

New Research Shows U.S. Agriculture Has Potential to be Greenhouse Gas Negative

Peer-reviewed report provides more scientific evidence that agriculture is part of the solution to climate change

PARK RIDGE, IL, UNITED STATES, November 12, 2024 /EINPresswire.com/ -- U.S. agriculture, with



enhanced implementation of conservation practices and emerging technologies, has an opportunity to more than offset its carbon footprint while increasing farmer profitability and farm resiliency, according to a new report initiated by U.S. Farmers & Ranchers in Action (USFRA) and published today by the Council for Agricultural Science and Technology (CAST).

U.S. agriculture is helping to solve some of the world's biggest challenges, including feeding a growing population and sustaining livelihoods, all while reducing our impact on the planet."

USFRA Chair Michael Crinion

The report, "[The Potential for U.S. Agriculture to Be Greenhouse Gas Negative](#)," was authored by 26 leading independent researchers and peer reviewed by the National Academy of Sciences. The findings are based on a

comprehensive analysis of scientific literature, computer simulations, and life cycle analysis estimates.

"U.S. agriculture is helping to solve some of the world's biggest challenges, including feeding a growing population and sustaining livelihoods, all while reducing our impact on the planet," said USFRA Chair Michael Crinion, a farmer in South Dakota. "This report is further evidence of agriculture's enormous potential to do even more in the future."

The report outlines how combining reduced greenhouse gas (GHG) emissions from some agricultural activities with increased carbon sequestration in others could achieve GHG-negative agriculture. It also describes the additional research needed to help accomplish this.

The researchers identified five areas offering the most significant opportunities to offset the roughly 10% of U.S. greenhouse gas emissions contributed by agriculture, including soil carbon management, nitrogen fertilizer management, animal production and management, crop yield gap, and efficient energy use. Collectively, aggressive adoption of conservation practices in these areas has the potential to make the sector a carbon sink, the report found.

“We understand that farmers and ranchers in the United States are the greatest innovators in agricultural production on the planet,” said Dr. Marty Matlock, a professor in the Department of Biological and Agricultural Engineering at the University of Arkansas and a lead author of the report. “Our farmers have been aggressive at identifying challenges, seeking solutions and adopting new practices. That’s one of the things that defines American agriculture — willingness to change. What this report gives us is a framework for moving forward.”

The report does not prescribe practices for farmers and instead reflects that each farming operation is unique because of different commodities, soil types, weather and other factors.

“Achieving this goal will require an assessment of individual farms and production systems to determine the most effective strategies along with the technical and financial support to implement changes in practices,” said Dr. Charles Rice, university distinguished professor in the Department of Agronomy at Kansas State University and a co-author of the report.

“We’re not looking 50 years down the road. This report considers near-term opportunities for adoption,” he said.

The report also emphasizes that agriculture is an integrated, carbon-based system.

“Carbon is linked to all aspects of food production, so the path toward greenhouse gas negative agriculture runs through all stages of the production process,” said Dr. Jerry Hatfield, a retired scientist and laboratory director for the Agricultural Research Service in the U.S. Department of Agriculture and also a co-author. “These practices need to be adopted together across all production sectors in order to scale up.”

The USFRA report builds on a 2019 report by the National Academies of Sciences, Engineering and Medicine titled “Science Breakthroughs to Advance Food and Agricultural Research by 2030.”

[Click here to read the USFRA report on the CAST website.](#)

About U.S. Farmers & Ranchers in Action

U.S. Farmers & Ranchers in Action (USFRA) is a farmer-led 501(c)(3) organization with membership of hundreds of thousands of farmers and ranchers across the country, along with leading agriculture organizations throughout the value chain. USFRA plays the critically important role of creating opportunities for collaboration, information-sharing and solution development for the agriculture sector and works to lift the voice of U.S farmers and ranchers on the domestic and international stage. Learn more: www.usfarmersandranchers.org.

About The Council for Agricultural Science and Technology

The Council for Agricultural Science and Technology (CAST) is a nonprofit organization that convenes and coordinates networks of experts to assemble, interpret and communicate credible, unbiased, science-based information to policymakers, the media, the private sector and the public. CAST's primary work is the publication of task force reports, commentaries, special publications, and issue papers written by volunteer experts — economists, legal experts and scientists from many disciplines. Learn more: www.cast-science.org.

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