



# AI Strategy

September 2025





## *Message from the Secretary of Agriculture*

“The U.S. Department of Agriculture (USDA) has a unique obligation to embrace the nation’s technological prowess for the benefit of American farmers, ranchers, and communities, a move which will help us achieve greatness in our service to the American people and the agricultural sector. Cutting-edge data and technology enable USDA to provide first-class service to the farmers and ranchers that feed and serve all Americans. Each American life is impacted by USDA’s efforts, ranging from producers to consumers, across rural and urban communities. Whether in deploying disaster relief or addressing animal-disease outbreaks, our commitment to efficiency and productivity must remain at the forefront of USDA’s operations and mission.

That is why I take pride in introducing USDA’s first comprehensive strategy for artificial intelligence (AI), our gateway to create innovative and efficient solutions for American agriculture. Guided by President Trump’s Executive Order on Removing Barriers to American Leadership in Artificial Intelligence, this strategy will build the foundation for USDA to meaningfully increase the efficiency and effectiveness of our workforce and expand our capabilities to harness the power and potential of AI.

Innovation is mission-critical here at USDA, and this strategy recognizes the transformative capacity of AI to support American agriculture. AI will have an outsized impact in the programs our Mission Areas deliver to support the American people: ranging from fraud and improper payments detection to loan modernization, from food production and resilience to wildfire risk reduction, from national security to meat grading. USDA’s AI Strategy for Fiscal Years 2026 – 2027 will build a clear and collaborative roadmap to harness advanced technologies that support data-informed decision-making, improve our efficiency, and enhance our ability to serve the American people.

While USDA has used AI for some time, this strategy champions innovation and prioritizes efficiency in unprecedented ways. I am wholeheartedly dedicated to bolstering USDA’s AI innovation and remain confident that our embrace of this technology will strengthen the power of American agriculture for generations to come.”

*Brooke L. Rollins*  
Secretary  
U.S. Department of Agriculture



## *Message from the USDA Chief Data & AI Officer*

“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 use AI, increase operational efficiency, improve productivity, 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 trusted and scalable AI use. USDA further commits to designing and deploying AI strategically, in ways that respect privacy and safeguard data, so that USDA employees and the American people can benefit from the opportunities that AI can provide.

This strategy could not have been created without collaboration and invaluable input from stakeholders representing every USDA Mission Area and key departmental functions including, but not limited to: data, program delivery, procurement, human resources, cybersecurity, legal, records management, 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) drives economic opportunity, promotes agricultural production, and preserves natural resources through innovation. AI will enhance these missions and operations with greater efficiency and insights. The FY26–27 USDA AI Strategy, aligned with OMB M-25-21, outlines a mission-driven plan based on stakeholder consultations and the USDA AI Current State Assessment (MITRE methodology).

This strategy lays out critical focus areas where we will prioritize integrating AI into our mission and programs including, but not limited to, food production and resilience, natural disaster response and recovery, loan modernization, national security and safety, and fraud, waste, and abuse. Progress will be centered around five goals: AI-ready workforce, AI-enabling infrastructure, high quality data, trust and scalability, and governance and risk management.

## **Vision Statement**

USDA will build a robust AI-ready workforce, governance, and infrastructure to integrate AI into mission delivery, enhancing services nationwide. Over the next two years, USDA aims to lead in federal AI adoption by training and recruiting talent, collaborating with partners like universities and NIST, and using AI to empower employees, not replace them. The Chief AI Officer will engage stakeholders to implement scalable AI systems that improve decision-making, automate processes, and boost mission outcomes, ensuring transparency and public trust.



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# Focus Area: University Partnerships

U.S. Department of Agriculture – AI Strategy



USDA's partnerships with academic institutions deliver innovative, low-cost ideas that advance its mission to support farmers, ranchers, and communities. Universities provide ideal environments for AI experimentation, allowing pilots to mature with minimal financial strain on USDA. Benefits include scaling tested AI solutions via USDA's data governance and infrastructure, while fostering long-term ties that attract new AI talent.

These collaborations occur via two main formats: hackathons, which crowdsource short-term solutions from large student groups for mission-critical challenges, and university engagements, involving small teams in extended solution development.

USDA hackathons yield high-quality solutions to real-world issues. The 2025 event united USDA, NASA, GSA's Digital Corps, Amazon Web Services, and over 100 students to tackle complex agricultural AI challenges. In 24 hours, teams produced advanced models, delivering deployable code and prototypes.

USDA's collaboration with the Hack Midwest hackathon explored an AI-powered AskUSDA chatbot using Amazon Web Services for scalable, secure public queries. Involving ~350 students from 20 universities, six teams built high-performing prototypes in 24 hours at low cost, enhancing user experience.

Through the University of Florida's computer science capstone program, USDA gains recurring AI solutions in Machine Learning and areas like Natural Language Processing and computer vision to modernize operations. This has delivered multiple operational models.

University partnerships have led to:

- Automating mapping of uncharted National Forest System roads
- Computer vision for rover maneuvering
- Machine Learning for predicting meat grading scores
- Large Learning Model chatbot development
- Public comments analysis model to track public engagement and improve response time
- Computer vision model to analyze cattle muscle and frame scoring
- Forest Service recreational information search engine



# Focus Area: Commodities Grading

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“AI shows high accuracy in evaluating ribeye images like a human grader.”

USDA provides essential meat grading services, enabling beef packers to earn premiums for higher-quality cuts. However, on-site grading—where USDA staff travel at the producer’s expense—limits access for smaller operations.

The Remote Grading Program (RGP) has already expanded access and cut costs by allowing packers to submit ribeye images for next-day remote evaluation. Now, the Agricultural Marketing Service (AMS) is integrating AI to further reduce barriers. When paired with strong data practices and imaging tech, AI shows high accuracy in evaluating ribeye images like a human grader.

A USDA-Colorado State University hackathon proved this potential: students built high-performing AI models in 24 hours using AMS training data, delivering a business case for broader adoption. AMS also grades cotton, grains, and other commodities and plans to apply AI where feasible.

This AI-imaging approach can transform U.S. grading by making services accessible to smaller producers. The CSU partnership produced working prototypes at near-zero cost in days. USDA will scale AI across AMS grading programs starting in FY26.

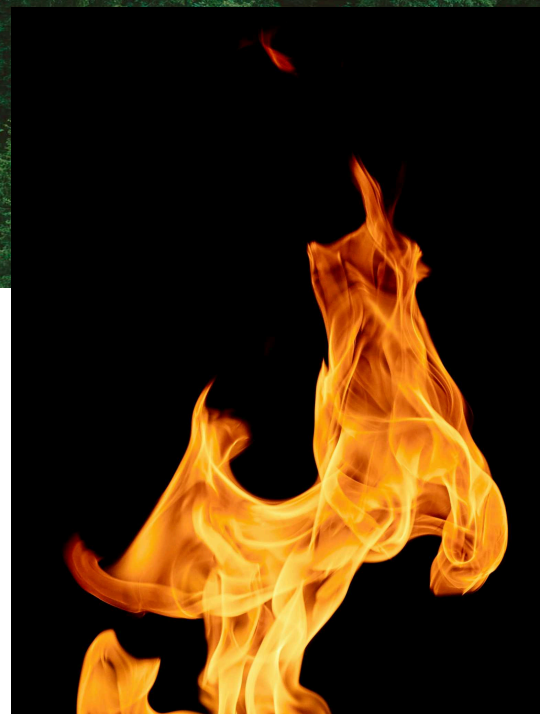


# Focus Area: Forest Health and Wildfire Prevention

U.S. Department of Agriculture – AI Strategy

At the USDA Forest Service, AI is strengthening public service by advancing land stewardship and community safety, with key impacts in wildland fire management and timber production. In support of Executive Order 14308 on wildfire prevention, AI enhances early detection, fire behavior modeling, fuel treatment mapping, and real-time fire weather forecasting. These tools improve suppression safety, post-fire recovery, and long-term forest health while reducing wildfire costs to taxpayers.

Under Executive Order 14225 on timber production, AI analyzes Forest Inventory and Analysis data and remote sensing to map forest area, volume, and fuels; assess storm damage; and support emergency response. AI also detects insect and disease outbreaks, tracks canopy changes, and forecasts habitat shifts—driving smarter forest management and higher productivity. Moving forward, the Forest Service is aligning AI efforts across fire and timber programs to share data and solutions. AI is proving a vital public tool—making forests safer, healthier, more productive, and accessible to all.





# Focus Area: Agricultural Stability

U.S. Department of Agriculture – AI Strategy



The USDA is using artificial intelligence to analyze the food and agriculture supply chain to identify risks and vulnerabilities. This includes investing in AI for pest identification to protect the domestic food supply from invasive species.

The USDA will also apply AI and machine learning to enhance analytics of land ownership to better understand foreign ownership of agricultural lands.

USDA will continue investing in AI-powered research to transform agriculture. By analyzing genetic, environmental, and health data, AI uncovers insights beyond human reach, enabling smarter decisions, faster pathogen detection, and more resilient crops and livestock.

Through AI, USDA will strengthen food safety, protect the food supply chain, and build a sustainable, nutritious supply-empowering farmers and ranchers to meet modern challenges.



# Focus Area:

## Food Production and Resilience

U.S. Department of Agriculture – AI Strategy



The United States is a leader in feeding the world and USDA has a central role in promoting agriculture production that better nourishes Americans while also helping feed others throughout the world. But farmers face significant challenges. Pests and diseases continue to threaten harvests and animal health, while the demand for food rises with a growing global population. It is estimated that 48 million Americans get sick from a foodborne illness each year.\* Farmers, ranchers and producers must navigate these obstacles while striving to make the best use of available resources and ensure long-term sustainability. The U.S. must continue to innovate and adopt technology that drives sustainable food production and a safe food supply.

USDA has invested heavily in scientific research that contributes to improvements in agriculture and food production. By analyzing vast amounts of data, identifying patterns, and making predictions, artificial intelligence can help farmers and ranchers make smarter decisions. Machine learning can process complex information like genetic data, environmental conditions, and

animal health indicators to uncover insights that would be very hard to detect by other means. Artificial intelligence can also assist in the complex process of detecting foodborne illness and identifying the cause or source. This technology has the potential to revolutionize agriculture, making it safer, more productive, efficient, and sustainable.

USDA will harness the power of artificial intelligence to advance agricultural research, improving productivity in crop farming and ranching. By applying AI to genetic studies and other agricultural research areas, we can develop crops that are more resilient to drought, pests, and diseases; livestock that are healthier, stronger, and more productive; and a food supply that is safer and more nutritious. This approach will empower farmers and ranchers to overcome challenges faced by modern agriculture.

\* <https://www.cdc.gov/food-safety/about/index.html>



# Focus Area: Fraud and Improper Payments

U.S. Department of Agriculture – AI Strategy

USDA provides billions of dollars in assistance. For example, Rural Development (RD) provides loans, grants and loan guarantees for family housing, fire and police stations, hospitals, libraries, schools, first responder vehicles and equipment and more. The Farm Service Agency (FSA) offers financial support to farmers and ranchers through various farm programs. The Food and Nutrition Service (FNS) provides several nutrition assistance programs with the Supplemental Nutrition Assistance Program (SNAP) being the largest with billions of dollars in assistance supporting nearly 1 in 8 Americans.

Detecting fraud and other types of improper payments has been challenging but is a critical activity in reducing error rates and driving efficiency. Ensuring that taxpayer dollars go only to those eligible is a priority of USDA.

USDA will pursue applications of artificial intelligence and machine learning to improve the detection of improper payments and increase the integrity of our financial programs. This includes exploring the use of AI to improve the detection of inaccurate information in the loan application process. AI will not be used to make final loan decisions and USDA will have a human in the loop to review AI findings.

“Protecting taxpayer dollars: AI spots fraud, humans decide the action.”





# Focus Area: Loan Modernization

U.S. Department of Agriculture – AI Strategy



Over decades, USDA has developed numerous systems to deliver a wide range of loan programs for several agencies within USDA. This has resulted in a complex collection of applications and datasets that are hard to operate, difficult to integrate, and built on various aging technology. None of those systems leverage artificial intelligence today.

Addressing this technical debt and adopting a modernized loan platform creates opportunities for adopting artificial intelligence in ways that improve the loan experience both for the customer and USDA's loan processing staff. Artificial intelligence can improve the loan-making process by automating tasks, improving the customer's experience, assisting in the origination and underwriting processes, and other areas of the loan process. Automation could reduce the time it takes for an applicant to submit an application or for USDA to review or process a loan application.

AI could help customers determine what loan options are available to them, answer questions about the application process and get information about the status of their application. AI could also assist in the underwriting process, aiding USDA staff in evaluating risk.

As USDA seeks to modernize its loan systems, the specific uses for artificial intelligence in the loan process will be carefully evaluated and considered. Foremost in this focus area will be an emphasis on maintaining public trust in the federal use of AI. Where the application of AI is determined to be "high-impact,"\*\* USDA will conduct the necessary assessments, testing, monitoring, and human oversight called for in OMB M-25-21 and related federal guidance.

\*\* See Sections 4 & 6 of  
<https://www.whitehouse.gov/wp-content/uploads/2025/02/M-25-21-Accelerating-Federal-Use-of-AI-through-Innovation-Governance-and-Public-Trust.pdf>



**1 Workforce Readiness for AI** USDA will develop an AI-skilled workforce through academic partnerships, prioritizing AI in 4-H and Cooperative Extension curricula per Executive Order 14277, and supporting the White House Task Force on AI Education. Assessments identified insufficient AI training as the primary barrier, prompting USDA to offer foundational AI literacy, expand the Data Science Training Program, leverage the AI Center of Excellence, and clarify AI policies to foster innovation while keeping humans central to AI processes.

- Support the AI Center of Excellence and host hackathons to crowdsource solutions.
- Develop AI talent management frameworks and focus on early career programs, including virtual hiring fairs.
- Expand AI training for all skill levels and enhance the Data Science Training Program for real-world AI projects.
- Define AI roles, track workforce progress, and consult employees on AI's impact.

**2 AI Infrastructure and Toolset** USDA will invest in secure, scalable AI infrastructure, addressing gaps in data infrastructure and technology acquisition identified in the AI Current State Assessment. Priorities include centralized tools like the USDA AI Lab, enhancing the Enterprise Data Analytics Platform, and standardizing AI procurement for cost-effective, trustworthy solutions.

- Implement enterprise AI tools, promote the USDA AI Lab, and enhance the Enterprise Data Analytics Platform.
- Develop AI procurement guides and maintain an approved tools inventory.
- Focus on high-impact AI projects, encouraging shared investments.

**3 Data Readiness and Access** USDA will ensure data readiness for AI by improving data quality, access, and stewardship per the USDA Data Strategy and Evidence Act. This includes standardizing data sharing, protecting sensitive data, and using synthetic data to enable secure AI innovation.

- Develop data classification guidelines and use AI to improve internal data management.
- Standardize data sharing processes while securing PII and preventing data leaks.
- Enforce data access and privacy policies in contracts, standardizing language for ownership and security.

**4 Trusted and Scalable AI** USDA will adopt NIST's AI Risk Management Framework to ensure trustworthy AI, addressing assessment findings that only 15% of stakeholders enforce risk controls. This includes standardizing policies, training for human oversight, and monitoring vendor AI use.

- Integrate NIST's framework for traceability and provide risk management training.
- Incorporate AI policy compliance in contracts and review GenAI in commercial software.
- Develop feedback mechanisms and partner with cybersecurity teams for AI testing.

**5 AI Governance and Leadership** USDA's AI leadership will establish a transparent governance framework to foster innovation and collaboration, addressing stakeholder needs for streamlined processes and clear roles. This includes risk-based evaluations and partnerships to enhance AI outcomes.

- Strengthen governance structures and update AI guidance for clear decision-making.
- Deploy risk-based evaluation frameworks and track AI use cases via the USDA AI Inventory.
- Collaborate with government, academic, and private sectors for impactful AI use.





## Conclusion

USDA's AI Strategy charts a bold vision to harness AI's potential, enhancing mission delivery and public service. AI will optimize back-end operations, streamline data management, and improve customer experience—freeing employees from routine tasks to focus on serving farmers, ranchers, and communities. From predicting disease outbreaks to reducing wildfire risk and modernizing loans, AI will augment analytics, drive efficiency, and strengthen resource stewardship.

While USDA has long used traditional AI, today's advances demand new investment in talent and technology. This strategy provides a unified roadmap, with clear priorities in fraud prevention, food resilience, disaster recovery, national security, and commodity grading. In the coming months, the Chief AI Officer will partner with Mission Areas to develop tailored AI strategies and implementation plans.

Through collaboration, we will build a robust AI foundation—supporting practitioners and beneficiaries alike with traditional AI, machine learning, and emerging capabilities. Together, we will deliver smarter, faster, and more impactful service to the American people.

## Contact

For more information or questions regarding this plan, please contact: [askusda@usda.gov](mailto:askusda@usda.gov)

Additional copies of this Strategic Plan can be downloaded from USDA's Web site at: [www.usda.gov/ai](http://www.usda.gov/ai)