

**Food and Agriculture
Climate Alliance
Presents
Joint Policy
Recommendations**





Food and Agriculture Climate Alliance Joint Policy Recommendations

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Introduction

The Food and Agriculture Climate Alliance (FACA) consists of organizations representing farmers, ranchers, forest owners, the food sector and environmental advocates that are working together to define and promote shared climate policy priorities.

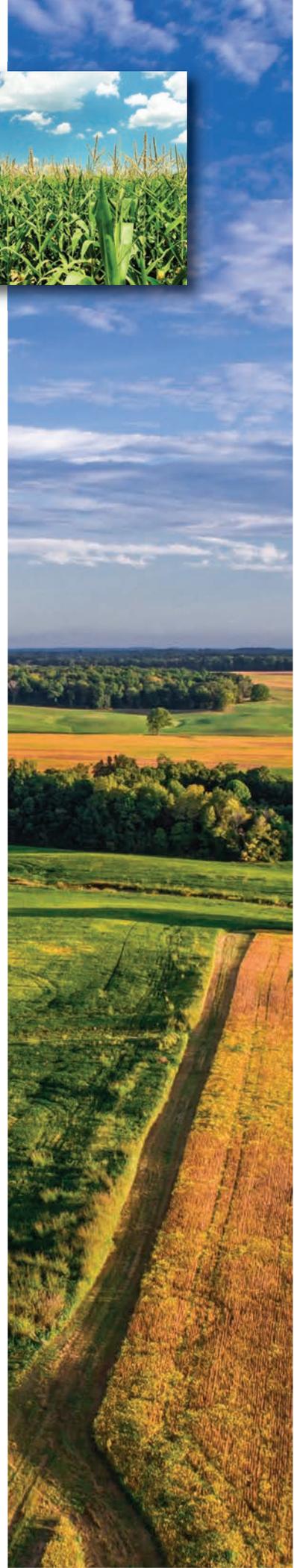
FACA members recognize that farmers, ranchers and foresters are both on the frontlines of climate impacts and part of climate solutions. This shared understanding has allowed members to break through historical barriers and form an unprecedented alliance.

The group first united around three simple principles:

1. Support voluntary, market- and incentive-based policies.
2. Advance science-based outcomes.
3. Promote resilience and help rural economies better adapt to climate change.

With that foundation, FACA developed policy recommendations in six areas of focus: **soil health, livestock and dairy, forests and wood products, energy, research, and food loss and waste.**

FACA developed these recommendations with the overarching goal to do no harm. By that, we mean any policies put forth to address climate concerns must be thoughtfully crafted, informed by their broader potential consequences and tradeoffs, and account for inequities. These include immense potential impacts for farmers, foresters, ranchers, and rural and limited-resource communities, as well as for wildlife and natural resources, including water quality and quantity.





The success of these recommended policies will require buy-in from the highest levels of USDA leadership and investment in rural broadband to ensure farmers, ranchers and rural communities have access to information, tools, and markets. As such, FACA supports:

- Providing USDA's Office of the Deputy Secretary with the authority and responsibility to coordinate climate issues across the entire agency and serve as USDA's climate representative at all interagency climate-related meetings.
- Expanding broadband access, which is necessary for using climate-smart precision technologies to reduce emissions from and the overall environmental impact of U.S. agriculture.

FACA members look forward to sharing these ideas with members of Congress and the nation. We invite other groups to join us, and welcome further discussion about the recommendations.

About FACA

FACA is led by the following four co-chairs:

Zippy Duvall, American Farm Bureau Federation

Elizabeth Gore, Environmental Defense Fund

Chuck Conner, National Council of Farmer Cooperatives

Rob Larew, National Farmers Union

Policy recommendations were developed collaboratively with input from the following steering committee members and their respective teams:

Zippy Duvall, American Farm Bureau Federation

Elizabeth Gore, Environmental Defense Fund

Leslie Sarasin, FMI-The Food Industry Association

Dave Tenny, National Alliance of Forest Owners

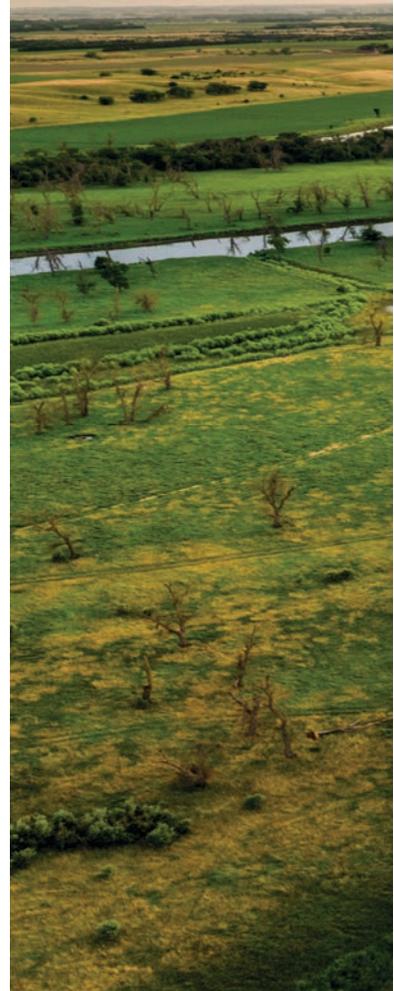
Barb Glenn, National Association of State Departments of Agriculture

Chuck Conner, National Council of Farmer Cooperatives

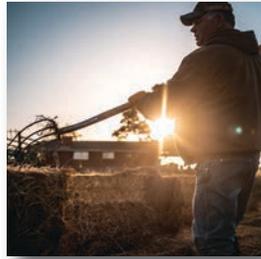
Rob Larew, National Farmers Union

Lynn Scarlett, The Nature Conservancy

Inquiries about FACA membership, as well as comments and questions about FACA recommendations, should be directed to inquiries@agclimatealliance.com.



Overview of Recommendations



Provide voluntary, incentive-based tools for farmers, ranchers and forest owners to maximize the sequestration of carbon and the reduction of other greenhouse gas emissions and increase the resilience of the land. Support additional technical assistance measures to ensure producers can overcome barriers to adoption of practices that can lead to significant reduction of GHGs and improvements in soil health.



Establish policies that foster the development of private sector markets for GHG credits and provide the appropriate role for government in that development. The public sector should ensure that verifiable reductions occur and provide farmers and forest owners with the technical support needed to participate voluntarily.



Incentivize agricultural and forestry producers to prioritize climate-smart practices through an array of public and private sector tools, including transferable producer tax credits, a U.S. Department of Agriculture-administered carbon bank and the enhancement of existing USDA conservation programs.



Incentivize farmers to reduce energy consumption, increase use of on-farm renewable energy, and make continued progress toward reducing the lifecycle GHG emissions of agriculture- and forestry-based renewable energy. Achieve these objectives by expanding and revising agriculture and forestry energy programs administered by USDA and the U.S. Department of Energy, and by updating the analysis of GHG emissions under the Renewable Fuel Standard.



Reduce the GHG impact of food waste and loss within the food value chain by streamlining confusing consumer-facing packaging and implementing a public-private partnership to achieve a meaningful and workable food date-labeling program supported by robust public consumer education.



Increase federal investment in agriculture, forestry and food-related research substantially and continuously. This will help ensure farmers, ranchers and forest landowners have access to the scientifically rigorous tools and information they need to build climate resilience, mitigate environmental impacts and increase the productivity of their land. USDA's Climate Hubs should be formally codified and expanded so that they can regularly engage stakeholders and prioritize vital research.





Soil Health Policy Recommendations

Objective

Achieve the highest number of appropriate soil health-focused practices on the highest number of acres in order to sequester carbon and reduce other GHGs.

Summary of Recommendations

Carbon sequestration

- a. Support a menu of voluntary federal policy options to encourage carbon sequestration, including:
 - i. Performance-based tax credit modeled after 45Q.
 - ii. USDA-led Commodity Credit Corporation carbon bank.
- b. Provide a one-time payment for early adopters.
- c. Support passage of the Growing Climate Solutions Act.

Changes to USDA's Natural Resources Conservation Service

- a. Increase NRCS funding to reflect program needs and enhance work on GHG mitigation and adaptation.
- b. Enhance conservation technical assistance related to soil health and climate outcomes.
- c. Streamline the NRCS conservation practice approval process.
- d. Incentivize contracts that improve soil carbon and climate resilience.

Capacity building for state-level soil health efforts

- a. Establish a USDA grant program to help states improve soil health on agricultural lands.

Crop insurance

- a. Direct USDA to conduct a study on the interaction between crop insurance and soil health practices.

Carbon Sequestration

Support a menu of voluntary federal options to encourage carbon sequestration, including:

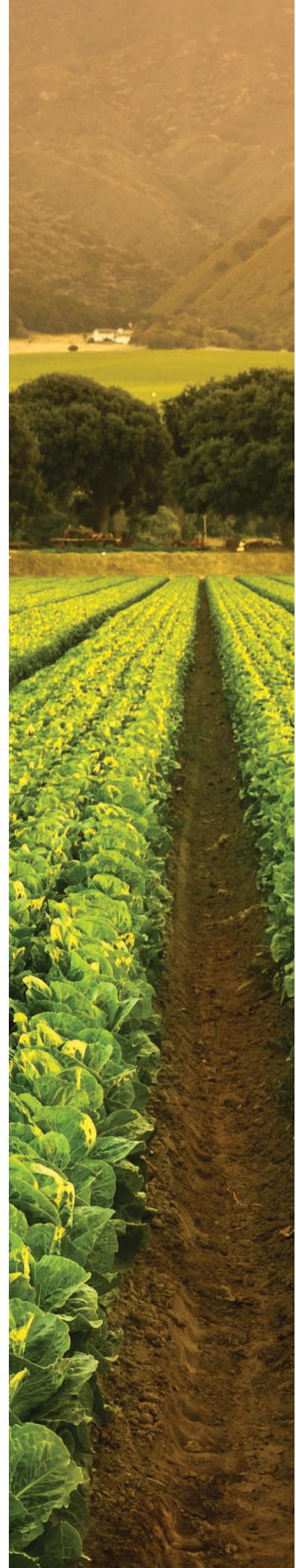
■ A performance-based tax credit for carbon sequestration modeled after 45Q

- The Department of the Treasury, in consultation with USDA, should develop a tax credit modeled after Internal Revenue Code Section 45Q. 45Q provides a tax credit on a per-ton basis for qualified captured carbon dioxide.
- The tax credit should be transferable, allowing maximum flexibility for participants.
- Relevant USDA agencies should play a significant consultative role in developing a policy guidance document covering measurement and verification that could be used for public incentives and by private markets.

■ A USDA-led Commodity Credit Corporation (CCC) carbon bank

- The carbon bank would establish a price floor for carbon sequestration and GHG reductions. This would be contingent upon a significant increase in the CCC borrowing authority to ensure that the establishment of such a bank would not impede critically important ongoing operations of the CCC, including farm programs, crop insurance and mandatory conservation programs.
- When developing the program, USDA should mitigate potential market impacts and ensure that the program is not overly complicated or burdensome.

Value: These options could provide a new revenue stream for producers while minimizing historical risks associated with adopting certain innovative practices that would result in long-term carbon sequestration and GHG reductions. In addition to guaranteeing economic certainty and returns for producers, such programs could more fully utilize the agriculture industry's ability to sequester carbon and reduce net emissions. We would recommend that producers be limited to participation in one of the two federal policy mechanisms listed above.





Provide a one-time payment for early adopters

- Eligibility for a one-time bonus payment would be contingent upon participation in a new, USDA-approved incentive program or an existing conservation program.
- When determining the definition of “early adopter,” NRCS should utilize a sliding scale based on the length of time, number and type of practices adopted by a producer.
- Funding should come from a one-time appropriation to remain available until expended.
- Participants would self-certify using documentation based upon, but not limited to:
 - Satellite imagery.
 - Soil testing.
 - Previous participation in NRCS, state or third-party certification or conservation programs.

Value: A one-time payment would motivate producers who have already adopted conservation practices to enroll in one of the two voluntary federal policy mechanisms listed above or in an existing conservation program to ensure continued sequestration efforts and promote additionality. This would also assist producers in the transition from participating in practice-based programs to outcomes-based programs.



Support passage of the *Growing Climate Solutions Act*

- The legislation would establish a GHG technical service provider and third-party certification program at USDA to help solve technical barriers to entry for farmers and forestry landowners to participate in carbon, or carbon-equivalent, credit markets.
- The legislation was introduced in the Senate by Sens. Debbie Stabenow (D-MI) and Mike Braun (R-IN) and in the House by Reps. Abigail Spanberger (D-VA) and Don Bacon (R-NE).
- The advisory committee established by this legislation should specifically look at and address issues related to land and asset ownership.

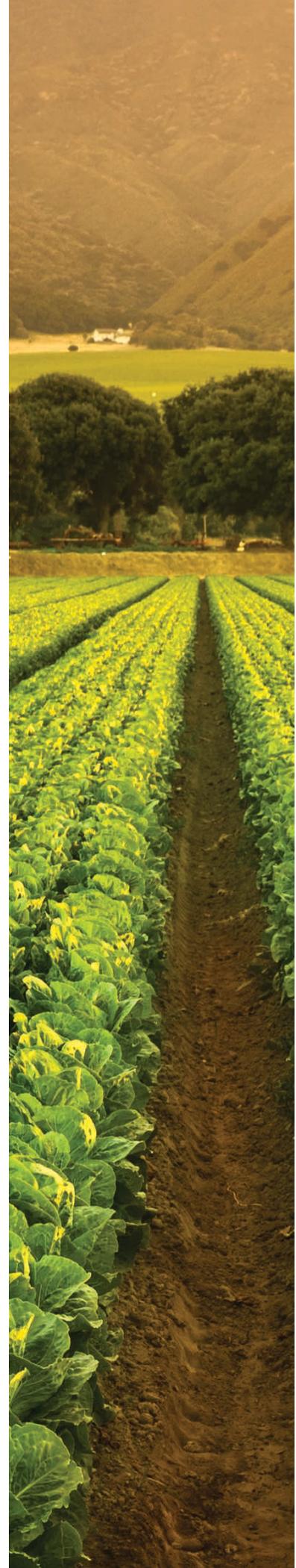
Value: The *Growing Climate Solutions Act* would serve as a base for setting standards and certification criteria, which would, in turn, help foster the growth of private-sector carbon markets.

Changes to USDA's NRCS

Increase NRCS funding to reflect program needs and enhance work on GHG mitigation and adaptation

- Support an increase in funding of 10-20% to be dedicated for new and existing GHG emissions reductions, adaptation or resilience, and soil health efforts.
- One percent of total mandatory funding from the new baseline should be dedicated to technical assistance focused on climate mitigation and adaptation.

Value: An increase in funding is necessary to support early adopter payments, address program oversubscription and enhance technical assistance.





Enhance conservation technical assistance related to soil carbon and climate resilience outcomes

- Set aside one percent of total farm bill conservation program mandatory funding for a new conservation technical assistance initiative focused on increasing climate resilience and reducing net GHG emissions.
- Funds could be used to recruit and train additional technical assistance providers and staff that would provide on-the-ground support needed to implement soil health and climate stewardship practices.
- USDA should also streamline certified crop advisers' ability to become technical service providers.

Value: Technical assistance from trusted partners and on-the-ground support is critical to help farmers and ranchers overcome administrative barriers that impede the adoption of soil health- and climate-enhancing practices.

Streamline the NRCS conservation practice approval process

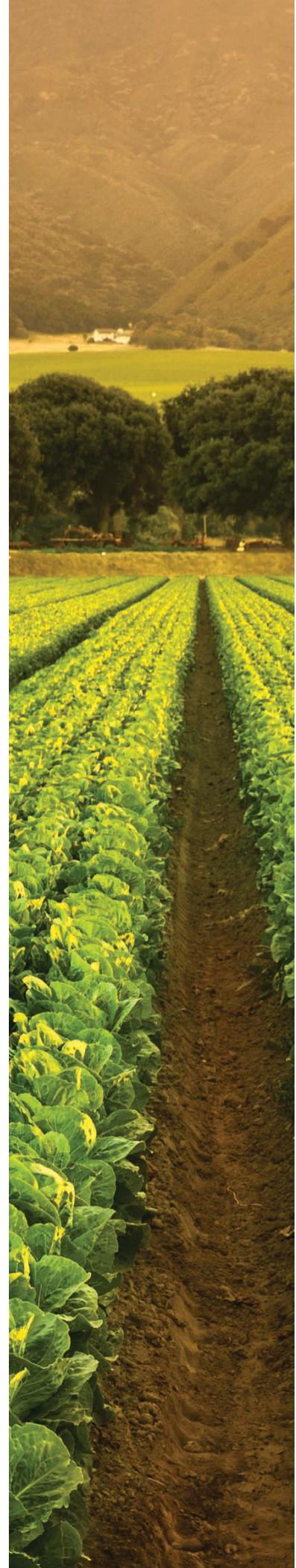
- A conservation practice standard defines a conservation practice, contains information on why and where it applies, and sets forth requirements that must be met during the application of that practice. NRCS currently reviews each practice standard every five years and updates that standard as appropriate.
- NRCS should conduct a science-based, comprehensive review of existing conservation practice standards to evaluate their effectiveness on climate mitigation and resilience. As part of this process, NRCS should consult with additional USDA agencies, including the Forest Service.
- NRCS should establish a process for proactively investigating and implementing new conservation practices and technologies and including those in the suite of conservation practices available to producers. This is the opposite of the current approach. Currently, producers and stakeholders must petition through the local, state and then national level for a practice to gain interim status. NRCS then studies the practice for a minimum of three years before determining the validity of a practice. This bottom up approach is incredibly slow and bureaucratic.

Value: USDA regularly updates existing conservation practice standards but is not proactive in their review of new technology and practices. Ensuring that the latest science on climate benefits is included in their work will help ensure that NRCS practices remain as up-to-date and impactful as possible.

Incentivize contracts that improve soil health

- NRCS should prioritize new applications and existing Conservation Stewardship Program and Environmental Quality Incentives Program contracts that result in demonstrated positive soil health, carbon sequestration, and resilience outcomes where appropriate and in line with local conservation priorities.

Value: This will ensure that, where appropriate, positive climate benefits will be identified and adopted as part of current and new CSP and EQIP contracts, encouraging producers to continue to adopt new soil health and climate stewardship measures.



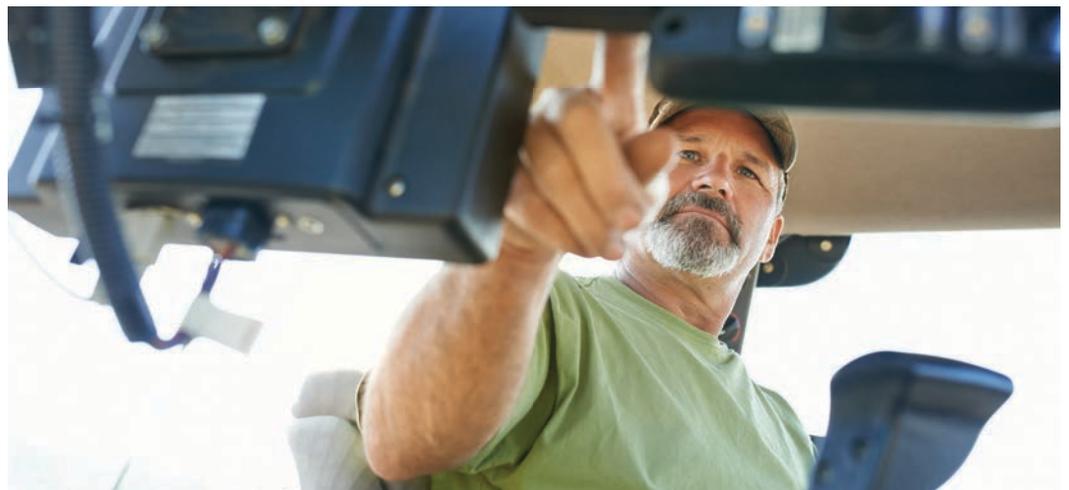


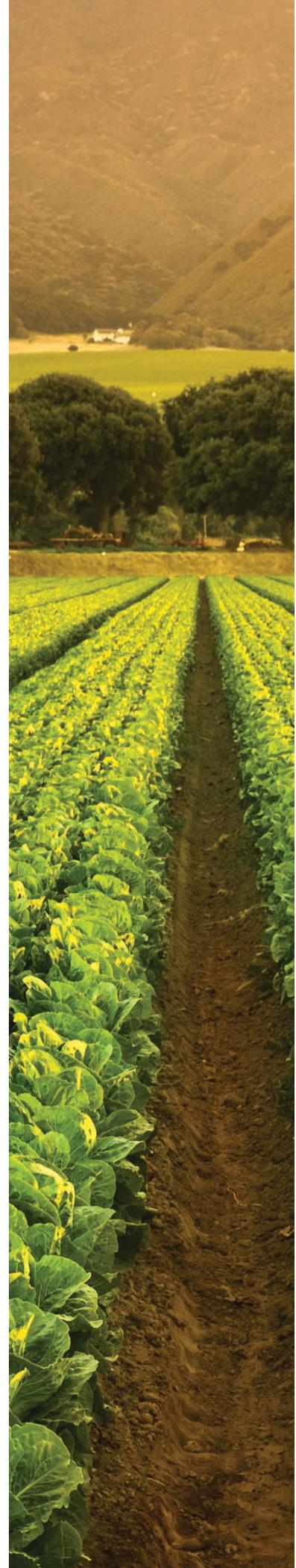
Capacity Building for State-Level Soil Health Efforts

Establish a USDA grant program to help states improve soil health on agricultural lands

- The federal grant funds would be supplementary to assist states in their soil health efforts. Eligibility would be limited to states or tribes that have enacted and are currently funding a state or tribal soil health program.
- The base grant amount should be \$200,000 with the option for USDA to plus-up funding if states or tribes demonstrate specific conservation outcomes as defined by USDA.
- Applications that demonstrate how soil health programs enhance outcomes for regional ecosystems and/or watersheds should receive priority funding.
- USDA should also consider whether implementation of grant-funded programs would compete directly with existing federal cost-share programs. Preference should be given to programs that complement federal programs.
- This concept comes from the *Agriculture Resilience Act*, introduced by Rep. Chellie Pingree (D-ME).

Value: States play a critical role in helping farmers find innovative ways to improve soil health and carbon sequestration. Additional funds would support these efforts.





Crop Insurance

Direct USDA to conduct a study on the interaction between crop insurance and soil health practices

- As part of the study, USDA must review the impact of soil-improving practices on crop productivity and on crop insurance coverage, liabilities and premium rates. USDA must also identify potential policies or modifications to crop insurance to accelerate the adoption of climate-smart farming practices.
- The study must be data-driven, and USDA must consult with growers and industry representatives as part of this process.

Value: This study will help identify additional ways to assist producers in adopting science-based climate stewardship practices, while ensuring that any steps taken are driven by data and consistent with appropriate underwriting practices.



Livestock and Dairy Policy Recommendations

Objective

Provide economic and environmental benefits for the animal agriculture sector through incentive-based approaches focused on manure management, feed, nutrition and genetics, and pasture/grazing management practices.

Summary of Recommendations

Manure management

- a. Provide adequate technical assistance and support updated conservation practices.
- b. Utilize DOE technical expertise and funding.
- c. Incentivize digesters.
- d. Expand Rural Energy for America Program eligibility to include cooperatives.

Feed, nutrition and genetics

- a. Expedite Food and Drug Administration feed additive approvals.
- b. Provide a risk- and science-based regulatory pathway to streamline the animal biotechnology approval process.
- c. Create NRCS conservation practices focused on nutrition management and herd/genetics management, and provide adequate technical assistance.
- d. Ensure feed, genetics and nutrition management are eligible under the Conservation Innovation Grant On-Farm Trial Program.

Pasture/grazing

- a. NRCS should identify regions and practices with the greatest potential for carbon sequestration and methane emissions reduction, and should support research, development and widespread use of decision-support tools for climate and land stewardship outcomes.
- b. Provide mandatory funding for the National Grazing Lands Coalition and add new elements to the program purpose.



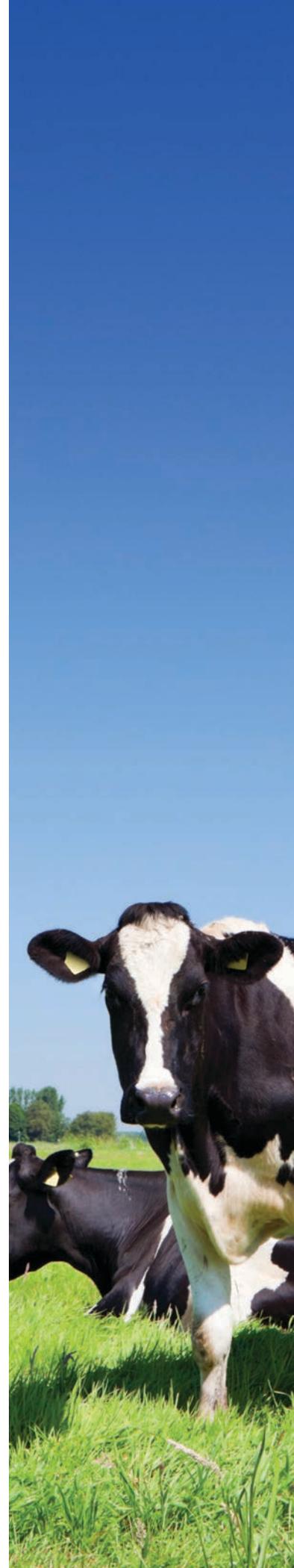
Manure Management

Currently, the main tools for farmers to reduce emissions from manure through improved management are through USDA's NRCS programs and the Rural Energy for America Program. NRCS programs are challenging for larger farmers to navigate due to eligibility around adjusted gross income and caps on payments. REAP is limited to farmers and rural small businesses.

Provide adequate technical assistance and support updated conservation practices

- Recruit and train the additional NRCS technical professionals and technical service providers needed to provide direct technical assistance to producers to install and operate anaerobic digesters, covers with flares, solid separators, and other manure management technologies that reduce GHG emissions.
- Support improvement by streamlining a forward-looking conservation practice approval process.

Value: Barriers to the adoption of manure management technologies are not limited to accessing funds —technical assistance to assist farmers in determining the best technology for manure management and planning is a crucial first step in achieving a higher percentage of manure management practices deployed. A streamlined conservation practice approval process that better keeps up with rapidly changing technology will hopefully free up additional conservation program funds in a more timely manner.





Incentivize digesters

- Support a transferable production tax credit for the sequestration, reduction or destruction of GHG emissions modeled after Internal Revenue Code Section 45Q.
- Consider support for the Agriculture Environmental Stewardship Act, introduced by Sens. Sherrod Brown (D-OH) and Pat Roberts (R-KS). The bill would make digester systems eligible for a 30% investment tax credit to help farmers and wastewater treatment facilities offset the upfront costs associated with installing a digester system.
- Move and fund the AgStar program from the Environmental Protection Agency to USDA.

Value: The upfront cost, in addition to the annual maintenance, continues to serve as a barrier to adoption of digester technologies. The combination of a production and an investment tax credit will provide additional incentives to deploy waste-to-energy projects such as methane digesters. These tax credits could be used in conjunction with any other carbon credits or GHG equivalent. Moving the AgStar program to USDA jurisdiction will improve farmers' access to technical assistance to help them in the planning process.

Utilize DOE technical expertise and funding

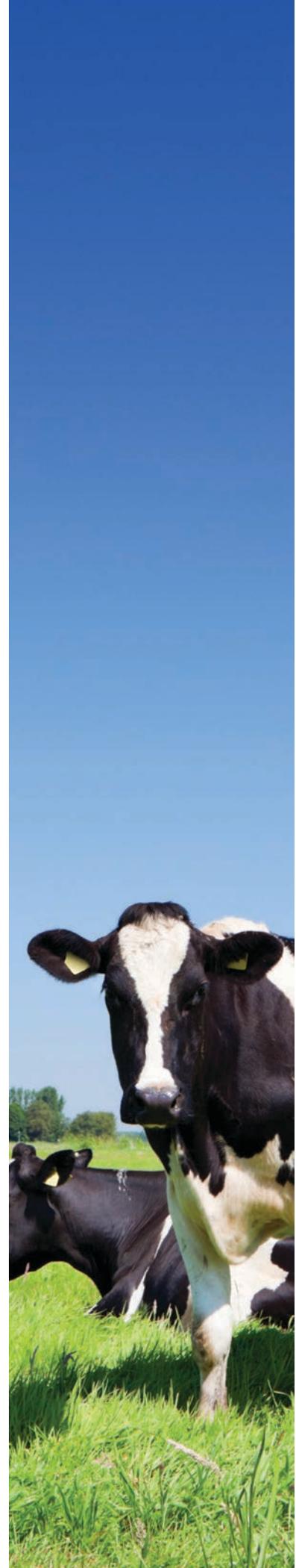
- The White House should issue an executive order re-establishing the interagency Biogas Opportunities Working Group, which should be led by USDA and include participation from DOE and EPA, as well as livestock, dairy and nonprofit stakeholders.
- This working group should be directed to remove barriers to technology adoption, identify funding sources, integrate renewable natural gas into a clean energy strategy, and work with the Ag Star Program to ensure adequate technical assistance is being provided.
- DOE has funding available for digesters under the Renewable Energy and Efficient Energy Loan Guarantee Program. Support adding a partner grant program for digesters to finance up to 25% of the project.
- DOE should include renewable natural gas from biogas as a clean energy option for research and development in the Vehicle Technology Office's partnerships and research programs where applicable, such as in the Clean Cities Coalition and National Clean Fleets Partnership.

Value: A siloed approach across the government has hampered digester deployment. A White House executive order creating a working group with the U.S. government and private sector will improve interagency collaboration, identify funding opportunities, and enable the maximum coordination of the environmental, technical and on-the-ground expertise of the partners.

Expand REAP eligibility to include cooperatives

- Currently, only farmers and rural small businesses are eligible to apply for REAP grants and loan guarantees to install renewable energy systems.
- Expanding eligible entities to include cooperatives could increase the number of digester and renewable energy projects operated and financed through farmer-owned cooperatives.

Value: Inclusion of cooperatives in REAP recognizes a different model for digesters, for example a community digester that pools several producers' waste or a cooperative that owns and maintains digesters on farms. This inclusion would not be limited to digesters, and similar models could be used for wind, solar and/or efficiency.



Feed, Nutrition and Genetics

Changes in feed composition can directly or indirectly reduce methane emissions resulting from enteric fermentation in ruminant livestock. Improved genetics that support digestive efficiency and productivity can also contribute to reduced GHG emissions and climate resilience. Innovative technologies with the potential to reduce enteric emissions often face regulatory roadblocks preventing or delaying market approval. Incentives are necessary to offset the risk a farmer faces by changing feed rations, testing new feed additives or making changes to their breeding/herd genetics.

Expedite FDA feed additive approvals

- On average, the FDA's Center for Veterinary Medicine takes 3-5 years to review an animal food ingredient. According to a study by Informa Economics, companies lose \$1.75 million per year in revenue while they wait for approval.
- Prioritize additives that have climate and digestive efficiency benefits.

Value: Feed additives are a promising tool to address enteric emissions in ruminants, and regulatory burdens are adding years onto the process of making these additives available to producers. This lag in approval is likely also impacting research and development investments in this area in the United States. Streamlining the approval process would allow new products to get into the hands of producers faster and send signals to the private sector making R&D decisions.



Provide a risk- and science-based regulatory pathway to streamline the animal biotechnology approval process

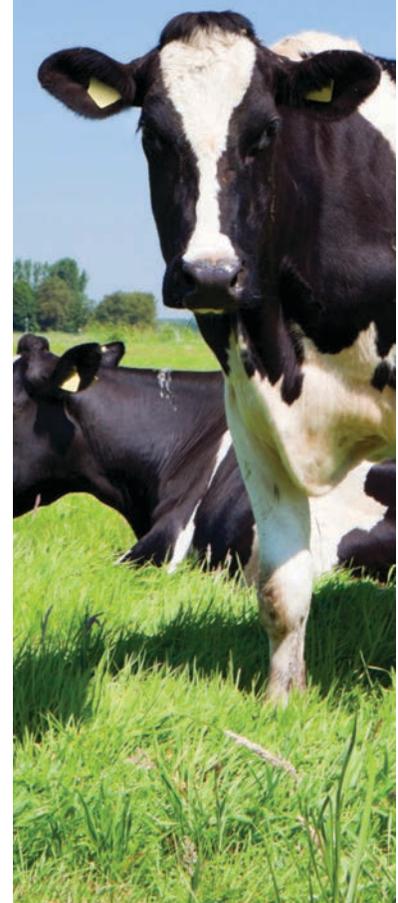
- Improvement of animal genetics will also be a critical aspect to helping livestock producers around the world adapt to a changing climate.
- It is important to note that, while these technologies can improve animal genetics to develop resilience, they can also help to reduce emissions.

Value: Ensuring a risk- and science-based approval process for animal biotechnology products will help farmers and ranchers better insulate themselves and food production from the risks of climate change, and contribute to GHG reductions as well. Improvements in animal genetics to produce more meat or milk could allow for a reduction in the total number of animals in production, thus reducing the aggregate environmental impact. The use of technologies, such as gene editing, could enable such improvements to be made quickly.

Create NRCS conservation practices focused on nutrition and genetics/breeding management and provide adequate technical assistance

- Expand support for conservation planning and technical assistance in order to optimize livestock management and land stewardship for climate adaptation and mitigation.
- Additional resources would enable all technical advisers, including technical service providers, to work with livestock producers through nutrition and genetic/breeding planning to reduce emissions.
- Third-party TSPs would receive funding to work with livestock farmers and ranchers to develop new nutrition and genetic plans focused on efficiency, animal health and reduced emissions.
- Create conservation practices to reflect feed management, genetics and nutrition planning to reduce emissions.

Value: Ensuring NRCS adequately incorporates feed/nutrition management is a critical tool to reduce emissions. Row crop farmers can receive assistance for conservation planning on their farms to address climate and resource concerns, but currently there is no assistance for livestock producers who are working to reduce emissions from their animals.





Ensure feed, genetics and nutrition management are eligible under the CIG On-Farm Trial Program

- On-Farm Conservation Innovation Trials are intended to offset the risk of new practices for farmers so they can implement new systems or approaches and then evaluate their impact. While on-farm trials are primarily used on the crop side, livestock producers would likely benefit from the same process to try out new animal feed rations and additives, grazing systems and genetics that have been proven to reduce enteric emissions.
- Support an increase in funding to accommodate the additional categories.

Value: CIG on-farm trials are a critical tool for farmers to try out and prove new practices with reduced risk. While trials around feed additives and genetics are not explicitly excluded, it's also not clear that they are included. Inclusion will provide additional means for farmers to test out the newest technologies to ensure they work in their operations.

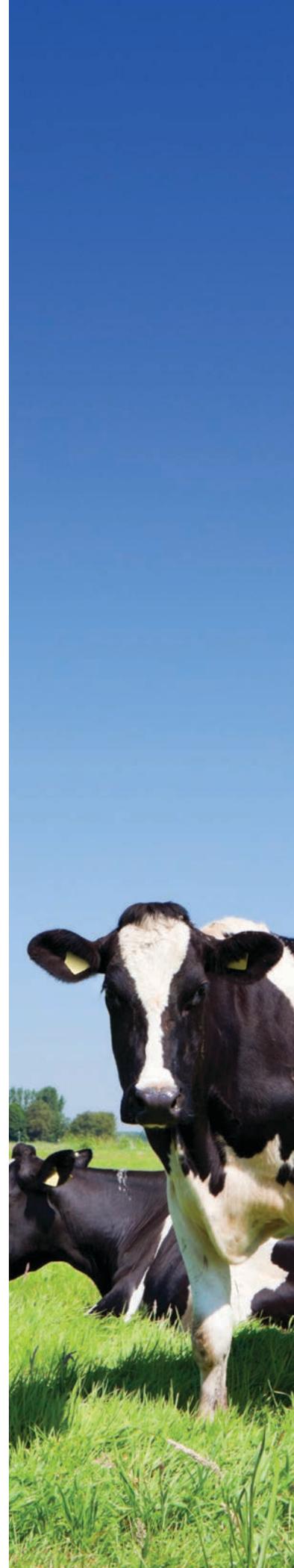
Pasture/Grazing

Improved pasture and grazing management has the potential to play a substantial role in terrestrial carbon sequestration. More needs to be done to develop protocols and to deploy prescribed pasture and grazing practices to reduce emissions.

NRCS should identify regions and practices with the greatest potential for carbon sequestration and methane emissions reduction, and should support research, development and widespread use of decision-support tools for climate and land stewardship outcomes

- Adjust NRCS state office priorities for providing technical assistance to grazing land managers in high-priority regions in coordination with the National Grazing Lands Coalition.
- Initiate research and development efforts to improve enteric fermentation/forage intake estimation models.
- Expand capacity and support for technical assistance, including the technical service provider program, to ensure conservation planning and climate-beneficial practices are accessible to all grazing lands managers, and to increase adoption of such practices.
- Expand research and development to improve and expand use of tools like COMET-Farm, COMET-Planner, LandPKS, Rangeland Analysis Platform and CART that support farm and ranch management for soil health, carbon storage/sequestration and other conservation outcomes.
- Support and expand practices that have demonstrated emission reductions capability.¹
- Practices appropriate to each operation/landscape can be best identified through a conservation planning approach, as defined by NRCS and through the National Conservation Planning Partnership. Conservation planning currently can be cost-shared but is often limited by lack of local technical assistance or technical service provider support. Support additional new funding for technical assistance, including the recruitment and training of NRCS staff.

¹ Examples of these practices could include but should not be limited to: Fencing or access control — NRCS practices 328/472; critical planting area — NRCS practice 342; shelterbelt — NRCS practice 380; silvopasture — NRCS practice 381; riparian herbaceous restoration and riparian forest buffer restoration — NRCS practices 390/391; hedgerows — NRCS practice 422; water development — NRCS practices 516/614; prescribed grazing, which usually involves rotational practices — NRCS practice 528; and compost application — in draft.





Value: Prescribed grazing and related land stewardship are longstanding NRCS conservation practices with demonstrated results. The proper management of grazing lands can lead to soil and aboveground carbon sequestration, helping the animal agriculture sector reduce net GHG emissions. Increased funding for technical assistance, including for conservation planning, is key to help farmers and ranchers carry out prescribed grazing and related practices.

Provide mandatory funding for the National Grazing Lands Coalition, and add new elements to the program purpose

- The National Grazing Lands Coalition, formerly known as the Grazing Lands Conservation Initiative, is a nationwide consortium of agricultural producer, conservation and environmental organizations and individuals working to provide technical assistance to landowners and to maintain and improve the management, productivity and health of the nation's privately-owned grazing land. The coalition carries out its activities through local, state and national partnerships.
- Fund the authorized level of \$60 million per year, and amend the program purpose to add soil health and grazing system resilience. (This recommendation comes from the House Select Committee on the Climate Crisis' Democratic staff report.)

Value: Funding at the authorized level would support voluntary technical assistance and expanded grazing lands research and education.



Forests and Wood Products Policy Recommendations



Objective

Create market conditions, incentives and investments to support natural climate solutions at scale from private U.S. forests with safeguards to ensure positive outcomes for forests and the climate.

These policy recommendations are focused on privately-owned forests. However, there are important opportunities to create and optimize climate benefits within public forests as well, by addressing challenges such as increasing wildfire resilience and maintaining clean water sources for millions of Americans. Climate solutions for public lands should be crafted to be complementary to private lands solutions.

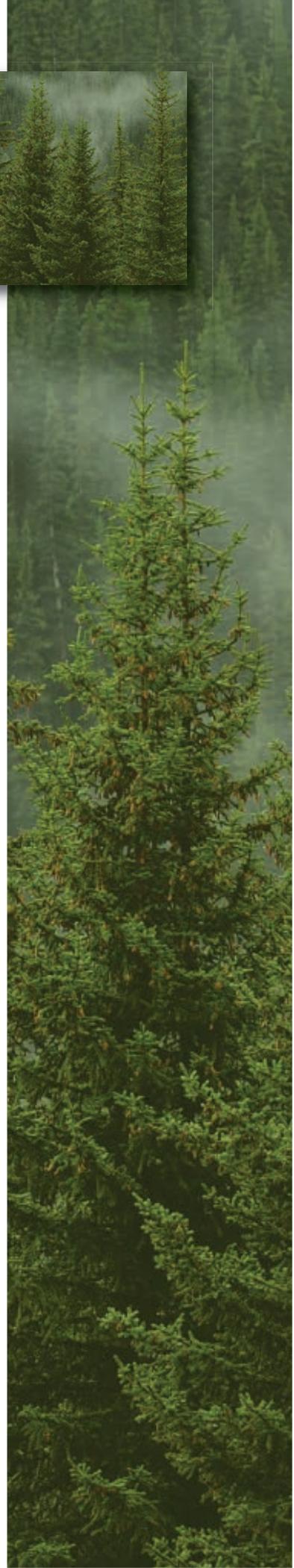
Summary of Recommendations

Forests

- a. Develop a carbon accounting framework that can be applied to multiple policy mechanisms, including a tax credit for carbon sequestration and carbon crediting programs.

Wood Products

- a. Establish a new construction tax credit for building with materials that have a lower carbon footprint.



Forests

Develop a carbon accounting framework to encourage forest carbon sequestration

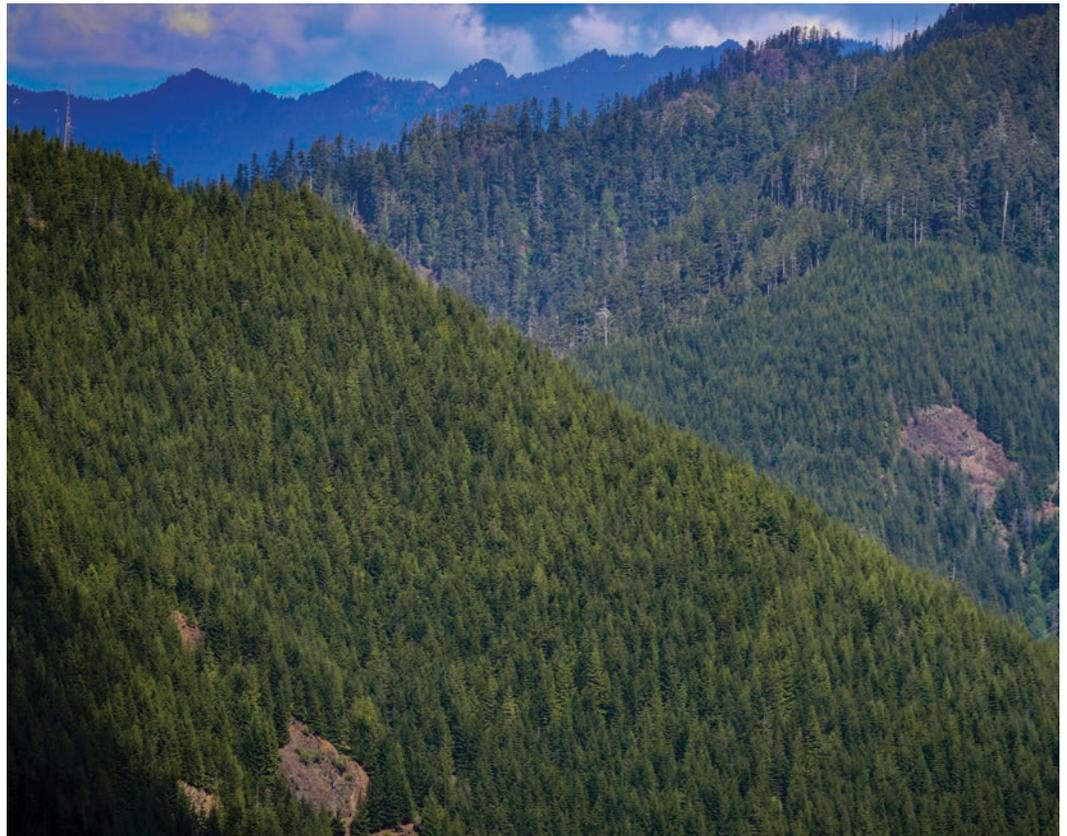
This framework could be applied to multiple policy mechanisms that represent promising approaches for scaling climate benefits on private land, including:

- **Tax credits for carbon sequestration in the land sector**

Transferrable tax credits, provided for carbon sequestered, captured and used over a baseline, would incentivize carbon sequestration in forests and storage in wood products.

- **Carbon crediting programs**

Build out a carbon crediting approach that could apply in the private sector (e.g., with a large brand seeking to validate their investments in carbon removals), as well as in other voluntary markets. Use an existing private sector approach as the baseline, adapting and building out the approach to apply to the range of existing markets and new opportunities that arise.



The framework should feature a two-pronged approach that can be applied to voluntary, incentive-based policies, as well as to a wider range of voluntary investments in forest carbon that require high quality credits. Landowners would pick one of two options:

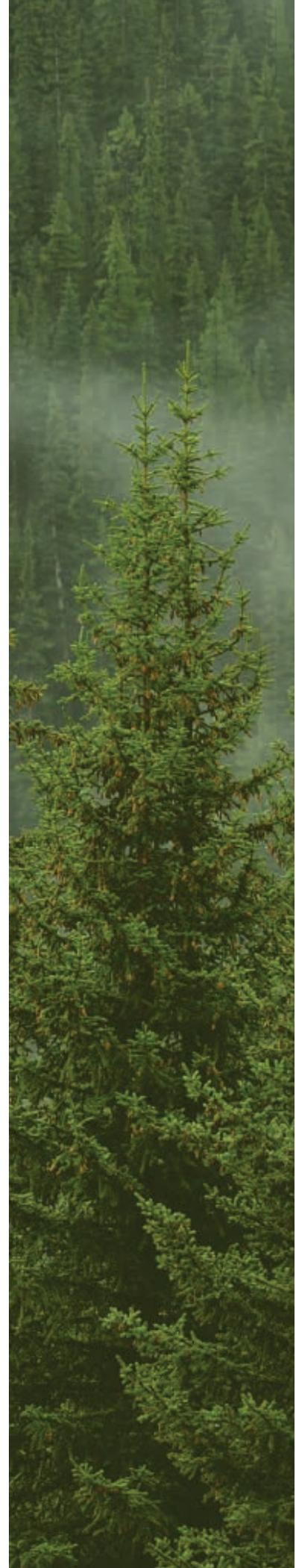
- Practice-based approach where the tax credit/carbon credit is determined by USDA-approved practices that the landowner implements. A practice-based approach appeals to smaller landowners and is USDA's comfort zone.
- Performance-based approach where the tax credit/carbon credit is determined by carbon sequestration performance above a baseline. A performance-based approach works better for large forest owners, delivers outcomes with higher environmental certainty at scale, is more open to innovation and is USDA's aspiration.

For a tax credit, carbon credit or any other policy mechanism, USDA should be the home. USDA can be a valuable partner in developing tools and approaches that enable participation in carbon markets and tax credits. USDA's experience and relationships will be key for successful program development and implementation.

Any approach (tax credit, carbon crediting, or other) should meet these principles: be market-based, achieve real mitigation benefits, consider impacts on the entire forestry value chain, avoid requiring co-benefits, base payments on climate benefits, recognize other benefits from sustainable forest management, and include safeguards to promote positive outcomes for forests and the climate.

Value: If structured appropriately, a landowner tax incentive for forest carbon sequestration and improved, standardized approaches to carbon crediting could increase the return on investment to private forest owners for carbon sequestration and catalyze further efforts by private forest owners in providing climate benefits at scale. By developing a framework for carbon accounting that could apply to these and other mechanisms, we can ensure that opportunities created within any policy mechanism work for forest landowners, while also providing significant benefits to the climate.

See also: Tax credit for carbon sequestration and carbon bank on pages 10-11.



Wood Products

Create a new construction tax credit for building with materials that have a lower carbon footprint

- The transferrable tax credit would go to the developer of the project or to the entity making most of the decisions/investments in materials for the project. (Projects include residential and multi-story buildings and other buildings, including those providing additional social benefits, such as schools, affordable housing and infrastructure investments.) The amount of the tax credit would be based on the value of the building, not the land, and determined by the building's carbon footprint score.
- The baseline tax credit would be determined by a carbon/GHG methodology or calculator that is well documented, scientifically sound, widely used, material agnostic, compares between materials and considers all life cycle stages.
- There could be additional incentives provided for activities that provide social benefits and increase the use of low carbon materials in the construction of infrastructure projects, affordable housing and public works construction like schools.
- Any tax credit for lower carbon footprint materials should be based on scientifically sound life cycle analyses and include safeguards to promote positive outcomes for forests and climate.

Value: Providing a tax incentive to build with low carbon materials will help reduce the carbon footprint of the built environment and support strong forest products markets that are critical to keeping our forests as forests. Such markets enable private forest owners to invest further in sustainable management that enhances forest carbon sequestration, water quality, and wildlife habitat. The tax credit can help more broadly reduce embodied carbon in residential and commercial buildings, affordable housing, schools, hospitals, military structures, federal buildings, and infrastructure projects.



Energy Policy Recommendations



Objective

To help farmers reduce energy use through efficiency and, to the maximum extent practicable, generate renewable energy.

Summary of Recommendations

Changes to USDA's REAP

- a. Increase USDA cost-share for bundled renewable energy/energy efficiency projects.
- b. Establish a pilot program that would expand eligibility to third parties.
- c. Increase funding to meet demand.

Promote USDA/DOE interagency coordination

- a. Establish a rural/agriculture/forestry advisory committee at DOE.

Other USDA recommendations

- a. Direct USDA to conduct a study of on-farm energy initiatives.
- b. Expand USDA's Section 9003 program eligibility.

Biofuels

- a. Update the life cycle analysis of GHG emissions under the Renewable Fuel Standard.
- b. Streamline EPA's renewable fuel pathway approval process.
- c. Codify and fund a USDA renewable energy infrastructure program.





Changes to USDA's REAP

REAP provides grants and loan guarantees for farmers and rural small businesses for energy efficiency improvements and renewable energy systems. Additionally, it provides grants for energy audits and feasibility studies for renewable energy systems. REAP has mandatory funding of \$50 million that does not expire.

Increase USDA cost-share for bundled renewable energy/energy efficiency projects

- Establish a higher cost-share for projects that include a renewable energy and energy efficiency component.
- The cost-share amount would be left to the discretion of the administrator but must be no less than 30%. Currently, the grant program provides no more than 25% of the total project, and a loan guarantee in combination with a grant can cover 75% of the project.
- The cap would be increased to \$650,000 for bundled projects. Currently there is a \$500,000 max for renewable grants and \$250,000 max for efficiency grants.
- USDA's Rural Development would be required to coordinate with NRCS to develop an application that is streamlined for farmers, allowing them to apply for renewable energy, energy efficiency or bundled projects. Applications and information should be readily available in Farm Service Agency field offices.

Value: Increasing USDA's cost-share for bundled projects would incentivize farmers who are planning to install renewable energy systems to simultaneously reduce energy use by making efficiency improvements.



Establish a pilot program that would expand eligibility to third parties

- This pilot program would allow states, nonprofits and other entities to apply for grant funding (not loans) for energy efficiency and renewable energy projects. Once projects are selected, the third parties would then enter into a contract with a farmer to install a renewable energy system or make energy efficiency improvements, similar to the Regional Conservation Partnership Program.
- Funding should be \$25 million per year.

Value: REAP has been criticized for its complicated application process. The program is administered by Rural Development, which, by its nature, is not set up to interface with farmers. The pilot would expand program delivery to those producers who might not have the technical capability to apply. Moreover, the private sector could offer additional resources and utilize their networks to bring additional farmers into the program.

Increase funding to meet demand

- REAP is historically oversubscribed. Year after year, demand has exceeded availability of funds.

Value: Additional funding would address the high demand, increase cost-share for bundled projects and account for the new pilot program.





Promote USDA/DOE Interagency Coordination

Establish a rural/agriculture/forestry advisory committee at DOE

- Modeled after EPA's Farm, Ranch and Rural Communities Committee (FRRCC), the DOE advisory committee would provide independent policy advice and recommendations to the Secretary of Energy on a range of issues impacting agriculture, forestry and rural communities. Topics should include energy efficiency, renewable energy, biogas production and biofuels.
- Committee members should include representatives from industry, academia, nonprofit organizations and state, local and tribal governments. Committee members should consult with the House and Senate Agriculture Committees.
- This advisory committee would build upon efforts by DOE and USDA to improve interagency coordination on rural energy issues. In October 2019, USDA and DOE entered into a Memorandum of Understanding, required by section 6501 of the 2018 farm bill, to promote rural energy and the development of technologies that will support rural, forestry and agricultural communities. Per the MOU, the agencies have convened interagency working groups focused on: developing and expanding energy- and manufacturing-related businesses in rural America, encouraging investments in new or improved rural energy infrastructure, enhancing capital access, addressing rural community needs, and supporting cyber security initiatives and grid improvements.

Value: While DOE is working to improve coordination with USDA on rural energy issues, a vast array of agriculture, forestry and energy policy perspectives exist outside of the federal government. DOE should establish an open working relationship with rural stakeholders to better understand the needs of rural communities and to improve program delivery.



Other USDA Recommendations

Direct USDA to conduct a study of on-farm energy initiatives

- The study should examine the status of on-farm efficiency adoption, rural renewable energy production and biofuels deployment.
- The study should also identify barriers and opportunities to increase on-farm energy initiatives and scale renewable fuels production.

Value: There is currently no comprehensive, updated federal accounting of rural energy initiatives. Data could be used to improve the delivery and efficacy of USDA energy programs.

Expand USDA's Section 9003 program eligibility

- The Biorefinery, Renewable Chemical and Biobased Product Manufacturing Assistance Program (BAP), also known as the Section 9003 program, provides loan guarantees up to \$250 million to assist in the development of advanced biofuels, renewable chemicals and biobased products manufacturing facilities.
- Section 9003 program eligibility would be expanded to allow for alternative, non-digester manure management projects. Digester projects are currently considered eligible.

Value: Alternative manure management projects prevent the production of methane. There are few federal incentives to promote these alternative projects. Given that the Section 9003 program is generally undersubscribed, we suggest opening up eligibility to these projects.



Biofuels

Biofuels have a role to play as we work together to reduce the GHG footprint of the U.S. transportation sector. Agricultural best practices and production methods have the potential to reduce the life cycle emissions of biofuels. Comprehensive approaches to reducing emissions should recognize the relative benefits of biofuels based on their full life cycle emissions and encourage continual improvements in biofuel carbon intensity to ensure increasing benefits over time. Looking forward, renewable fuel and/or bioenergy policy should be market-based and provide clear, simple and consistent eligibility criteria across all feedstocks.

Update the life cycle analysis of GHG emissions under the Renewable Fuel Standard

- Direct EPA, in consultation with USDA, to review and update their life cycle analysis of GHG emissions under the Renewable Fuel Standard to reflect the latest science, such as efficiency gains associated with updated farming and production practices.
- EPA's life cycle analysis for the Renewable Fuel Standard includes emissions related to feedstock production and transportation, fuel production and distribution, and use of the finished fuel. The sum of the emissions for each renewable fuel pathway is then compared to the emissions from a baseline fuel (e.g., gasoline). The results are then used to determine if the fuel pathways meet the emissions reduction thresholds required under the Clean Air Act.

Value: The life cycle analyses should be updated periodically to reflect the latest science. USDA has practical knowledge and expertise on biofuels and, thus, should be consulted throughout the assessment process.



Streamline EPA's renewable fuel pathway approval process

- Support the Thune-Shaheen bill, which would require EPA to render a final decision within one year after a pathway petition is completed and render a decision within 90 days for registration applications pending at least 180 days. The bill also provides \$2 million in funding to complete the approvals.
- Pathways are the feedstock method through which certain renewable fuels may be created, and registrations are individual facility certifications for producers affirming that their fuel meets the standard required by the pathway.

Value: EPA has historically been slow to act on pathway and registration petitions. The delay in the agency's approval process stifles innovation and limits the deployment of advanced biofuels, which offer many GHG benefits.

Codify and fund a USDA renewable energy infrastructure program

- In the past few years, USDA has announced two competitive grant programs to incentivize biofuels infrastructure — the Biofuels Infrastructure Partnership and the more recent Higher Blends Infrastructure Incentive Program.
- An infrastructure program under USDA that builds on BIP and HBIP to provide grants for connecting agricultural renewable energy sources to distribution should be codified into law with mandatory funding.

Value: A codified program with mandatory funding would provide consistent funds to help incentivize the expansion of infrastructure to support agricultural renewable energy, including fuels, with a lower carbon intensity.





Food Loss, Food Waste and Consumer Engagement Policy Recommendations

Objective

Develop and leverage achievable goals and metrics to reduce and mitigate food loss and waste, and thus, positively impact feeding people and addressing climate change.

In 2015, the U.S. announced a national goal to reduce food loss and waste by half by the year 2030. The policies recommended below seek to ensure we meet/exceed the national reduction goal.

Summary of Recommendations

Federal interagency coordination

- a. Extend the formal interagency collaboration agreement between USDA, FDA and EPA to 2030, consistent with the national goal commitment results.

Industry collaboration

- a. Outline specific measurement, verification and reporting goals required for participation in the USDA and EPA Food Loss and Waste 2030 Champions Program.
- b. Promote public and private efforts to increase the amount of food donations across the supply chain and develop instruments for measuring increases.

Consumer education

- a. Endorse consistent national product date labeling standard developed by FMI and the Consumer Brands Association.
- b. Develop a public-private partnership food waste education effort (modeled after the Partnership for Food Safety Education).
- c. Prioritize food waste education in existing nutrition education programs.
- d. Expand information about preventing food waste in Team Nutrition education materials for schools.
- e. Include additional information about preventing food waste in USDA's Foods in Schools Product Information Sheets.

Federal Interagency Coordination

Extend the formal interagency collaborative agreement between USDA, EPA and FDA through 2030, consistent with the national goal commitment results

- In October 2018, USDA, EPA and FDA launched the Winning on Reducing Food Waste Initiative in a joint formal agreement. As part of the Initiative, the agencies commit to work toward the national goal of reducing food loss and waste in the U.S. by 50% by 2030. The formal agreement is to remain in effect for two years (through October 2020).
- Per the initiative, the agencies developed an Interagency Strategy on Food Waste to prioritize and coordinate their efforts.
- However, a 2019 GAO report stated that the agencies do not currently have plans for how they will continue their interagency collaboration beyond the life of the current agreement.

Value: Continuing interagency collaboration as the agencies implement their strategic plan is key to meeting the national reduction goal.

Industry collaboration

Outline specific measurement, verification and reporting goals required for participation in the USDA and EPA Food Loss and Waste 2030 Champions Program

- The Food Loss and Waste 2030 Champions Program was started in 2016 to encourage companies to publicly pledge to cut their food waste in half by 2020. To join this effort and receive recognition, companies must complete and submit the 2030 Champions Form, where they commit to reducing food waste in their own operations and periodically reporting their progress on their website.
- Requirements for joining this program should be more fully developed, including a plan by a company to achieve their goals, that includes benchmarks, regularly scheduled verification and publication of progress.





Value: This program recognizing Food Waste Champions could be more beneficial and provide more useful information to consumers who consider this issue important when making purchasing decisions if it had more robust standards.

Promote public and private efforts to increase the amount of food donations across the supply chain and develop instruments for measuring increases

- Recent events surrounding COVID-19 have emphasized the need to establish and develop complete supply chain relationships with the food recovery community, including at the farm level.
- New technologies — including online tools, platforms and apps — offer simple, low-cost ways to connect farms with product to donation venues.
- Industry needs to focus on capturing areas where there are challenges. There is a particular demand and lack of capacity for fresh foods.
- Food banks' capacity to receive, handle, store and deliver fresh food needs infrastructure support.
- Consider support for Sen. Debbie Stabenow's (D-MI) Food Supply Chain Protection Act, which includes funding for efforts, including within USDA, to build out this infrastructure.
- This goal is in alignment with Priority Area 4 of the Interagency Strategy on Food Waste.

Value: Business and government efforts to increase food donations have been hugely successful but have largely operated as separate workstreams. Promoting efforts to combine and collaborate more extensively with the specific goal of boosting fresh product donations could begin to transform food donation in terms of both the quantity and quality of product offered.

Consumer Education

Endorse consistent national product date labeling standard developed by FMI and CBA

- The voluntary program establishes two standard date labels — “Best if Used By” as a quality indicator and “Use By” to indicate perishability or degradation of other attributes.
- The “Best if Used By” label is endorsed by FDA.
- Consumer research indicates a clear understanding that the labels communicate different meanings, though further education on the specific meaning of each label is needed.
- This policy goal roughly aligns with parts of Priority Area 4 of the Interagency Strategy on Food Waste.

Value: Harmonizing and simplifying date labels so consumers make more effective use of them is often cited as one of the simplest and most effective ways of reducing food waste. An endorsement of this simplification approach by the full supply chain coalition represented in this effort would lend strong support for existing efforts without creating new mandates.

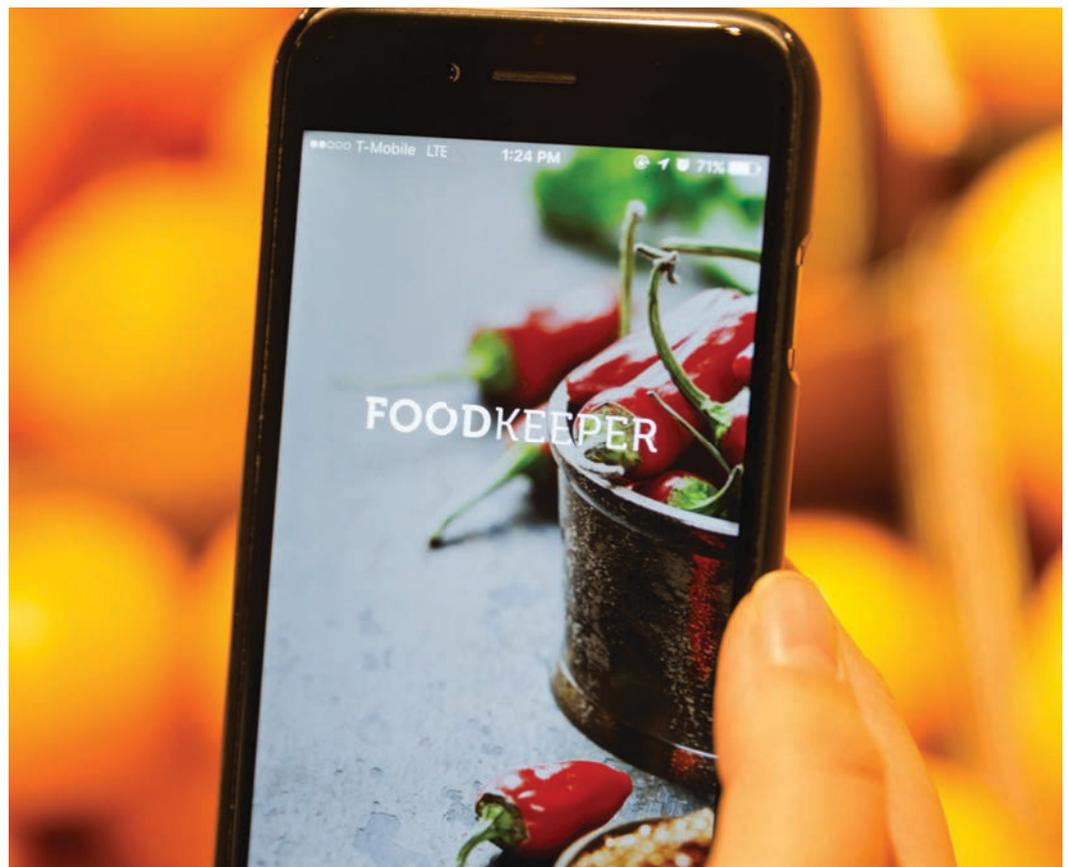




Develop a public-private partnership food waste education effort (modeled after the Partnership for Food Safety Education)

- This effort would include consumer-facing outreach and could also serve an important secondary function of helping to educate the public on how food is produced.
- New efforts can build on existing ones, such as the ongoing Ad Council campaign on food waste and EPA’s “Food: Too Good to Waste” effort.
- A full spectrum of subjects and venues should be considered, including utilization of the FoodKeeper App, explanation of canning and freezing, and food donation, including liability protections and tax credits.
- This goal aligns with Priority Area 2 of the Interagency Strategy on Food Waste.

Value: The public has become better educated on the issue of food waste over the past five years, but ongoing efforts tend to focus more on awareness and less on solutions. A joint effort between USDA and the business community could change this focus toward addressing the issue in concrete ways that can be measured and reported more easily.



Prioritize food waste education in existing nutrition education programs

- Explicitly include food waste in the list of program priorities for the Food and Agriculture Service Learning Program, which provides grants through the National Institute of Food and Agriculture for nutrition education in schools. Specific activities to assist food waste reduction could include education on appropriate portion sizes and the proper storage of perishable goods.
- Add food waste education to the list of program goals for the Expanded Food and Nutrition Education Program, which provides grants to land-grant universities to deliver state-level nutrition and physical education programs to low-income families. The four core areas of the program are: diet quality and physical activity, food resource management, food safety and food security. Food waste reduction should be explicitly listed under the “food resource management” area.

Value: Schools are an important setting to shape the behavior of a newer generation of consumers, and education about food waste reduction could help extend the budgets of low-income Americans.

Expand information about preventing food waste in Team Nutrition education materials for schools

- Team Nutrition, an initiative of the USDA’s Food and Nutrition Service, supports national efforts to promote lifelong healthy food choices and physical activity by improving the nutrition practices of the child nutrition programs. Team Nutrition provides resources to schools, childcare settings and summer meal sites that participate in these programs.
- While Team Nutrition does publish a booklet called “What You Can Do To Help Prevent Wasted Food,” which includes ideas for school nutrition professionals, teachers, parents, students and administrators, this booklet is separate from the regularly distributed nutrition education materials provided through Team Nutrition.
- Food waste prevention and reduction should be incorporated into all materials geared toward teachers and students through Team Nutrition education materials.

Value: The National School Lunch Program operates in nearly 100,000 public and nonprofit schools and residential childcare institutions, providing lunches to nearly 30 million children every day. Opportunities to more fully educate through Team Nutrition could result in behavioral changes that lead to less food waste.





Expand information about preventing food waste in USDA's Foods in Schools product information sheets

- USDA publishes product information sheets for USDA Foods in Schools available to households through the Food Distribution Program on Indian Reservations, the Commodity Supplemental Food Program and the Emergency Food Assistance Program. These product sheets are available to staff who operate USDA Food programs, as well as to participants.
- Each sheet includes a description of the product, storage tips, nutrition facts and recipes that use the product.
- These sheets should include information about how long products are expected to last under normal storage conditions, or a link to that information electronically.

Value: This is a low-cost way to ensure participants in USDA nutrition programs receive storage information that could prevent food loss and waste and increase the effectiveness of these nutrition programs.

Research Policy Recommendations

Agriculture and forestry face immense challenges due to the impacts of climate change. The United States must step up its commitment to agricultural and forestry research to help provide farmers, ranchers and forest owners with the tools they need to adapt, mitigate and become more resilient to climate change.

Summary of Recommendations

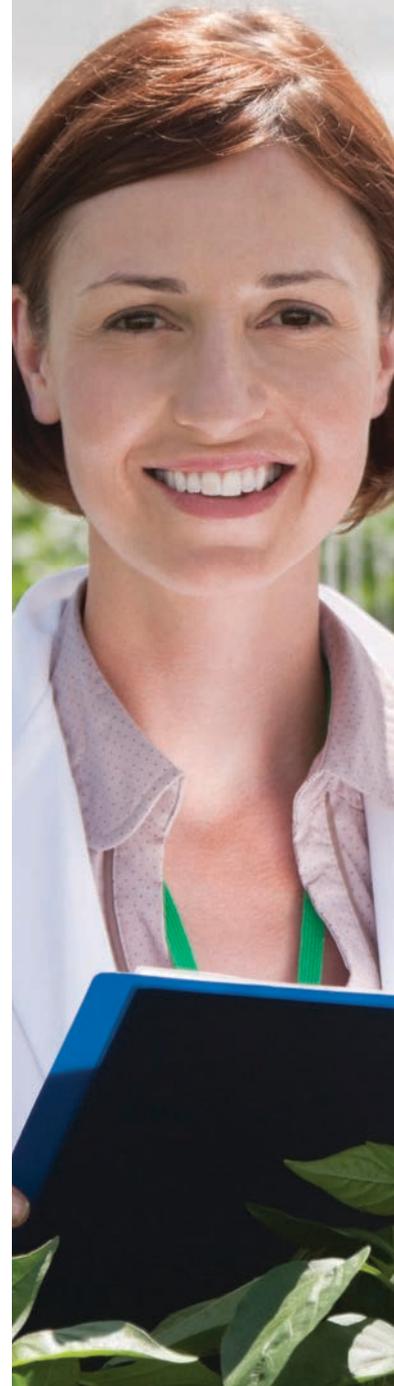
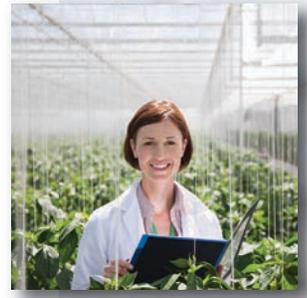
We recommend substantial funding increases across the board for agricultural, forestry and wood products research. More specifically, we recommend the following:

Measurement and verification

- a. Direct USDA's Agricultural Research Service to develop protocols for climate research trials.
- b. Provide NRCS funding to expand the number of soil sampling reference sites.
- c. Provide NRCS funding to improve USDA's COMET tool.
- d. Establish strategic research initiative on ways to improve forest carbon measurement and monitoring.

Outreach and deployment

- a. Formally codify USDA's Climate Hubs that engage in regular stakeholder engagement, and appropriate their research and other activities.
- b. Better resource and integrate private sector partners into agricultural extension and the Forestry Inventory and Analysis Program.
- c. Establish a competitive grant program to promote demonstration to deployment of new practices and technologies.
- d. Establish strategic research initiative on the role of forest and wood products in sequestering and storing carbon.





Measurement and Verification

Direct ARS to set protocols for climate-related research trials

- Direct ARS to set protocols for climate-related research trials.
- Utilize ARS technical knowledge and capabilities to develop protocols for the testing of various products related to claims around climate methodology.
- Incorporate adaptation, mitigation and resilience into the maximum extent practicable in research projects.
- Work in collaboration with USDA's Office of the Chief Scientist.

Value: ARS has a vast network of laboratories and scientists that can be leveraged to provide critical answers to research questions around regional and crop- and livestock-specific measures to adapt, mitigate and become more resilient to climate change. Technical expertise could help create universal standards for measurement protocols.

Provide NRCS funding to expand the number of soil sampling reference sites

The 2002 farm bill approved NRCS funding to build out and maintain 3,500 soil sampling reference sites. In 2009, however, funding to complete the network of reference sites was cut. Currently, there is funding to maintain 1,200 sites, which were set up prior to 2009.

- Fully build out the reference site network to 5,000-7,000 sites. (This recommendation comes from the National Academies.)
- Test sites on a rotating basis every five years.

Value: A fully built out, national on-farm soil monitoring system would provide an ongoing, statistically relevant data stream that could be used to inform carbon markets, as well as farm planning and decision-making. Similar networks already exist in many countries, including in the European Union, New Zealand, China and Australia.

Provide NRCS funding to improve USDA's COMET tool

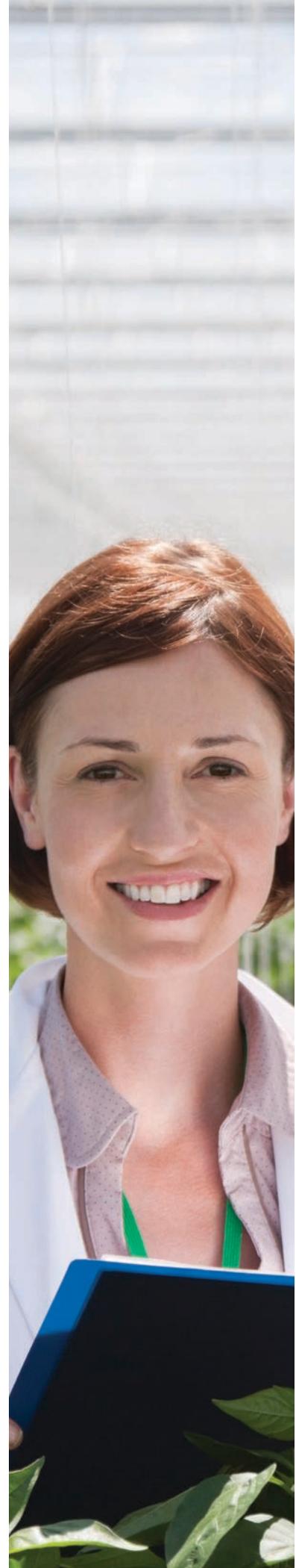
USDA's COMET tool provides data and analysis on practices and climate benefits to an individual farm or ranch. The COMET tool was announced in 2013 and, by most accounts, could benefit from improvements and enhancements.

- Provide funding for the COMET tool to improve systems integration with existing data sources and models and make other improvements.

Value: The COMET tool provides critical information for farmers and the public to quantify GHG emissions and carbon sequestration linked to the adoption of conservation practices. Providing critical updates on the latest data and science will ensure greater accuracy.

Establish a strategic research initiative to improve forest carbon measurement and monitoring technologies

- Develop technologies to reduce the costs and make it easier to measure and monitor forest carbon, especially for forest inventories and verification. Such technologies would improve forest owner participation in carbon crediting opportunities and in a potential future landowner tax credit for carbon sequestration. Measurement and monitoring are among USDA's greatest strengths, but funding to be successful would need to be on the scale of \$20 million over five years. The initiative would include:
 - **Technology research and development.** Funding would enable the Forest Inventory and Analysis Program to use new or improved technologies for forest inventories and verification. This work would build on current program work on satellite and remote sensing research, including work with NASA.
 - **Improved data collection.** Align data collection in the West region (currently 10 years) to the East region's five-year remeasurement cycle.
 - **Harvested wood products calculations.** Update accounting methodologies for harvested wood products for use in carbon offset programs and other applications.





Value: Reduce some of the highest costs of participating in carbon markets for forest owners of all sizes — inventories and verification — and improve measurement of carbon sequestration outcomes for many purposes. This research would support the success and landowner participation in the tax credit and in voluntary and compliance carbon markets.

Outreach and Deployment

Formally codify and fund USDA’s Climate Hubs and promote stakeholder engagement

The Regional Hubs for Risk Adaptation and Mitigation to Climate Change (or “Climate Hubs”) were launched in 2014 to establish regional networks on climate science and serve as forecast and data centers. There are seven hubs and three subsidiary hubs organized by region.

- Codify the Climate Hubs into law with mandatory funding.
- Ensure collaboration between the hubs and a formal linkage with other USDA agencies, including NRCS, FSA, ARS, Risk Management Agency, Economic Research Service, National Agricultural Statistics Service and Forest Service.
- Facilitate regular stakeholder engagement to drive research in various regions and across all sectors.
- Establish a new field experiment network through the hubs to evaluate and further develop region-specific best management practices for soil carbon sequestration and net GHG reduction in the agriculture and forestry sector. This research should be jointly conducted by USDA and land-grant universities, starting at 10 sites at a cost of \$600,000 per site. As part of this, provide an additional \$500,000 per year to support four to five regional projects to identify solutions to overcome barriers to adoption. (This recommendation comes from the National Academies.)
- Add an emphasis on livestock throughout the regions to look at feed and manure management (pasture and grazing is currently included).

Value: Formally codifying the Climate Hubs and providing dedicated funding will better ensure cross-regional collaboration between the hubs and within USDA agencies conducting climate research.

Better resource and integrate private sector partners into agricultural Extension and the Forest Inventory and Analysis Program

Extension provides informal educational activities to farmers and ranchers throughout the country. The Forest Inventory and Analysis Program represents the only source of national and consistent forest data and analysis, but the program must be fully funded to provide users with enhanced program delivery and more accurate and reliable data for carbon accounting, monitoring and measuring land use and cover change, and full value from timber survey data.

- Better integrate private sector partners, such as agricultural retailers, cooperatives, seed and feed companies, with Extension services to help demonstrate and disseminate information on new practices that will help farmers and forest owners with resilience, adaptation and mitigation. Examples of work by private sector partners could include hosting field days and educational seminars.
- Increase resources and formally link Extension and the Forest Inventory and Analysis Program with the Climate Hubs to better connect farmers, ranchers, forest owners and on-the-ground decision-makers with usable climate science that will assist in planning and application.

Value: Increasingly, farmers and forest owners are looking to private sector, state, academic and other on-the-ground organizations for information on new practices and methods that help them adapt, mitigate and become more resilient to climate change. The Extension network and the Forest Inventory and Analysis Program would benefit from partnering with these trusted advisers to maximize reach. Climate change presents an existential threat to agriculture and forestry — thus it's time to reimagine Extension and accelerate the deployment of research findings and new technologies.





Establish a competitive grant program to promote demonstration to deployment of new practices and technologies

- Create a competitive research grant program that focuses on demonstration of new technologies and practices that will allow the private sector and nonprofit organizations to partner with farmers and private forest owners to try out new practices to reduce GHG emissions and sequester carbon. Projects will have a demonstration component to link to Extension and facilitate dissemination of information.
- Model the program after Conservation Innovation Grant on-farm trials.

Value: The current “valley of death” for a myriad of technologies to reduce emissions exists in scaling from small demonstration to wide-spread adoption. If research is proven to reduce emissions and provide an environmental benefit, farmers, ranchers and foresters must be able to quickly test the new technology to ensure it is a good fit for their operation.

Establish a strategic research initiative on the role of forest and wood products in sequestering and storing carbon

Market development and expansion

- Bolster building with wood across a broader range of structures — increasing the amount of domestic wood in residential homes (interiors and siding) and expanding the use of wood in tall buildings, public works and infrastructure projects such as bridges and sound barriers.
- Fully fund USDA’s Wood Innovation Grants at \$25 million/year, and increase the focus of the program on technology transfer and projects that address technical and educational barriers to scaling adoption in wood building design and construction.
- Increase funding by \$1 million/year for USFS Forest Products Laboratory for wood use technology transfer and market research/demonstration, and by \$3 million/year for ThinkWood for new product development and demonstration research for new innovative wood products. Increase the proportion of competitive grants awarded to applied R&D, and shift the emphasis from basic research to development that promotes innovation.

Research changing market dynamics

- Research how dynamics, including COVID-19 and climate change (e.g., flooding and sea level rise), will impact housing and broader construction markets, and how wood needs to adapt to be a solution. Provide funding of \$10 million/year in a competitive grant program through USDA and relevant universities.

Climate benefits of wood utilization

- Conduct life cycle analysis research on the climate and related environmental benefits of wood products to better document and address gaps.
 - Ensure funding of at least \$500,000/year for the USFS Forest Products Lab to continue current life cycle analysis work on U.S. wood products. The lab has no current 2020 budget, so securing this funding is critical.
 - Increase funding for USDA's Forest Inventory and Analysis Program to \$80 million for FY21, which would enable the program to carry out related research in collaboration with National Association of University Forest Resources Programs and other partners.

Prioritize forest climate research on these issues: soil carbon, carrying capacity of lands targeted for reforestation, emerging risks to forests and sequestered forest carbon, and climate flow and resilience analyses across U.S. forests.

Value: Strengthen the science regarding the role of wood in a low carbon economy, enabling architects, builders and communities to reduce their carbon footprint while supporting jobs, rural economies and the sustainability of our forests. This research would support the success of the tax credit for building with wood and broader carbon benefits from wood markets.

