BREAKTHROUGH INSTITUTE

SECURING GLOBAL AGRICULTURAL LEADERSHIP

A POLICY ROADMAP FOR AMERICAN AGRICULTURAL DOMINANCE

OVERVIEW

American agriculture stands at a crossroads. Soaring input costs, high trade barriers, and fierce international competition has reduced farm income and contributed to the largest agricultural trade deficit the U.S. has experienced. At the same time, years of declining public investment in agricultural research and development and a patchwork of regulatory hurdles have weakened our competitive edge—as nations like China double down on innovation.

But the United States can regain its global agricultural dominance. Agricultural policy must break with the past by centering innovation and productivity—modernizing research efforts, streamlining regulations, exporting innovative U.S. goods, and redirecting funds from wasteful subsidies. The White House can push for change not only within the U.S. Department of Agriculture (USDA), but also the Food and Drug Administration (FDA), Environmental Protection Agency (EPA), Department of Energy (DOE), and the Office of the U.S. Trade Representative (USTR). Likewise, Congress should enact reforms through a new Farm Bill as soon as possible, as well as through other legislative vehicles including appropriations bills. Acting decisively today will secure a productive, resilient, and globally competitive agriculture system that cements American dominance for generations to come.

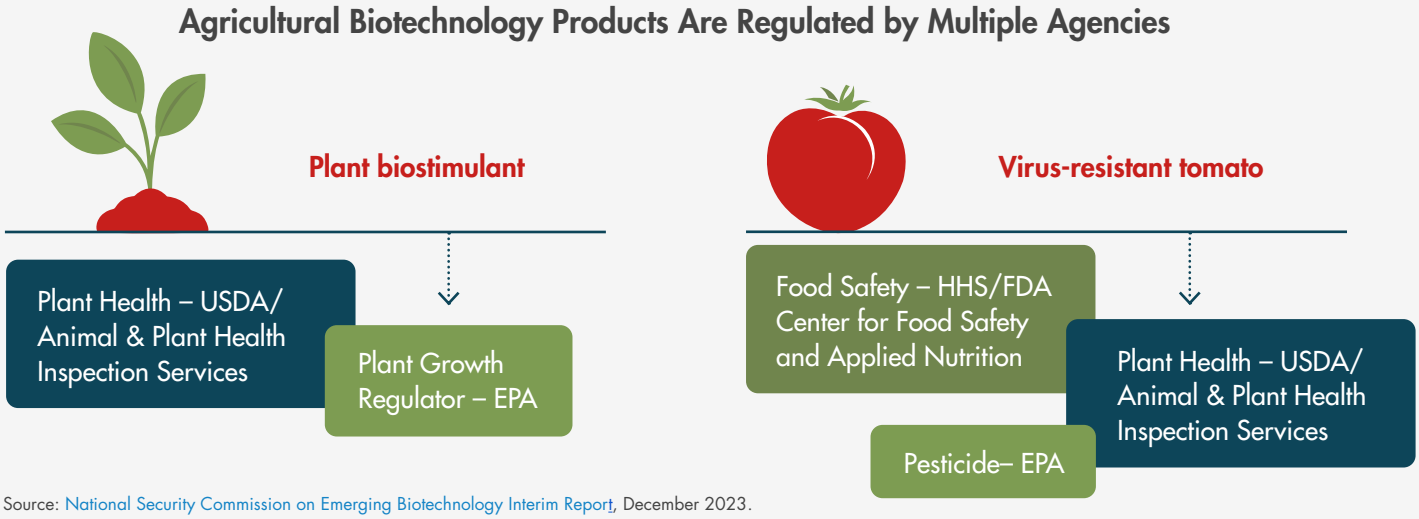
Contents

I. ACCELERATE AMERICAN AGRICULTURAL BIOTECHNOLOGY

Though the U.S. has historically been a global leader in agricultural biotechnology, we are falling behind. China published over twice as many patents and papers related to agricultural applications of CRISPR as of 2018, ramped up approvals of gene-edited crops in 2024, and issued new guidelines in 2025 to further promote gene-edited crops. While the private sector is developing new varieties faster than ever in the U.S., it often takes years for federal agencies to approve genetically engineered crops before they can reach the market. Further, many of these crops are not subject to premarket approval at all in countries like Argentina and Canada. To address this innovation bottleneck, the U.S. needs updated and streamlined biotechnology regulations.

Improve Coordination Between Federal Agencies that Regulate Biotechnology

- U.S. federal regulation of agricultural biotechnology is fragmented between USDA, EPA, and FDA, and is continually hampered by a lack of sufficient coordination between the agencies. Many products are regulated by two or three separate offices, as shown below. To address these issues, Congress should pass the *Agricultural Biotechnology Coordination Act* and the *Biotechnology Oversight Coordination Act*. These bipartisan bills would reduce duplicative efforts between USDA, EPA, and FDA, and clarify the regulatory path for smaller biotechnology developers that don't have experience navigating the system.



Source: National Security Commission on Emerging Biotechnology Interim Report, December 2023.

Streamline Biotechnology Products' Path to Market

- Development of genetically engineered disease-resistant crops is crucial for increasing the productivity and security of U.S. agriculture, but these products are currently hindered by overly restrictive EPA regulations. Congress should overturn EPA's rule on plant-incorporated pesticides (PIPs) or amend it through the next Farm Bill, more narrowly defining "plant regulator" and focusing EPA's regulation of PIPs to only those with a toxic and direct mode of action.

- A 2024 district court case vacated USDA's SECURE rule, which regulated genetically engineered organisms in agriculture, reverting to a decades-old, outdated framework. USDA should take this opportunity to create a product- and risk-based "red flag" system that applies oversight only to genetically engineered organisms that pose significant risk. This would enable USDA to focus its limited resources on high-priority cases, reduce unnecessary regulatory costs, and accelerate American biotechnology innovation. The red flag system should apply not just to genetically engineered plants but also to genetically engineered microbes, which can improve plant growth, increase resistance to pests and diseases, and reduce the need for fertilizers and pesticides.

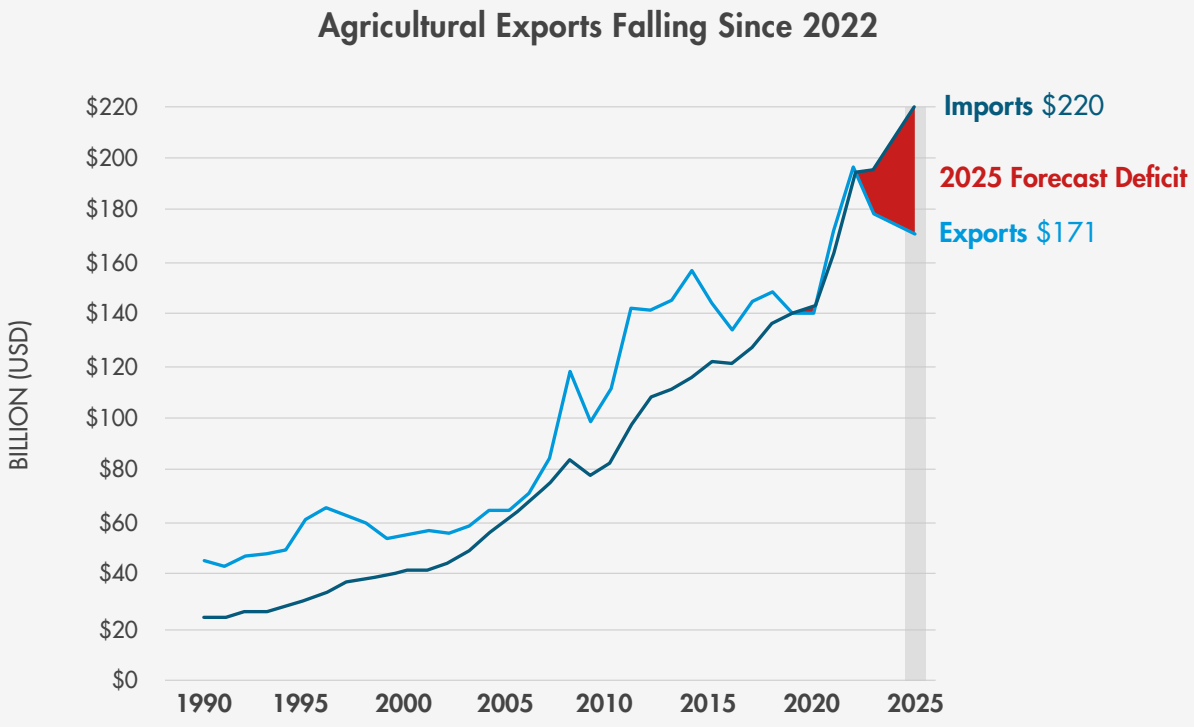
- FDA should modernize animal feed regulations to keep pace with innovation in animal nutrition science, especially in regards to new classes of feed additives that improve animal health and productivity. Congress should pass the *Innovative Feed Enhancement and Economic Development Act* which would enable FDA to establish a distinct and more efficient regulatory pathway for feed additives that cannot be classified as animal drugs.

Leverage Biotechnology to Counter Animal Disease Outbreaks

- Federal agencies should continue to counter the outbreak of avian influenza (H5N1) with existing biosecurity measures like testing and surveillance. USDA APHIS, FDA, ARPA-H, and the Biomedical Advanced Research and Development Authority should accelerate the development of H5N1 vaccines for poultry, cattle, and humans; prioritize review of vaccine candidates; and ramp up domestic vaccine manufacturing capacity. If avian or bovine vaccines are deployed, federal trade entities should negotiate with trading partners to ensure bird flu vaccination does not adversely affect trade for U.S. agricultural commodities.

II. STRENGTHEN GLOBAL COMPETITIVENESS AND TRADE

Increasing U.S. farm exports would benefit farmers, consumers in importing countries, and the environment, since U.S. producers are among the most resource-efficient. But exports have fallen since 2022, resulting in a record agricultural trade deficit of $31.8 billion in 2024 that is expected to grow in 2025. Slowing productivity growth and persistent trade barriers hinder farmers' ability to compete in fast-growing markets. At the same time, a large share of U.S. food imports come from countries with weak labor and environmental protections. To address these challenges, the U.S. should pursue a dual approach: expanding access to foreign markets for American producers while enforcing rules that ensure a level playing field and uphold high standards.



Source: USDA ERS

Leverage Trade Negotiations to Increase U.S. Agricultural Exports

- The President and the U.S. Trade Representative (USTR) should seek to reduce non-tariff barriers and pursue bilateral trade agreements to expand export markets. Major trade partners routinely impose nonscientific restrictions on agricultural imports. For example, China and the EU both ban beef with any detectable level of the growth hormone ractopamine and China's beef-export registration system acts as a de facto quota on U.S. exports. The administration should also enforce non-tariff elements of the USMCA, including Mexico's obligations to review products of agricultural biotechnology products, which it has not approved any permits for since 2019.
- The President and USTR should maintain tariff-free agricultural trade between the U.S., Mexico, and Canada under the USMCA. Mexico and Canada are the top importers of U.S. agricultural goods, projected to import $57 billion in 2025. They also are the top exporters of food to the U.S., with over $90 billion in exports projected for 2025, as well as major suppliers of critical agricultural inputs such as potash.

Enforce Trade Rules That Uphold High Standards

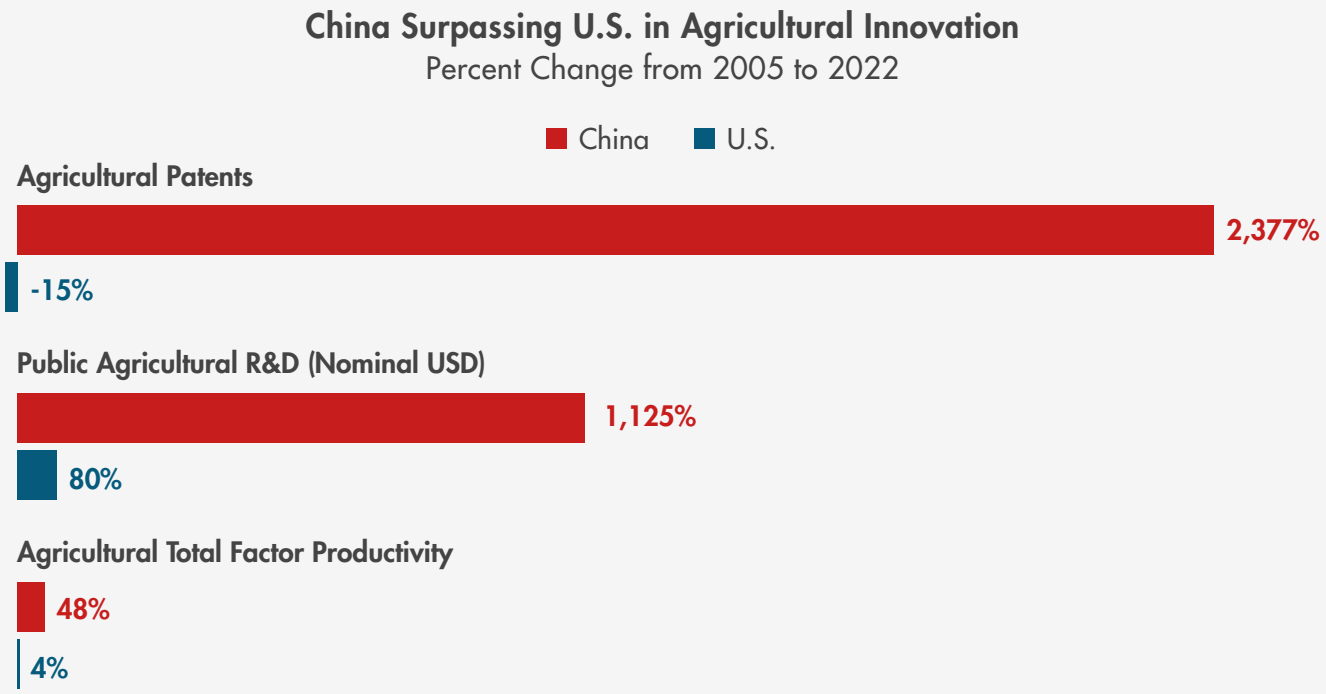
- Congress should pass the *FOREST Act*, a bipartisan bill that would ensure that agricultural imports were not produced on land that has undergone illegal deforestation.
- The President should suspend or withdraw duty-free and reduced-tariff access—provided through the General System of Preferences or similar programs—for major agricultural exporters that engage in or tolerate illegal deforestation, forced labor, IP theft, or other illicit practices. If Congress reauthorizes the Generalized System of Preferences, it should add e ligibility criteria such as provisions on human rights and environmental laws.

Counter China's Influence in Global Food Chains

- Congress should pass the *Food Supply Chain Capacity and Resiliency Act*, a bipartisan bill to reauthorize USDA's loan guarantee program that strengthens the resilience of the food supply chain and reduces dependency on adversarial nations.
- Federal agencies—including USDA, DOE, and SBA—should coordinate to invest in industries and innovations that reduce reliance on foreign agricultural inputs, such as domestic fertilizer production and development of crop varieties that require less potash or phosphate.
- The Committee on Foreign Investment in the U.S. should strengthen its efforts to monitor and block acquisitions of sensitive agricultural technologies by China and other adversarial nations.

III. BOLSTER AGRICULTURAL RESEARCH & DEVELOPMENT

Public agricultural R&D is crucial for developing foundational science that the private sector can commercialize, keeping the United States innovative. Though USDA funding for R&D has recently risen, overall public funding—including state and non-USDA federal support—has significantly declined, by about one-third since the early 2000s according to USDA. In contrast, China has significantly increased its agricultural R&D investments, now outspending the U.S. by roughly 2-to-1. Additionally, many U.S. research facilities are outdated, with a maintenance backlog of approximately $11.5 billion. This decline in public investment threatens the nation's leadership in agricultural science and technology at a time when global competitors are rapidly innovating.



Sources: OECD (2025); USDA ERS (2024); Anwer, Padmaja & Kandpal (2023)

Spur Private Sector and non-Federal R&D

- Congress should continue to fund the Foundation for Food and Agriculture Research (FFAR) in the next Farm Bill. Established by the 2014 Farm Bill, FFAR partners with industry, universities, and other organizations to fund research that directly addresses pressing agricultural challenges. FFAR maximizes taxpayer impact by leveraging about $1.40 in non-federal contributions for every $1 in federal funding and by prioritizing research that is user-driven. A large share of FFAR projects generate actionable tools for farmers and agribusiness, accelerating advances in crop breeding, livestock health, and precision agriculture.

- USDA and Congress should identify ways to better leverage non-federal funding across programs. A 2017 report found that USDA's capacity (or formula) grants to land-grant universities, experiment stations, and Cooperative Extension Services leverage $1.86 in non-federal funds for every $1 in federal funding, more than the 1-to-1 match required by some USDA National Institute of Food and Agriculture (NIFA) programs. Changes in the allocation of funding between research programs as well as changes in program rules could leverage more funding from non-federal sources including states, which have recently decreased their R&D funding.

Make Federal R&D Spending More Efficient and Effective

- Congress should fund and USDA should launch the Agriculture Advanced Research and Development Authority (AgARDA). Modeled after the Defense Advanced Research Projects Agency (DARPA), it would prioritize high-risk, high-reward "moonshot" projects that are poorly suited for the private sector, but that could dramatically benefit U.S. agriculture in the long-term. Example moonshots include:

    - Counter and prevent disease outbreaks: Emerging pest and disease pressures, like avian influenza, can reduce food availability, increase prices, and cause substantial economic losses across animal agriculture industries each year. Research to develop new diagnostic measures, improve sanitation or biosecurity methods, or leverage genetic engineering to breed disease-resistant animals could improve prevention and rapid-response to new and evolving diseases.

    - Cut crop losses from pests in half: For example, U.S. wheat yields are about 50% lower than they could be, a much larger yield gap than for corn or soy. This is, in large part, due to pests such as Fusarium head blight and wheat stem sawfly that could be controlled through breeding, biotechnology, and RNA pesticides.

- Improve cattle feed efficiency: Microbes in the stomach of cattle convert roughly 6% of the energy consumed into methane. This loss of energy is potentially avoidable through breeding, feed additives, or developing a vaccine that targets the microbes.

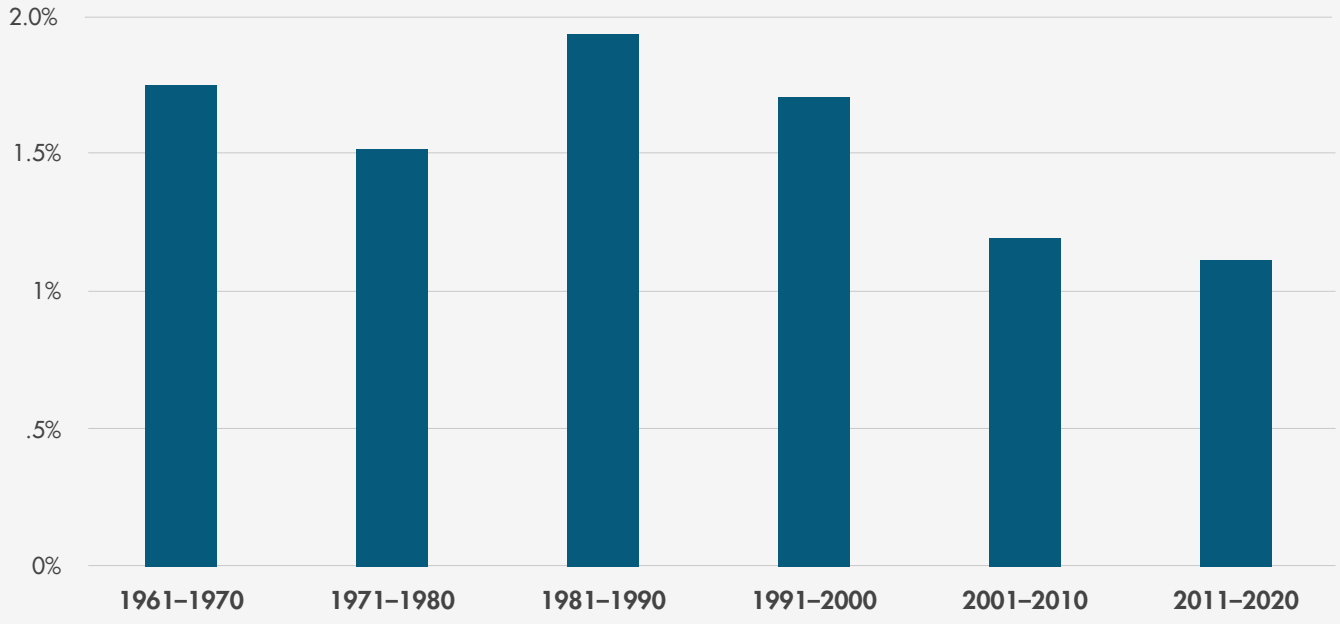
- Congress should provide funding, to be matched by state or private sector funding, to start addressing the maintenance backlog at colleges and schools of agriculture. Researchers require modern, well-functioning labs, greenhouses, experimental farms, and other facilities to make the best use of research funds, enter partnerships with the private sector, and compete with scientists internationally.

IV. REDIRECT INEFFECTIVE SUBSIDIES TO INNOVATION

Many federal programs reward farm conservation practices that unintentionally constrain yields and food production. Yet increasing yields and overall farm productivity is more important than ever to meet rising global food demand, control food price inflation, and limit agricultural deforestation in other countries. Reallocating funding from yield-limiting practices toward productivity-enhancing research and technology adoption would better achieve both food security and environmental objectives.

Agricultural Productivity Growth has Slowed

Average Annual Percent Growth in U.S. Agricultural Total Factor Productivity



Source: USDA ERS

- Federal agencies and Congress should phase out subsidies for farming practices that reduce yields such as cover crops and organic farming, reallocating funds to practices and programs that improve productivity.
- EPA's recent Triennial Report to Congress on biofuels finds that the Renewable Fuel Standard (RFS) has had a "likely modest but negative" effect on the environment and increased corn and soy prices, and thereby slightly increasing meat and dairy prices. EPA should minimize its 2026—27 RFS Renewable Volume Obligations. Congress should repeal subsidies for first generation crop-based biofuels such as corn ethanol that have received tens of billions of dollars in federal support over decades and are now well-developed technologies, instead reallocating funds to support farmers to grow food and livestock feed more efficiently and expand international markets.

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