) to adapt frameworks; with academia to help us pressure test innovative ideas and build a pipeline of talent; and with federal, state, local, tribal, territorial government and international partners to share ideas and best practices. Together, USDA and our stakeholders will implement scalable AI systems that enhance decision-making, automate routine processes, and improve mission outcomes. USDA will leverage AI to reshape how we meet our goals and improve our operations through targeted use cases and the effective deployment of cutting-edge solutions.

FY2025–2026 AI Strategy: Vision, Goals, and Objectives

Vision

USDA will build workforce readiness, governance, and technological infrastructure required to safely integrate AI into our mission and business delivery and more effectively distribute benefits and services internally and across the nation.

Goals and Objectives

1. AI Governance and Leadership

USDA's AI leadership will empower employees and provide a robust, flexible, and transparent governance framework that fosters innovation, encourages collaboration, and promotes responsible, safe, and value-added use of AI.

OBJECTIVES:

- **1.1:** Mature USDA's AI governance and leadership structures, empower Mission Area ACAIOs, and clearly define AI policies, roles, and responsibilities across the enterprise.
- **1.2:** Determine the appropriate level of oversight for AI use cases and tools across their entire lifecycle while encouraging experimentation.
- **1.3:** Collaborate with governmental, academic, and private sector partners to ensure the best AI outcomes.

2. Workforce Readiness for AI

USDA will strategically develop, recruit, and retain a diverse workforce with AI skills and competencies that effectively anticipate and meet current and future program needs.

OBJECTIVES:

- **2.1:** Foster a culture of innovation where human expertise remains central to the design, implementation, and continuous improvement of AI technologies.
- **2.2:** Expand our ability to recruit, empower, and retain AI-skilled practitioners by developing an AI talent management framework.
- **2.3:** Promote AI learning opportunities for all employees at all skill levels.
- **2.4:** Integrate federal and department-wide AI priorities into USDA workforce planning efforts.

3. AI Infrastructure and Toolset

USDA will promote and develop secure and scalable infrastructure and tools that encourage trustworthy, high-impact, and innovative AI use.

OBJECTIVES:

- **3.1:** Expand a common infrastructure and toolset, including the USDA AI Lab, to enable mission-focused and high-impact AI use cases.
- **3.2:** Establish robust AI infrastructure standards that promote responsible, safe, innovative, and secure use of AI.
- **3.3:** Prioritize investments in infrastructure, tools, prototypes, and AI solutions that have the executive support, funding, and resources needed to be successful across their lifecycle.

4. Data Readiness and Access

USDA will ensure data readiness and access for AI by providing clear guidance on data stewardship, supporting timely and effective data usage, and building confidence in AI outputs.

OBJECTIVES:

- **4.1:** Invest in data management practices to support AI readiness, unlock experimentation, and provide confidence in AI outcomes.
- **4.2:** Make our data more accessible to promote in-house AI exploration while maintaining robust data protections.
- **4.3:** Prioritize data rights, quality, and accessibility throughout the procurement lifecycle for AI capabilities.

5. Ethical, Equitable, and Responsible Use of AI

USDA will adopt and adapt AI policies and risk-based frameworks that protect human rights, health, and safety and mitigate risks through transparency, accountability, and inclusivity.

OBJECTIVES:

- **5.1:** Ensure proper risk frameworks and human oversight are in place across the AI lifecycle to evaluate and mitigate potential bias and undesirable outcomes.
- **5.2:** Monitor industry developments and vendors' use of AI to prevent improper use and ensure federal and departmental policy compliance.
- **5.3:** Partner with stakeholders to create feedback loops, leverage cutting-edge tools, and continually improve our use of AI.

Goal 1: AI Governance and Leadership

USDA's AI leadership will empower employees and provide a robust, flexible, and transparent governance framework that fosters innovation, encourages collaboration, and promotes responsible, safe, and value-added use of AI.

Over the next two years, USDA's empowered AI leaders and governance bodies will oversee our progress towards the AI vision mapped in this Strategy. They will lay the foundation for USDA's long-term use of AI to gain operational and mission delivery enhancements and spearhead collaborative partnerships to achieve this vision. USDA's AI work aligns to our existing strategies such as the USDA Strategic Plan, USDA Data Strategy, USDA Science and Research Strategy, USDA IT Strategic Plan, IT Workforce Strategic Plan, and Digital First policy from OMB.

USDA has already made significant headway in building a resilient, responsive, and strong foundation for AI governance, including appointing a Chief AI Officer (CAIO), establishing the USDA AI Council, and launching the USDA Generative AI Review Board (GAIRB). Continuing to formalize and mature USDA's AI leadership and governance structures will support the development and deployment of effective and responsible AI use. Led by the CAIO, USDA will coordinate efforts to mature governance processes across all levels of the Department that keep pace with the evolving technology landscape. The CAIO and designated AI leaders at each Mission Area will share best practices, deliver guidance, and stand up appropriate governance structures to evaluate and support current and future use of AI at USDA.

AI governance standards and policies will help USDA's workforce effectively utilize AI by clarifying expectations for AI development and deployment while enabling exploration. Our risk-based approach to AI governance will seek to balance innovation and risk mitigation, encouraging high-impact use cases and supporting compliant AI adoption. USDA will also define how leadership structures, roles, and responsibilities will cascade across the organization. AI leadership will focus on setting clear priorities, reducing redundancy in oversight structures, customizing oversight frameworks to meet the needs of their programs, and enabling implementation of AI at the Mission Area level.

Key FY24 Accomplishments

- Appointed the USDA Chief AI Officer (CAIO)
- Established the USDA AI Council
- Published Interim Generative AI Guidance
- Established the USDA Generative AI Review Board (GAIRB)
- Evaluated and approved over a dozen Generative AI proof of concept proposals

Goal 1: AI Governance and Leadership

USDA's AI leadership will empower employees and provide a robust, flexible, and transparent governance framework that fosters innovation, encourages collaboration, and promotes responsible, safe, and value-added use of AI.

OBJECTIVE 1.1

Mature USDA's AI governance and leadership structures, empower Mission Area ACAIOs, and clearly define AI policies, roles, and responsibilities across the enterprise.

Key Actions:

- Strengthen the pillars of our AI governance and leadership structure at the Department level: the Chief AI Officer (CAIO), the USDA AI Council, the Generative AI Review Board, and the USDA Chief Data Officer Council.
- Cascade AI governance to the Mission Area, Staff Office, Agency, and Program levels in a way that complements unique program-specific requirements and processes, whether that is a responsibility added to an existing oversight structure or a newly created oversight body.
- Establish the Assistant Chief AI Officer (ACAIO) role at the Mission Area level.
- Update internal USDA guidance for artificial intelligence, evolve the interim guidance on generative AI, and establish clear decision-making processes for AI projects throughout their lifecycle. Updated guidance will encourage experimentation and innovation with the appropriate levels of oversight.

OBJECTIVE 1.2

Determine the appropriate level of oversight for AI use cases and tools across their entire lifecycle while encouraging experimentation.

Key Actions:

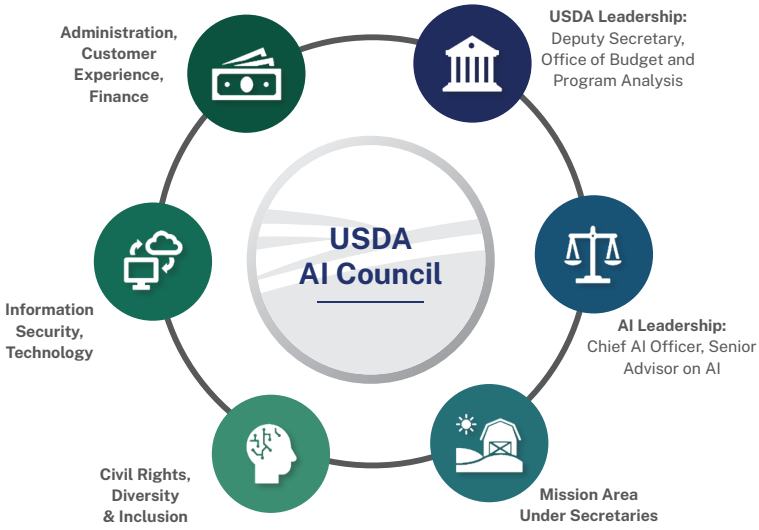
- Deploy a clear, risk-based evaluation framework to assess, prioritize, and track AI use cases to support Department operations, strategic priorities, and mission delivery, in alignment with existing USDA strategies.
- Evaluate and adopt government-wide best practices and industry standards to meet our needs. Our framework will define which types of AI use cases need to be reviewed by which governance bodies, what evaluation is required for off-the-shelf tools to be deployed, and what safeguards are needed for the ongoing use of AI, in alignment with Goal 5 of the AI Strategy.
- Track all applicable AI use cases in the publicly available USDA AI Inventory and develop a common approach for tracking internal R&D AI use cases to maintain transparency and commitment to our priorities.
- Develop standard requirements language to be added to every contract for the purchase of AI tools and capabilities to ensure that vendor use of AI aligns with USDA's policies around the ethical, equitable, and responsible use of AI, in alignment with Goal 5 of this Strategy.

OBJECTIVE 1.3

Collaborate with governmental, academic, and private sector partners to ensure the best AI outcomes.

Key Actions:

- Expand on our already strong and diverse partnerships with universities, non-profits, and the private sector to leverage their expertise and knowledge and help us deploy the most impactful use of AI.
- Continue to partner across federal, state, local, tribal, territorial, and international governments to share lessons learned, explore fit-for-federal technologies, and identify policies and frameworks to promote the responsible use of AI.
- Provide clear guidance on the appropriate use of third-party AI as well as requirements for secure handling of USDA data in partner environments to mitigate risk in a shared AI operating space.



AI Spotlight – USDA AI Council

USDA built out the USDA AI Council with broad-based membership, chaired by the Deputy Secretary, with the CAIO as Vice-Chair, and members representing every USDA Mission Area, Information Technology, Civil Rights, Diversity and Inclusion, Budget and Program Analysis, Customer Experience, Security, Technology, Finance, and Administration, pictured above. The USDA AI Council's diverse members will set the direction for USDA's AI journey.

Goal 2: Workforce Readiness for AI

USDA will strategically develop, recruit, and retain a diverse workforce with AI skills and competencies that effectively anticipate and meet current and future program needs.

USDA's primary commitment related to artificial intelligence is to remain a government leader in empowering our workforce to use AI and to keep humans in the loop of AI development, management, and use. We will prioritize investments in our AI and AI-enabling workforce aligned to the findings from (1) our department-wide AI Current State Assessment, (2) a joint CAIO, OHRM, and USDA Digital Service AI Training Needs Assessment, and (3) the FY24 Data & AI Workforce and Training Plans submitted by every USDA Mission Area and Staff Office. Our assessments identified ongoing and planned efforts related to hiring, retention, and upskilling as well as key workforce opportunities and risks associated with AI.

We also identified key opportunities for cross-USDA collaboration and areas where offices need leadership support. Key findings and needs uncovered during the assessment and therefore prioritized in this Strategy include: offering foundational AI literacy to all USDA practitioners; expanding targeted training opportunities to upskill practitioners in research and other technical roles; creating professional development opportunities such as details and rotations for employees to gain on-the-job experience; continuing to build on the success of the USDA AI Center of Excellence (CoE) to share best practices; and clarifying policies and guidance so that all practitioners understand expectations and requirements around the use of AI.

USDA has already made significant progress in promoting upskilling and shared training resources for our data workforce through initiatives like the USDA Data Science Training Program (DSTP), and we plan to build on this strong foundation to support both AI practitioners and stakeholders.

Key FY24 Accomplishments

- Hosted early career talent supporting key data & AI initiatives, including USDA Digital Corps and Pathways interns
- Designated an AI Talent Lead within the Office of Human Resources Management (OHRM)
- Delivered Responsible AI training
- Expanded the USDA-wide Data Science Training Program (DSTP) to over 150 practitioners and added AI topics
- Issued guidance to leverage the OPM AI and AI-enabling Direct Hire Authority
- Partnered with Women in Data for their annual Datathon
- Sponsored university data and AI hackathons
- Issued policy and procedural guidance on shared certificates within USDA to expedite AI hiring
- Built AI expertise in the Agricultural Research Service (ARS) through postdoctoral fellowship and graduate student internship programs as well as AI training opportunities for ARS researchers

Goal 2: Workforce Readiness for AI

USDA will strategically develop, recruit, and retain a diverse workforce with AI skills and competencies that effectively anticipate and meet current and future program needs.

OBJECTIVE 2.1

Foster a culture of innovation where human expertise remains central to the design, implementation, and continuous improvement of AI technologies.

Key Actions:

- Continue to invest in the USDA AI Center of Excellence (CoE) to: encourage the sharing of training plans and curriculums, resources, use cases, and best practices across the Department; gain broad-based feedback on proposed future trainings, policies, and priorities; and equip our practitioners to serve as the "human in the loop" as we build and oversee the use of AI.
- Host public-facing competitions, such as hackathons, to crowd-source solutions to USDA's biggest challenges, along with post-competition debriefs for internal and external audiences.
- Identify additional academic partnerships to engage with students, including via course capstones and hackathons.

OBJECTIVE 2.3

Promote AI learning opportunities for all employees at all skill levels.

Key Actions:

- Expand AI training offerings and promote learning opportunities, regardless of skill level. The CAIO will pilot and deploy AI-related trainings for USDA employees, from foundational AI literary training for the entire workforce, to research and category-specific AI training opportunities for leadership, AI practitioners, and other groups critical to the AI lifecycle.
- Mature the USDA Data Science Training Program (DSTP) to include more AI-related training and prepare the workforce for real-world data and AI projects typically seen at USDA.

AI Spotlight – Hackathons

In FY24, USDA successfully sponsored hackathons with various academic institutions and internally at USDA to crowdsource solutions for pressing problems, promote skill-building for practitioners, and build a strong pipeline of eager talent. The CAIO sponsored internal hackathons at events such as the USDA Innovation Symposium to develop and upskill internal talent and focus on USDA-wide initiatives. The CAIO also sponsored external hackathons with academic institutions including Colorado State University, South Carolina State University, and Hack Midwest. The AI CoE ran several cross-agency pilots as a learning experience, and the National Agriculture Statistics Service (NASS) held several Machine Learning hackathons. In FY25–26, USDA plans to expand our presence and partnerships and will continue hosting hackathons and rapid prototyping events to attract bright talent to the mission as well as provide our own workforce the opportunity to work with cutting edge technology, sharpen their skills, and develop innovative solutions.

OBJECTIVE 2.2

Expand our ability to recruit, empower, and retain AI-skilled practitioners by developing an AI talent management framework.

Key Actions:

- Develop position management standards for AI and AI-enabling roles to streamline hiring and increase the effectiveness of hiring strategies. USDA will build upon recent successes, including rapid hiring of highly skilled practitioners, leveraging Direct Hire Authority for critical data and AI-related roles, and using shared certificates which allow collaboration between hiring managers across USDA agencies.
- Continue to focus on early career and internship programs to recruit AI talent, including expanding our participation in the General Services Administration (GSA) US Digital Corps fellowship program and continuing to partner with the USDA Digital Service and the Office of Partnerships and Public Engagement (OPPE) to use Pathways, Virtual Student Federal Service, and other opportunities to bring early career talent to USDA.
- Provide more opportunities for existing USDA practitioners to learn and grow, including via rotational details. We will build on the existing partnership between the CAIO, CTO, and Mission Areas to identify rotational detail opportunities to increase employees' familiarity with IT services architectures, responsible AI, security, and data readiness for common AI applications across the Department.
- Develop a mechanism to identify and track AI expertise across the Department and identify and implement retention initiatives to harmonize AI skills with program needs.

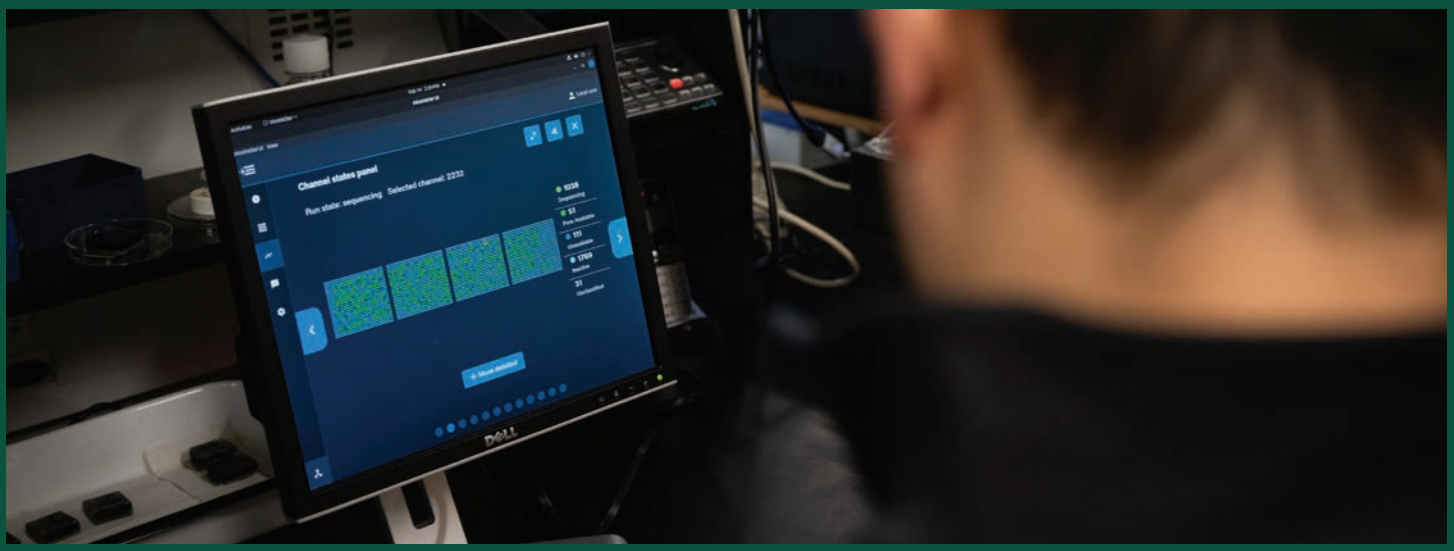
OBJECTIVE 2.4

Integrate federal and department-wide AI priorities into USDA workforce planning efforts.

Key Actions:

- Continue to strengthen the partnership between the USDA CAIO, USDA Chief Human Capital Officer, and USDA Digital Service.
- Align with applicable policies and regulations, including Federal and USDA-wide hiring guidance and priorities on recruiting, retaining, and upskilling AI talent. To help lead these efforts in collaboration with the CAIO, USDA designated an AI Talent Lead within the Office of Human Resources Management (OHRM) who will designate talent leads at each USDA Mission Area to coordinate AI talent efforts.
- Consult with our employees to understand the potential impact of AI on our work and develop pathways to AI occupations.
- Define and refine AI and AI-enabling roles and positions as well as establish metrics and KPIs to track progress in hiring, upskilling, and retaining our AI workforce across USDA.

Goal 3: AI Infrastructure and Toolset



USDA will promote and develop secure and scalable infrastructure and tools that encourage trustworthy, high-impact, and innovative AI use.

USDA commits to establishing or adopting cost-effective, accessible, and flexible standards for AI infrastructure and tools. We will strategically invest in infrastructure and tools that support testing and experimentation, as well as encourage the sharing of code and models to promote AI use cases beneficial to both USDA operations and mission delivery. In FY24, USDA already began to map infrastructure needs to support data and AI via the USDA Data & Analytics Modernization Plans. These plans were completed by every USDA Mission Area and by Staff Offices to understand major upcoming infrastructure investments, identify opportunities to collaborate and share costs, and help prioritize shared USDA-wide investments.

Investment in shared AI infrastructure and tools will allow for AI practitioners across USDA to work and experiment in sandboxes as well as share code and best practices without the creation of expensive and duplicative architecture. USDA will continue to assess AI infrastructure needs and set standards for procuring and using AI tools that align with federal risk-based frameworks. In line with these standards, we will set clear requirements for sustainable AI infrastructure that is trustworthy, secure, accessible, and scalable to meet USDA's federated needs and in alignment with unique Mission Area requirements. USDA understands that investing in infrastructure is a long-term goal that requires long-term planning to operate and maintain what we build; USDA will continue to evaluate and assess the budget landscape to ensure that our infrastructure priorities are sustainable, offer a return on investment, and are feasible within the existing funding climate.

Key FY24 Accomplishments

- Launched the USDA Innovation Hub and AI Lab
- Completed FY24 Data & Analytics Modernization Plans across every Mission Area
- Developed the Generative AI Innovation Adoption Pipeline Framework
- Invested in infrastructure and training to accelerate adoption of AI methods on SCINet's supercomputers used by ARS and Forest Service scientists

Goal 3: AI Infrastructure and Toolset

USDA will promote and develop secure and scalable infrastructure and tools that encourage trustworthy, high-impact, and innovative AI use.

OBJECTIVE 3.1

Expand a common infrastructure and toolset, including the USDA AI Lab, to enable mission-focused and high-impact AI use cases.

Key Actions:

- Implement a semi-federated AI infrastructure where all Mission Areas and Staff Offices will have access to centralized, high-value tools and environments to test and innovate, while also identifying where flexibility is needed for customized tools so that trailblazers have room to explore and innovate within the parameters of this Strategy. USDA encompasses programs with a wide range of missions, so we will also encourage flexibility for Mission Areas to take advantage of economies of scale using USDA-wide tools as well as to customize tools that meet their needs.
- Deploy a hub-and-spoke model to promote code sharing, pilot program development, and support research and development, with the USDA AI Lab as the "hub" and with Mission Area Innovation Incubators as the "spokes". The USDA AI Lab will provide a rapid-prototyping environment to accelerate developing and testing AI solutions tailored to USDA's needs.
- Enhance the Enterprise Data Analytics Platform & Toolset (EDAPT) to serve as the foundation for enterprise AI work by providing more access to curated data and common data and AI tools.
- Develop an AI infrastructure and toolset vision that maps current and planned needs and provides a roadmap for AI toolset adoption across USDA.
- Encourage the use of GenAI tools and solutions in a safe and responsible way to promote experimentation with guardrails and oversight in place.

OBJECTIVE 3.3

Prioritize investments in infrastructure, tools, prototypes, and AI solutions that have the executive support, funding, and resources needed to be successful across their lifecycle.

Key Actions:

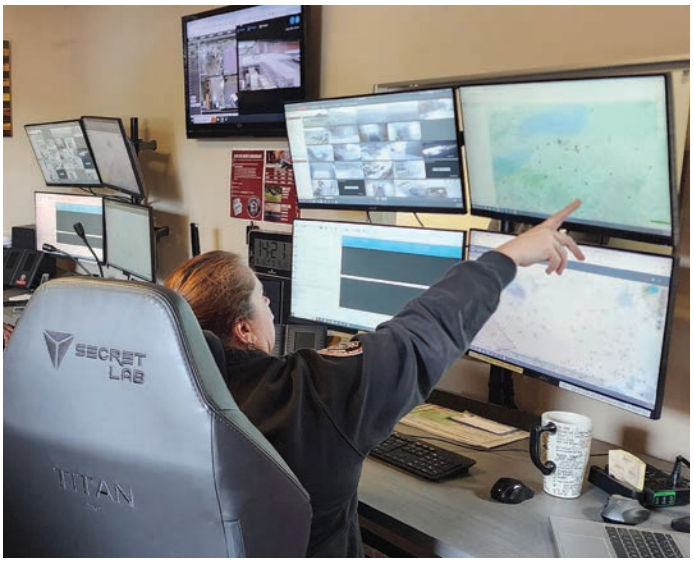
- Prioritize investments that provide the best value to USDA in the long-term, whether they are via procurement or built in-house. Infrastructure must be rightsized with the necessary performance and computing power, with continuous assessment to ensure we plan for sustainable growth.
- Assess options and encourage shared investments and partnerships across USDA to bring down the total cost of ownership.
- Issue requirements for sustainable AI investments that include developing long-term operations and maintenance (O&M) and training plans. The review of AI tools and vendor support contracts will include ensuring compliance with USDA and federal risk-based frameworks and standards as well as an assessment for shadow AI (see Objective 5.2 for more information). Approved AI and GenAI tools will be included in an inventory that Mission Areas and Staff Offices can quickly adopt, avoiding bureaucracy and re-approvals.

OBJECTIVE 3.2

Establish robust AI infrastructure standards that promote responsible, safe, innovative, and secure use of AI.

Key Actions:

- Review NIST and other standards and risk-based frameworks to set USDA standards for AI use and tool requirements.
- Provide guidance on recommended and approved AI and GenAI tools that accommodates a spectrum of Mission Area and Staff Office readiness and needs for AI adoption, ranging from building their own tools to implementing commercial off-the-shelf solutions.
- Maintain an inventory of platforms and tools being used for AI so that investments are not duplicated across the organization.
- Expand on USDA's Generative AI Innovation Adoption Pipeline framework to encourage risk-based experimentation prior to deployment.
- Expand our existing cloud "policy-as-code" actions to assist in managing infrastructure in a federated environment.



AI Spotlight – USDA AI Lab

In 2024, USDA launched the USDA AI Lab, a common cloud environment to collaborate, share code and infrastructure, and exchange lessons learned in a safe and secure manner. The USDA AI Lab, serviced by the USDA Digital Infrastructure Services Center (DISC), is a partnership between the CAIO and the CTO. When fully matured, the AI Lab will augment our ability to test and implement innovative technologies as well as enhance our risk tolerance and risk management processes for AI. While the AI Lab is in its early stages, early successes have shown that an incubation environment rapidly accelerates AI adoption while also reducing risks.

Goal 4: Data Readiness and Access

USDA will ensure data readiness and access for AI by providing clear guidance on data stewardship, supporting timely and effective data usage, and building confidence in AI outputs.

Data readiness is the foundation for AI readiness. To close data readiness gaps and effectively leverage AI, we will align with the data quality commitments outlined in the USDA Data Strategy for FY2024–FY2026 and push forward on meeting the requirements of the Foundations for Evidence-Based Policymaking Act of 2018 ("Evidence Act").

USDA will continue to develop our USDA Data Catalog and improve our data quality and data classification methods and standards. To identify Data Catalog priorities, Mission Areas and Staff Offices recently completed Metadata Management Plans and Data Quality & Measurement Management Plans in support of the USDA Data Strategy. These plans included specific actions that Mission Areas are taking to establish data readiness for AI and map minimum standards with program-specific requirements for data collection, usage, sharing, and security.

As we prepare our data for AI, USDA will align on data sharing and access agreements while also properly protecting USDA data. Data sharing will support our goals to innovate and increase cooperation among AI practitioners. To facilitate data sharing, we will clarify and transparently share our data access processes that protect sensitive data, especially personally identifiable information (PII), and the privacy of the public and our partners. We will continue to identify where we need to integrate evolving data quality and access standards into our contracts with vendors and external partners to specify and outline processes for data validation and improvement.

The guidance in this document will apply to every stage of the AI lifecycle – from development to staging to production environments – and the right access and quality checks must be in place across these different stages for us to have confidence in the outputs of AI. Overall, we believe that improving our data readiness and access processes will help us leverage AI to support our mission and increase trust with our stakeholders and customers.

Key FY24 Accomplishments

- Published the USDA Data Strategy for FY2024–FY2026
- Completed the USDA Metadata Management Plan
- Completed the USDA Data Quality & Measurement Management Plan
- Expanded the USDA Data Catalog

Goal 4: Data Readiness and Access

USDA will ensure data readiness and access for AI by providing clear guidance on data stewardship, supporting timely and effective data usage, and building confidence in AI outputs.

OBJECTIVE 4.1

Invest in data management practices to support AI readiness, unlock experimentation, and provide confidence in AI outcomes.

Key Actions:

- Ensure our data is properly documented with robust logging of metadata and AI use cases in the USDA Data Catalog, our Departmental source of truth for metadata.
- Develop guidelines and criteria for data classification related to AI use cases.
- Establish metrics that help us identify anomalies and trends in the data to assess the relevance and fitness of data for ongoing AI projects.
- Capture selected priority data lineage in our Data Catalog to promote data quality and transparency regarding data sources, transformations, usage, and controlled inference and derivation across AI systems and models.
- Explore the use of AI and GenAI to improve internal data management.
- Explore the use of third-party datasets to augment AI use cases.

OBJECTIVE 4.3

Prioritize data rights, quality, and accessibility throughout the procurement lifecycle for AI capabilities.

Key Actions:

- Require all contracts and vendor partnerships to adhere to USDA data access, privacy, and usage policies.
- Standardize required contract language and templates that define government data ownership, access rights, and usage parameters.
- Work with vendors to proactively disclose when their products or services utilize generative AI, including future plans for software updates to include generative AI components.
- Collect lessons learned from contract outcomes to refine USDA's required language and share best practices across the AI and contracting communities at USDA.

AI Spotlight – USDA Data Strategy

Responsible AI is nearly impossible to deliver without a strong data program. As such, USDA's AI journey is intertwined with its data journey. In October 2023, USDA released its second Data Strategy, covering Fiscal Years 2024 through 2026 and building on the success of the previous data strategy. With the increase in importance related to responsible and ethical deployment and use of AI, the successful execution of the USDA Data Strategy is important now more than ever.

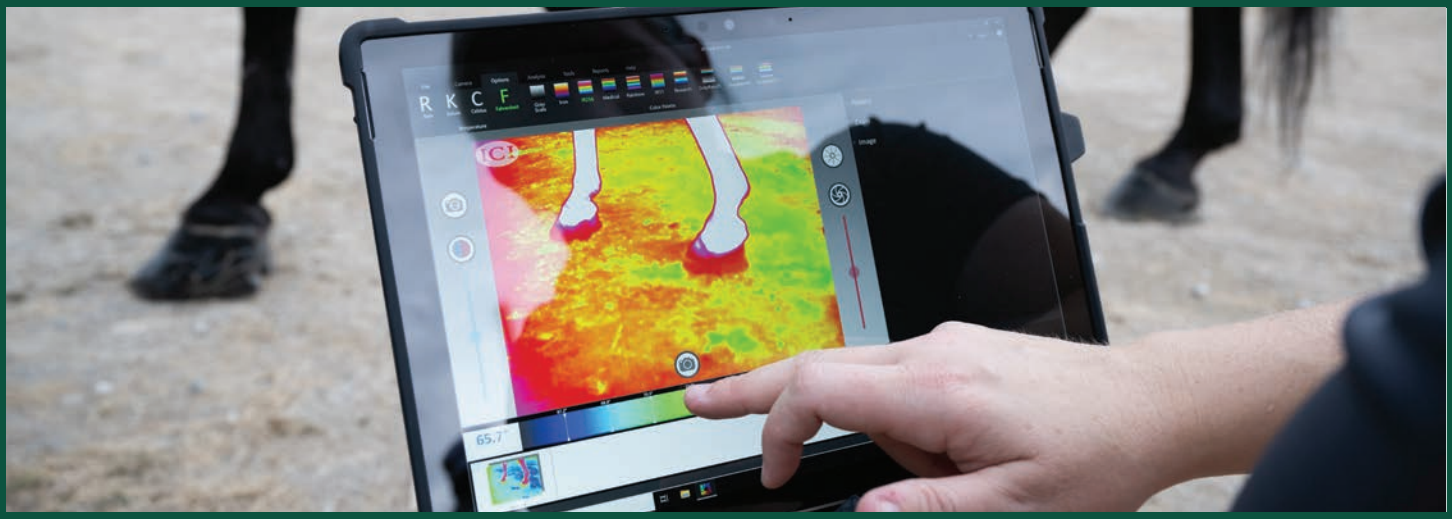
OBJECTIVE 4.2

Make our data more accessible to promote in-house AI exploration while maintaining robust data protections.

Key Actions:

- Continue to build the partnership between the CAIO, the Chief Information Security Officer (CISO), and the Chief Privacy Officer.
- Standardize and make transparent USDA's data sharing and access processes, in alignment with the priorities detailed in Objective 4.2 in the USDA FY24–26 Data Strategy.
- Maintain data protection standards, secure PII, and prevent USDA data from leaking into public AI models.

Goal 5: Ethical, Equitable, and Responsible Use of AI



USDA will adopt and adapt AI policies and risk-based frameworks that protect human rights, health, and safety and mitigate risks through transparency, accountability, and inclusivity.

USDA is committed to the ethical, equitable, and responsible development and adoption of AI, meaning we will mitigate bias, ensure legal compliance, promote transparency, understand environmental impacts, protect data privacy, build public trust, and provide societal benefits with our AI use. Specifically, we will integrate risk management controls into AI development and adoption to minimize potential bias at each stage of the AI lifecycle.

We will adapt the AI Risk Management Framework proposed by the National Institute of Standards and Technology (NIST) to meet USDA-specific needs and ensure our oversight matches the varying level of potential risks based on program or type of data. We will periodically reassess this framework to make sure we respond to the evolving technology landscape. Additionally, we will continue to ensure compliance with federal AI Inventory requirements and identify whether any use cases are rights-impacting, safety-impacting, or both. We will promote training and best practices for the practitioners who will serve as our "humans in the loop." We will also work with partners to provide consistent opportunities for feedback and input across the AI lifecycle, including meeting statutory requirements for state, local, tribal, and territorial (SLTT) use of artificial intelligence for public benefit administration. In addition to upskilling our federal staff and responding to feedback from our partners, we will refine and continuously update procurement guidance to ensure vendors comply with USDA's requirements for ethics, integrity, and bias protections, especially for higher-risk AI applications like GenAI.

As we scale our AI capabilities, we will simultaneously scale our risk frameworks, governance, and training to evolve with changing needs, preserve public trust in our AI use, and meet USDA's civil rights and environmental sustainability commitments.

Key FY24 Accomplishments

- Served on the Federal CAIO Council working groups
- Carried out market research for ethical AI training aimed at the Generative AI Review Board and USDA leadership
- Set up an AI Red Team resource to assist with Generative AI deployments
- Adopted the MITRE AI Maturity Model
- Published the Framework for State, Local, Tribal, and Territorial Use of Artificial Intelligence for Public Benefit Administration
- Supported five USDA National Institute of Food and Agriculture (NIFA) agriculture AI Institutes to advance knowledge of trustworthy AI, invest in rural economies, expand and diversify the AI workforce, and grow human-AI collaboration via multi-stakeholder partnerships

Goal 5: Ethical, Equitable, and Responsible Use of AI

USDA will adopt and adapt AI policies and risk-based frameworks that protect human rights, health, and safety and mitigate risks through transparency, accountability, and inclusivity.

OBJECTIVE 5.1

Ensure proper risk frameworks and human oversight are in place across the AI lifecycle to evaluate and mitigate potential bias and undesirable outcomes.

Key Actions:

- Integrate the NIST AI Risk Management Framework into Departmental and Mission Area governance processes and tailor this Framework to our unique AI needs in consultation with diverse perspectives, with the understanding that the Framework will be updated as technology and needs evolve.
- Provide guidance and training to staff on how to use a risk-based approach in determining whether AI use cases meet USDA's minimum risk management practices, with special consideration given to mitigating bias in models that may affect underserved communities.
- Collaborate with Federal agencies and SLTT stakeholders to encourage the appropriate use of AI in public benefit administration.

OBJECTIVE 5.2

Monitor industry developments and vendors' use of AI to prevent improper use and ensure federal and departmental policy compliance.

Key Actions:

- Work with vendors to protect USDA data, especially PII, and proactively address any impacts related to ethics, integrity, and bias.
- Work with procurement and IT staff to incorporate standardized contract language in service and supply contracts to uphold USDA AI policies.
- Create a process to review Generative AI in commercial software and continue to update our processes and policies as needed.
- Educate contracting officers on industry developments in AI to assist with holistic AI contract reviews and actions.
- Encourage vendors to adopt minimum standard feature sets from NIST and USDA.

OBJECTIVE 5.3

Partner with stakeholders to create feedback loops, leverage cutting-edge tools, and continually improve our use of AI.

Key Actions:

- Develop feedback mechanisms to continuously refine our AI products with input from our internal and external stakeholders, including the public.
- Partner with our Customer Experience community to ensure a "customer-first mindset" when identifying bias and inaccuracies in AI models throughout the AI lifecycle.
- Explore the use of "bias bounties" where users hunt for errors or bias in our models and report issues, thus incentivizing the inclusive and collaborative improvement of our AI models.
- Expand our network of internal testers to crowdsource red team reviews and improve our capacity for continuous testing and development.
- Partner with the USDA cybersecurity community to leverage their cutting-edge tools and concepts for feedback and automated testing in the AI space.

AI Spotlight – AI Use Case Inventory

USDA has a long track record of developing, using, and transparently tracking AI to support our research, operations, and mission-delivery agendas. Last year, USDA included 40+ active use cases in our AI Inventory ranging from the Animal and Plant Health Inspection Service's predictive modeling of invasive pest species to the Natural Resources Conservation Service's water supply forecasting to the Office of the Chief Information Officer's intelligent routing of service requests, and many more. The AI Center of Excellence (CoE), with active members across USDA, built out and maintains an internal site that links to the Inventory, provides USDA-specific guidance and definitions from relevant policies and pertinent executive orders, answers FAQs, and even launched an interactive internal dashboard to help users quickly identify and track AI use.

Conclusion

Our inaugural AI Strategy sets a vision to take advantage of AI opportunities and leverage the vast potential of AI to support USDA's continued delivery of high-quality benefits and services to the American public. We are committed to AI-enabling investments because we see AI as a technology that can radically expand our mission delivery by improving both our back-end operations and customer experience. We see a future where AI continues to augment our existing analytics capabilities to optimize resource allocation, drive process improvements, and streamline data management across our programs; a future where employees can save time in repetitive tasks to focus on higher-order priorities; a future where we can more accurately predict and proactively respond to environmental and agricultural trends like disease outbreaks and wildfires. In short, we see a future where AI augments our ability to steward the resources and serve the people of this nation.

While practitioners across USDA have successfully used traditional AI capabilities for many years, we are now entering an age of GenAI that requires new investment in our human and technological capacity. In response to these technological advances, our Strategy aims to provide a common vision that our AI practitioners and stakeholders can use to navigate the rapidly evolving technological landscape while safely and responsibly delivering our mission.

In the coming months, we will translate the goals and objectives in this Strategy into an implementation roadmap that builds upon our recent successes. We look forward to transparently sharing our progress throughout this journey. Specifically, the USDA Chief AI Officer will work with Mission Areas to cascade this strategy down across the organization in the form of either Mission Area AI strategies or implementation roadmaps. USDA will continue empowering our AI governance structures and naming Assistant Chief AI Officers across Mission Areas and Staff Offices to lead the implementation of this strategy and initiate program-specific efforts to meet their unique needs.

We will focus our efforts on ensuring practitioners have access to the governance structures, training resources, and tools they need, and have the necessary support to responsibly plan, deploy, and oversee AI use cases while mitigating bias. Specifically, we will work with the National Institute of Standards and Technology (NIST) and other federal agencies to identify best practices in responsible AI, adapt to evolving technologies and frameworks, and continue to protect our workforce and stakeholders from potential bias. To do so, we will leverage our AI Lab to test potential innovations and inform policy and procedures. We will build red teams, engage with our partners and the public to collect continuous feedback, and follow risk-based frameworks to ensure AI use cases are fit for purpose.

The collaborative nature of our Strategy development and implementation plan will help us to develop a comprehensive foundation for AI at USDA, inclusive of traditional AI, advanced analytics, machine learning, and generative AI, supportive of both AI practitioners and consumers.

Acknowledgments

This document could not have been created without the invaluable contributions and inputs from over 200 stakeholders representing every Mission Area and Departmental Administration / Staff Office, as well as unwavering support from USDA's leadership. We would like to especially thank our 57 AI Strategy Taskforce members who worked tirelessly over the last several months to build consensus and help shape the vision for this strategy and who will play instrumental roles in ensuring its success over the next two years.

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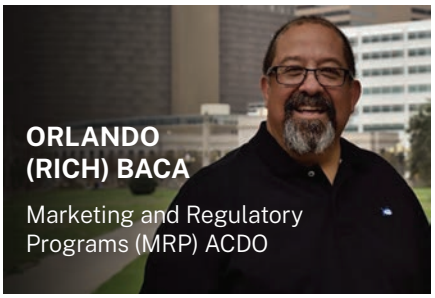

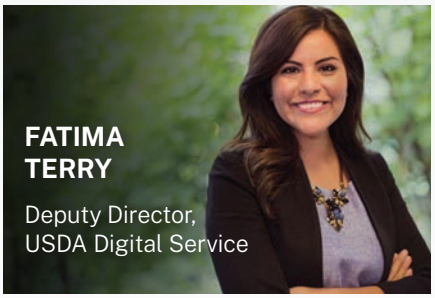

Contact Information and Accessibility

For more information or questions regarding this plan, please contact: **askusda@usda.gov**

Additional copies of this Strategic Plan can be downloaded from USDA's Web site at: **www.usda.gov /ai**

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Appendix

1. Definitions of Key Terms

Term	Definition	Source
Artificial intelligence	A machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. Artificial intelligence systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action.	See definitions in both the Executive Order 14110 and in OMB M–24–10
AI and AI-enabling roles	Individuals with positions and major duties whose contributions are important for successful and responsible AI outcomes. AI and AI-Enabling Roles include both technical and non-technical roles, such as data scientists, software engineers, data engineers, data governance specialists, statisticians, machine learning engineers, applied scientists, designers, economists, operations researchers, product managers, policy analysts, program managers, behavioral and social scientists, customer experience strategists, human resource specialists, contracting officials, managers, and attorneys.	OMB M–24–10
AI model	A component of an information system that implements AI technology and uses computational, statistical, or machine-learning techniques to produce outputs from a given set of inputs.	Executive Order 14110, Section 3
Data Science Training Program	A 9-month program providing USDA staff an environment to learn data science skills. The program offers curated learning tracks in an e-learning platform, monthly USDA exercises and review sessions, guest lectures and workshops, facilitator support through office hours, one-on-one help, and mentorship, and a capstone project.	USDA definition
Generative AI	The class of AI models that emulate the structure and characteristics of input data in order to generate derived synthetic content. This can include images, videos, audio, text, and other digital content.	OMB M–24–10
Infrastructure	The hardware, software, and network resources involved in information technology operations. This serves as the technological foundation of our computing, networking, and digital operations. Infrastructure includes but is not limited to servers (on premise and cloud), databases (including transactional), and devices.	USDA definition
Platform	The software-based environments sitting on the technological infrastructure that facilitate the development, deployment, and management of data systems, applications, tools, and services. Platform includes analytical components, transactional entities, tools, libraries, application programming interfaces, and Extract, Transform, Load tools.	USDA definition
Responsible AI	AI that: a. Has the potential to help solve urgent challenges while making our world more prosperous, productive, innovative, and secure. b. Mitigates societal harms such as fraud, discrimination, bias, and disinformation; displace and disempower workers; stifle competition; and pose risks to national security.	Executive Order 14110, Section 1

Appendix

2. AI Strategy Methodology & Overview of USDA's AI Maturity Assessment

Since being appointed, the USDA Chief AI Officer (CAIO) engaged with fellow CAIOs through the Federal CAIO Council and shared challenges, successes, and best practices around AI, construction of an AI strategy, as well as CAIO priorities and advice. In development of this Strategy, hundreds of AI stakeholders across USDA assisted efforts through several methods of consultation and conversation. Their inputs helped to ground USDA's vision and goals and shape achievable objectives and actions that will ground and support our current and future AI capabilities. To arrive at the goals, objectives, and action in this Strategy, our process involved:

1. Engaging in a benchmarking assessment to review peer Agencies' AI strategies.
2. Reviewing and aligning with recent Executive Orders, OMB M–24–10, the USDA Strategic Plan, and internal plans and strategies to refine this Strategy's goals and objectives.
3. Conducting a current state maturity assessment, which gathered 110 responses from AI stakeholders to a survey aligned with the MITRE AI Maturity Model.
4. Hosting current state assessment and future state visioning workshops with 13 Departmental Administration and Staff Offices, every USDA Mission Area, USDA's AI Center of Excellence, USDA's Cloud Working Group, etc., representing over 210 USDA stakeholders.
5. Convening a taskforce of 57 key AI stakeholders representing USDA Mission Areas and expertise spanning data, IT, procurement, legal, civil rights, human resources, etc. to draft and review goals and objectives.

Our consultative approach placed a heavy emphasis on considering the benefits and risks AI in its current and future state of use at USDA. Our internal assessment highlighted significant interest in AI for operational and programmatic applications and indicated some current use of AI. Departmental and Mission Area stakeholders prioritized a clear, shared governance framework and a common AI training curriculum. AI is one of many tools in USDA's toolbox to generate insights and operational efficiencies. While there is significant interest in AI and its potential to improve mission delivery, stakeholders also highlighted the need to first understand tool options and infrastructure needs, recruit and retain AI-skilled staff, and address data quality concerns.

The FY25–26 USDA AI Strategy builds on these priorities and will inform governance and risk management practices, support innovation and use case research and development, expand transparency and enable us to meet federal requirements more easily and facilitate collaboration and resource sharing with internal and external partners.

Appendix

3. References

Relevant Federal Guidance

- Executive Order 14110 (Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence)
- Office of Management and Budget M–24–10 (Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence)
- Foundations for Evidence-Based Policymaking Act of 2018 ("Evidence Act")
- Office of Management and Budget M–23–22 (Delivering a Digital-First Public Experience)
- Government-wide Hiring Authorities for Advancing Federal Government Use of Artificial Intelligence (AI)

Relevant USDA Strategies and Resources

- FY24–26 USDA Data Strategy
- FY22–26 USDA Strategic Plan
- FY23–26 USDA Science and Research Strategy
- FY22–26 USDA IT Strategic Plan
- FY23–26 USDA IT Workforce Strategic Plan
- USDA AI Inventory
- FNS Framework for State, Local, Tribal, and Territorial Use of Artificial Intelligence for Public Benefit Administration

Relevant Federal Guidance

- National Institute of Standards and Technology (NIST) AI Risk Management Framework
- MITRE AI Maturity Model
- General Services Administration (GSA) US Digital Corps
- USDA Pathways Program
- Virtual Student Federal Service
- Women In Data – 2023 Datathon