April 29, 2021
The Honorable Thomas J. Vilsack
U.S. Secretary of Agriculture
U.S. Department of Agriculture
1400 Independence Ave., S.W.
Washington, DC 20250

Dear Secretary Vilsack:

Thank you for the opportunity to respond to USDA's request for information and to share our recommendations to encourage the voluntary adoption of climate-smart agriculture and forestry practices and equitable access to USDA's programs and resources. We appreciate the attention to agriculture in President Biden's Executive Order on Tackling the Climate Crisis at Home and Abroad, and the appointment of renowned expert Robert Bonnie as the senior advisor on climate issues at USDA and now the Under Secretary for Farm Production and Conservation.

The establishment of USDA's Regional Climate Hubs in 2014 was a huge step forward in recognizing the need for science-based, region-specific information and tools to help farmers make climate-smart investments and decisions. Today, the need is more urgent than ever, and investment is required throughout USDA.

Through this letter, Environmental Defense Fund offers recommendations to USDA to improve the mitigation of greenhouse gases in the agricultural sector and improve the resilience of farmers and rural communities. These recommendations are consistent with the new Nationally Determined Contribution (NDC) submitted by your Administration. EDF's analysis shows this NDC is consistent with the latest science and reflects the contributions the agriculture and forestry sectors can make.

EDF also urges USDA to further bring equity and environmental justice to the forefront and applauds the appointment of Karama Neal, whose work on promoting passage of the Uniform Partition of Heirs Property Act puts her in a great position to be an advocate for minority farmers as the new Administrator for the Rural Business-Cooperative Service.

Our experts would welcome the opportunity to provide additional information and support the department in its pursuit of climate and conservation priorities. Thank you again for the opportunity to comment and please do not hesitate to reach out with any questions or additional opportunities to assist the agency.

Sincerely,

Britt Groosman
Vice President, Ecosystems and Oceans
Environmental Defense Fund

EXECUTIVE SUMMARY

Farmers, foresters and landowners are squarely at the intersection of climate adaptation and mitigation. Domestic farming operations contribute approximately 10% to overall U.S. greenhouse gas emissions and are also at high risk from climate-induced stressors such as heat, drought and pests. USDA can and should play an important role to maximize GHG sinks and minimize emissions from the agriculture sector, thus putting America's working lands to work for climate action and ensuring the benefits and burdens of climate action are distributed equitably.

EDF recommends that USDA prioritize efforts that meaningfully contribute to both emissions reductions and to improving resilience of growers and communities. The recommendations in this submission are lengthy and wide-ranging but are grouped and summarized in this executive summary.

First, USDA has an important role and opportunity to provide clarity and establish confidence in newly emerging voluntary carbon markets. USDA should build a framework for quality assurance by setting quality objectives for the credits produced by the agriculture sector. This framework would not prescribe the use of specific standards but instead ensure that the voluntary credits assessed across different climate registries are comparable and equivalent. The USDA framework would also be used to assess, score and certify registries' methodologies while also categorizing credits in accordance with their level of scientific certainty and integrity. All protocols and evaluations should be publicly available.

As USDA develops and implements a quality framework, it should consider additional measures to ensure a well-rounded approach. For example, USDA could guarantee credit prices by establishing a floor as a buyer of last resort for qualified credits. This could be done through a carbon bank or other method. USDA should also carefully consider how best to incorporate the practices of early adopters to ensure additionality and reduce the risk of practice reversal. Finally, USDA should prioritize technical assistance to potential market participants to ensure quality credit development and to equalize access to the emerging voluntary markets.

Second, USDA has tremendous opportunity to deliver climate benefits through existing programs at the Natural Resources Conservation Service and the Risk Management Agency. As climate change is likely to disrupt historical weather patterns and prevent historical models from accurately predicting future risk, RMA should develop and pilot risk models that combine backwards-looking data and forwards-looking climate models to measure their efficacy in pricing risk. RMA can also analyze and create incentives for farm-level management strategies that improve climate resilience. NRCS should capitalize on its experience with the Conservation Innovation Grants and the Regional Conservation Partnership Program to advance and scale the next wave of conservation and sustainable finance investments. These grantmaking and financing capabilities can spur private investment, reduce risk and grow investor confidence in conservation projects.

Third, USDA should prioritize scientific and economic research and incorporate this research into practice-based projects to advance the knowledge base and utilization of climate-smart practices on

farms. USDA should actively improve the rigor and transparency of climate models and measurements to support the efforts of the U.S. Greenhouse Gas Inventory and private carbon markets. There is an opportunity to scale up soil monitoring systems now, while developing new technologies that will drive down costs in the future. USDA should also advance critical research at the Economic Research Service that focuses on the suite of financial incentives available to speed the adoption of mitigation and resilience practices regardless of operation size, region or commodity. USDA's ability to manage and share data with trusted research partners will be key to solving tough problems quickly and efficiently. Finally, USDA should focus on developing new strategies and practices for deployment of conservation and climate-smart practices on both row crop and animal operations.

Fourth, USDA should continue to dedicate resources, staff and attention to address past injustices and implement its goals on equity and environmental justice. The department should actively seek out and internalize input from frontline and socially disadvantaged communities and incorporate representatives from those communities in decision-making and USDA staff at all levels. To address systemic inequities in this area, USDA should fully and rapidly implement civil rights reforms required by the American Rescue Plan and implement further financial relief mechanisms to meet the specific needs of socially disadvantage famers. Funding or set-asides should be targeted to support socioeconomically vulnerable communities and USDA should strengthen technical assistance, training and educational opportunities that are critical to the success of conservation and agricultural operations, but that are often difficult to access. USDA should also take comprehensive action to extend program eligibility and outreach to a variety to land ownership structures and improve the structure of the Farm Service Agency county committees to improve service to socially disadvantaged farmers and ranchers.

Finally, USDA urgently needs an updated national strategy for forests and wildfires, grounded in science and focused on public safety, that protects communities and ecosystems while allowing reestablishment of natural fire regimes. Specific prescriptions will vary in different regions and according to different needs and conditions on the ground. USDA has a tremendous opportunity through its existing programs and departments and through a potential new carbon bank to increase investments in the underlying science and in climate-smart forest management practices that can avoid unnecessary emissions (e.g., catastrophic fire) or enhance carbon storage. USDA should also support efforts to build infrastructure and industrial capacity in rural counties to strengthen existing sustainable forest products businesses and grow new businesses to create jobs and enhance rural livelihoods.

I. CREAT ROADMAP FOR EMERGING CARBON MARKETS

USDA Role in Setting a Quality Framework

The voluntary market in GHG emissions reductions or net carbon sequestered (hereafter referred to as "credits") in the agriculture and forestry sector is growing rapidly with a wide range of differing crediting protocols. USDA can help provide clarity by establishing a framework for quality assurance. This framework would not prescribe the use of specific standards (protocols/guidelines) but would instead set quality objectives to ensure that the voluntary credits assessed across different climate registries are comparable and equivalent.

Current protocols differ in the treatment of additionality, uncertainty, permanence and reversal, leading to inconsistency of credit quantification. This uncertainty results in reluctance among both potential credit providers (farmers, foresters or intermediate project providers) and buyers. A protocols assessment by USDA would reduce risks across markets and could assist with project aggregation at scale to address reversal, additionality and permanence.

We propose that USDA establish a Technical Advisory Group (TAG) to define criteria for GHG quantification, monitoring, reporting and verification (MRV), and social impact guardrails. EDF along with partners WWF and Oeko-Institut authored a report that identifies six "quality objectives" for carbon credits and establishes specific criteria that can be used to evaluate credits against each of these quality objectives. TAG deliberations would be transparent and published on the USDA website. TAG membership would be drawn from USDA, civil society and carbon market experts. Once criteria are agreed among the TAG, USDA would publish the criteria.

USDA Role in Assessing Voluntary Market Credits

The USDA framework would be used to assess, score and certify registries' methodologies and categorize credits in accordance with their level of scientific certainty. USDA would publish the evaluation of protocols, driving all protocols to adhere to the quality criteria set by USDA.

In addition, USDA, in consultation with EPA, would categorize carbon credit types according to the current level of confidence on their scientific integrity. This could take the form of:

- **Class A:** Credits based on practices that generally produce emission reductions or sequestration opportunities with sufficient scientific certainty — established by USDA and USEPA — with the ability to inventory the volume of carbon dioxide equivalent (CO2e) reduced.

- **Class B:** Credits based on practices that are in the "climate family" but do not currently warrant classification as carbon credits (i.e. should not be used to offset other emissions). Such practices would be promoted through existing farm bill conservation title programs, as these practices may contribute to net mitigation, but the biophysical science and subsequent accounting is currently too uncertain to issue credits. As the scientific knowledge and

integrity of the climate benefits of these practices increases, Class B practices could be moved into Class A.

As it classifies credits, USDA will also need to consider how to "grandfather" in historical best practices. USDA should consider how to treat growers who have already incorporated climate-smart practices (Class A or B above) to protect against the risk of reversals of practices as producers aim to reset their baseline. Although additionality is a cornerstone for a carbon market, when setting up a new market it is important to incorporate policies to protect against reversal. How to best "grandfather" in existing providers would be another task for the TAG and would likely be in consultation with industry.

USDA Role in Guaranteeing Market Demand and Price Setting

USDA could guarantee credit prices by establishing a price floor as a buyer of last resort for qualified credits through a carbon bank or other mechanism. Agricultural, livestock and forestry project developers would be incentivized to generate quality credits when USDA can guarantee demand for those credits. This system should be contingent on projects meeting USDA certified quality standards and standards should increase over time to incentivize innovation, achieve outcomes and prevent stagnation.

USDA Role in Providing Technical Assistance to Access the Market

USDA should increase and target technical assistance that helps farmers and ranchers plan their GHG mitigation and adaptation efforts and skillfully implement those plans.

Additional Roles for USDA Include:

- **Collecting and publishing market data.** In coordination with EPA and State Department, USDA should report yearly on the status of voluntary carbon markets, including where voluntary reductions credits are used in compliance markets such as California's Air Resource Board Emissions Trading Program. Reporting should be similar to USDA's published commodity reports.

- **Collecting and analyzing data on landscape levels.** This would allow USDA to monitor outcomes at landscape scales and estimate the changes in storage at these "jurisdictional" (e.g. counties or states) or landscape levels. This would provide a cross-check on voluntary projects (or USDA policies) that might claim too much — and establish the basis for future larger-scale crediting. USDA could categorize, research and update potential credits from agriculture, livestock and forestry as more is learned. USDA should also evaluate how to leverage this data access to consider the benefits of a regional scale program (regional vs. individual producer level), grouping regionally within agro-ecological zones to absorb the risks of uncertainty, leakage, reversals and additionality at a regional or agro-ecological zone level.

- **Equalizing access to markets.** USDA should engage with environmental justice or small farmer organizations that can effectively communicate producer needs and address equal access to USDA programs. This should occur very early in USDA's engagement with private voluntary GHG markets. Based on this engagement, USDA may choose to treat small farms or low-income farmers differently than their large-scale counterparts. Large farming operations have different economies of scale, face lower prices for inputs and can more easily engage in climate-smart activities relative to smaller farmers. USDA policy that accounts for these differences and applies appropriate incentives based on farm size should help smaller or disadvantaged producers participate in a voluntary market.

- **Ensuring non-GHG environmental injustices are addressed.** Dust, odor and high strength lagoon liquid as spray irrigation drift from confined animal feeding operations can reach nearby residents' homes, community buildings and schools. As the agricultural sector works to reduce livestock related GHGs, it must also listen to communities that experience environmental injustices and work to address these injustices. USDA must prioritize the most vulnerable communities and coordinate efforts to ensure additional local impacts from farming, such as harmful air and water quality and the associated public health risks, are remediated. USDA should work with the private sector to research, develop and bring new technologies to scale that can address these externalities alongside GHG reduction efforts.

II. LEVERAGE FINANCIAL TOOLS TO DELIVER CLIMATE BENEFITS

Opportunities Within the Federal Crop Insurance Program

The Risk Management Agency aims to appropriately price current risk to agricultural producers through pricing methods using a rolling 20-year model of individual year and crop data. However, climate change is likely to disrupt historical weather patterns over the coming years, causing historical models to improperly predict future weather. Furthermore, appropriately pricing the risk on a yearly basis does not itself reduce risk and subsequently the federal fiscal exposure. A recent report by USDA Economic Research Service and the Office of Management and Budget explains that climate impacts are expected to increase the cost of the federal crop insurance program and that the level of climate adaptation affects the level of fiscal exposure. To address this issue, RMA should develop and pilot risk models that combine backward-looking data and forward-looking climate models to measure their efficacy in pricing risk.

RMA can also analyze and create incentives for farm-level management strategies that improve climate resilience. One of the foundational steps in boosting farms' climate resilience is the improvement of soil health by using conservation practices such as cover crops and conservation tillage. Two other core strategies that build climate resilience in agriculture are water management and crop and livestock diversification. There are multiple opportunities for RMA to elevate and promote agricultural climate resilience, including:

- RMA should endeavor to create incentives for production systems and practices that reduce risk over multiple years or crops. This should include analysis of risk mitigation benefits of conservation practices and diverse crop rotations across multiple years and crops in order to better reflect impacts on the cost of the program. RMA should proactively incorporate the proven resilience benefits of conservation practices into the Federal Crop Insurance Program. For example, RMA could incorporate practices into Good Farming Practices standards, providing crop insurance discounts to farmers using practices that enhance resilience including cover crops, diversified crop rotations and reduced tillage.

- RMA should increase funding and outreach to increase enrollment in the Whole Farm Revenue Protection insurance policy that facilitates insurance participation by more diversified operations. To incentivize risk mitigation within the farm enterprise, RMA should increase incentives for transitioning to crop insurance by whole farm units, as in WFRP, or enterprise units rather than basic or optional units. RMA should test extension of the diversification incentive already incorporated to WFRP to other policies, or across policies.

- RMA should also assess the impacts of crop insurance program participation on adoption of practices and production systems with demonstrated resilience benefits. This should include systemic issues impacting the vulnerability of both price and yield to future disruptions associated with climate change including farm scale, length of supply chains, farmer demographics and other issues.

- USDA should advance data sharing opportunities between NRCS and RMA to facilitate analysis of the impact of soil health and conservation practices on production risk across regions. Enabling data sharing and research could help RMA create actuarially sound crop insurance policies that incorporate a suite of practices in different regions across the country that enhance climate change resilience. RMA should collaborate with FSA to use the Non-insured Crop Disaster Assistance Program as a source of data for crop insurance development and as a mechanism for testing pilot policies.

Opportunities for Conservation Finance and Farm Lending

Private investments in green and sustainable finance instruments are on the rise and there is growing investor interest in climate-smart and resilient agriculture investments. USDA NRCS has been a leader in supporting the development of these efforts through its Conservation Innovation Grants and Regional Conservation Partnership Program. USDA also has a history of providing credit enhancements such as FSA guaranteed loans. These capabilities can be leveraged in combination to advance and scale the next wave of conservation finance investments.

The development and growth of green and sustainability finance instruments often requires blended finance and/or risk mitigation to help test the instruments and grow investor confidence. Blended finance is low-cost, long-term capital that helps improve the risk-return profile of an investment for the main investors. Risk mitigation can include credit enhancements such as loan guarantees or loan-

loss reserves that guarantee a certain amount of repayment in the event of non-repayment or loss of value. USDA should leverage its grantmaking and financing capacities to spur private investments in conservation through these tools.

A key opportunity on the horizon includes collaboration with agricultural lenders (including agricultural banks and Farm Credit Associations), many of which have set their own sustainability and climate targets and priorities. USDA has the opportunity to accelerate lender engagement in supporting farmers to adopt climate resilient forms of production, which ultimately will reduce farmer and lender risk.

III. IMPROVE RESEARCH, DATA COLLECTION AND DATA SHARING

USDA Role in Improving Soil Monitoring Systems and Technologies

USDA should actively improve the rigor and transparency of climate models and measurements to support the efforts of the U.S. Greenhouse Gas Inventory, private carbon markets and identify adaptation priorities. Federal investments in climate-smart agriculture and forestry should be backed by strong science, using both intramural and extramural research to build the evidence base around the contribution of agricultural practices to GHG emissions and net carbon sequestration.

A national monitoring system, analogous to the USDA Forest Service Forest Inventory and Analysis, that addresses both field-scale and landscape-level climate impacts could enhance the rigor of the measurements and models that underlie public investments and private markets. That monitoring can be used to develop a quantified baseline for net GHG storage projects.

There is an opportunity to scale up soil monitoring systems now, while developing new technologies that will drive down costs in the future. The following measures will help USDA build the foundational knowledge necessary to measure the climate impacts of agricultural systems and practices with greater rigor than current efforts can achieve:

- Improve the modeling of GHG emissions and carbon sequestration in agricultural soils, livestock operations and forests by funding and conducting research to improve baselines and account for regional variability, greater differentiation of crop, livestock, and forestry systems, spatial resolution variability, and sources of uncertainty.

- Establish a national soil carbon and nitrous oxide emissions sampling and monitoring network, leveraging Agricultural Research Service and Natural Resource Conservation Service research sites together with land grant universities.

- Link the existing NRCS National Web Soil Survey and National Resources Inventory to better leverage these tools for monitoring changes in soil carbon storage.

- Develop regional databases of practice adoption and reversal rates to address additionality and reversal issues for different commodities within regions for use in MRV protocols and to support project aggregation efforts for regional risk reduction.

- Integrate remote sensing tools (e.g., LIDAR, satellite imagery) with FIA and other field plots to improve accuracy and resolution of estimates of GHG emissions and sequestration in woody biomass (including forests, trees in croplands and grasslands, and urban trees).

- Research the durability of carbon sequestration, including dynamics such as the relationship between the length of practice implementation and accrual of soil carbon, effects of practice reversion and termination.

- Develop and pilot more precise and cost-effective carbon measurement tools for agricultural soils. Calibrate model and ARPA-E SMARTFARM programs to real soil measurements and assessment of net carbon sequestered.

- Assess and coordinate USDA, DOE and ARPA-E SMARTFARM programs to research and quantify the net GHG footprint from different biofuel feedstocks, including land use impacts and opportunities for expanded use of agricultural biomass and processing food loss and waste.
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- Expand the Higher Blends Infrastructure Incentive Program mandate to include research on the production of biofuels at the lowest carbon intensity possible by supporting the development of cellulosic ethanol, incentivizing the use of climate-beneficial conservation practices, and developing improved monitoring and accounting methods of land use conversion impacts due to conversion of perennial pasture lands and CRP acres to annual cropland.

- Coordinate the development of protocols or MRV requirements for the reduction of enteric emissions of methane from cows and a process for those reductions to be inventoried. Efforts are underway to reduce enteric emissions using feed additives, breeding and other approaches, but more research and investment is needed.

- Audit the state of the science on climate impacts of various livestock and grazing practices and determine which are most likely to reduce risks and contribute to climate change mitigation.

USDA Role in Advancing Economic Research and Incentives

USDA should utilize the expertise of the Economic Research Service to advance critical research necessary to inform policy and investments in climate-smart and resilient agriculture. ERS should focus research on the suite of financial incentives or markets available to speed the adoption of practices that reduce GHG emissions and promote resilience while considering the impacts of

climate-smart practices on the diversity of agricultural operations, including dynamics such as size, region, commodity and level of capital that can influence profitability. Most importantly, the findings must be shared publicly.

ERS should advance research on the following topics:

- Expand on the 2019 ERS report, *Climate change and agricultural risk management in the 21st century*, by researching the relative federal fiscal exposure impacts of incentivizing climate adaptation and resilient practices through crop insurance.

- Gather and disseminate commodity costs and returns specific to farming systems utilizing in-field conservation practices including cover crops and conservation tillage. Include this data in the ERS commodity costs and returns data services. Additional research is needed on the financial benefits and barriers to farmer adoption of conservation practices including the cost of implementation and return on investment for individual growers that adopt individual or stacked climate-smart practices.

- The quantification of public benefits derived from climate-smart practices, including landscape-level impacts. These could include linked benefits between working lands and the built environment for flood risk reduction, water quality improvements or fire risk reduction (e.g., Iowa Watershed Approach funded by HUD), as well as efforts to quantify multiple benefits from existing farm programs like the Conservation Reserve Program.

- The potential positive and negative impacts of current federal policy incentives on conservation practice adoption and crop and livestock diversification, including how adjustments to the federal crop insurance could promote conservation. This work could also consider the use of Marketing Assistance Loans for diversification of farming operations.

Improving USDA Data Standardization and Cooperation with Trusted Partners

Connecting the extensive agricultural research community to USDA's vast agricultural datasets is a critical strategy to answer key research questions quickly and efficiently about the multiple benefits of climate-smart agricultural practices. USDA should engage trusted research partners in advancing USDA research priorities by developing and piloting tools for farmers and university researchers to access and standardize anonymized USDA datasets.

The scale and scope of the agriculture research investments needed to prepare farmers for climate impacts and adaptation can be accomplished through partnerships with land grant universities, commodity groups and other trusted partners. Researchers and corporations should be encouraged to share their data within this anonymized data framework. Creating channels to clearly communicate how producer data is being used, allowing producers to opt in or out of research projects, and communicating the results of research that producers opt into can build trust in the farmer and rancher community that their data is being used responsibly and effectively to generate knowledge

that will ultimately benefit their operations. USDA should establish and maintain shared public research data repositories to allow all users to benefit equally in data that improves all ecosystem quantification methodologies (e.g., process models).

Increase Research and Development of Climate-Smart Practices

USDA should expand knowledge of potential regional climate impacts and climate-smart agricultural practices and invest into researching new practices to fully engage the full diversity of U.S. farmers, ranchers, and production systems in conservation. There is a strong body of existing knowledge about the benefits of common conservation practices in major row cropping systems (e.g., cover cropping and no till) that can be leveraged to expand adoption of some practices today. However, there is also a need to develop new strategies and practices, particularly for other crops and for animal operations. This includes developing additional tools for the major sources of emissions from livestock and nitrogen application and harnessing bioenergy from crop, food processing and livestock waste management and on-farm energy use.

USDA should also consider tools that work with the constraints and economics of smaller operations. The following recommendations are designed to help USDA fill existing practice and knowledge gaps to facilitate broader practice adoption among U.S. producers. USDA should invest in or conduct research in:

- Crop breeding for deep-rooted or perennialized analogues to current commodity crops that would sequester more carbon in root systems.

- Seedling production for reforestation efforts.

- Management approaches to minimize impacts of wildfire and pest outbreaks.

- Developing, validating and piloting commercial technologies that reduce emissions, such as nitrogen inhibitors, soil carbon measurement tools and livestock feed additives.

- Consider expansion of incentives for increasing on-farm energy efficiency, including replacement of less energy efficient farming equipment.

- Opportunities for bioenergy production using agricultural biomass and food processing waste streams.

Increase Investment in Climate Adaptation

Climate change is already impacting our working landscapes. Increasing frequency and intensity of drought, catastrophic wildfire, heavy rainfall and hurricanes are resulting in devastating crop and livestock losses, and loss of producer livelihoods. USDA should expand its efforts to help producers and the entire food supply chain better understand climate vulnerabilities and build practical pathways and strategies for adaptation in the following ways:

- Reinvigorate USDA Climate Hubs to provide guidance in the form of practical, applied research and tools to help producers and supply chain partners prepare for and adapt to climate change.

- Increase investment in applied research and synthesis of existing knowledge. Challenge Land Grant institutions through competitive grant programs to deliver the most practical, useful knowledge that can stimulate early adaptation to avoid shocks to affected industries.

- Build capacity for the research community to identify near-term climate-driven vulnerabilities through increased modeling capacity. Current models have validity at relatively large scales and in the distant future (mostly 2050) making the results seem less relevant and actionable.

IV. PRIORITIZE EQUITY AND ENVIRONMENTAL JUSTICE

Bring Equity and Environmental Justice to the Forefront

EDF strongly supports USDA's recent attention to equity and environmental justice and we encourage the department to continue to dedicate resources, staff and attention to implementing its energizing goals in this area. In responding to these requests for information regarding Environmental Justice and Disadvantaged Communities, we urge the department to actively seek out and internalize input from frontline and socially disadvantaged communities themselves.

In addition to the suggestions below, and other policy options offered by diverse stakeholders, an important step to ensure that programs, funding and financing capacities are implemented equitably, and available to all landowners, producers and communities, is to diversify USDA staff across all levels. Procedural equity requires that decisionmakers reflect the stakeholders impacted. We are encouraged to see that USDA has initiated listening sessions with representatives from socially disadvantaged and minority communities, and fully support the fulsome integration of these perspectives into USDA policymaking in the future.

Address Inequities Experienced by Socio-economically Vulnerable Communities

USDA should fully and rapidly implement civil rights reforms required by the Emergency Relief for Black Farmers Act and incorporated in the American Rescue Plan, including establishment of the Independent Civil Rights Oversight Board, Equity Commission, Office of the Assistant Secretary for Civil Rights reforms. To ensure the success of these important initiatives, USDA should fully operationalize and integrate these entities into USDA functions, rapidly adopt recommendations and regularly assess progress.

Technical assistance and training, as well as educational opportunities, are critical to ensuring the success of conservation and agricultural operations, but socially disadvantaged communities often lack access to these resources. USDA should work to strengthen technical assistance and training opportunities in socially disadvantaged communities and diversify technical assistance providers, especially with 1890 and 1994 land grant universities. USDA should also work, to the extent

possible, to rectify the disparity in funding to 1890 and 1994 universities by urging states to make required matching grants and directing eligible programs and grant funds equitably.

Small, rural, low-income communities and communities of color often have finite resources and inadequate opportunities to participate in the design and execution of policy decisions that affect them. This reality leaves them potentially qualified to benefit from, but unprepared to take advantage of, federal funding opportunities. USDA should ensure that its funding programs provide targeted resources or set-asides to support socioeconomically vulnerable communities.

Monitoring and Oversight

USDA should improve the structure of the Farm Service Agency county committees to monitor and improve service to socially disadvantaged farmers and ranchers by increasing transparency and access to county committee elections, increasing training for members of the county committee on their role and the history of USDA discrimination, and increasing the role of the minority advisor and giving them the ability to vote.

Increasing Access to USDA Programs

Building on the provisions of the 2018 Farm Bill, which allowed tenants in common and heirs' property owners to qualify for farm numbers and thus many USDA benefits, USDA should take comprehensive action to extend program eligibility and outreach to a variety of land ownership structures, smaller, lower-revenue farms, farms with weaker credit histories, and those that lack clear title to their agricultural land. USDA should promptly issue guidance on equitable relief provisions of the 2018 Farm Bill to ensure that farmers who incurred an economic loss or were denied credit because of the actions of, or information provided by, a USDA employee can be compensated, or otherwise made whole, for lost farming revenue and any consequential losses.

Adapt USDA Programs to Address Systemic Inequity

USDA should offer additional credit assistance and programs specifically targeted at addressing systemic inequity. This should include offering socially disadvantaged farmers preferred terms on federally administered loans (e.g., zero percent interest rate for the first 7 years of loan term, with payments deferred for the first 24 months.).

FSA should prioritize loan restructuring in both direct and guaranteed loans, rather than farm foreclosure, by proactively and creatively using all tools possible including debt relief, automatic loan deferment and forbearance for both direct and guaranteed loans, interest assist, and flexible and emergency access to credit. Additional resources for estate planning and probate resolution could also help farmers build financial resilience.

EDF also supports Equitable Land Access programs proposed by other stakeholders and outlined in the Justice for Black Farmers Act, and we urge the department to request from Congress required resources and authorization for such a program.

Accountability for Historic Discrimination and Structural Racism at USDA

EDF supports USDA's efforts to create a Racial Equity Commission to identify and address barriers across USDA. USDA should also move quickly in implementing the provisions of the American Rescue Act, including debt forgiveness and additional funding for assistance and support to socially disadvantaged producers and groups.

USDA should re-initiate work with the Consumer Financial Protection Bureau to resume rulemaking pursuant to provisions in the Dodd-Frank Wall Street Reform and Consumer Protection Act that require collection of demographic data for some agricultural loans. When authorized by regulation, USDA should pursue comprehensive data on socially disadvantaged communities' outstanding agricultural debt and use that data to set targets for improvement and establish accountability measures.

V. CREATE NATIONAL STRATEGY FOR FORESTS, WOOD PRODUCTS AND CATASTROPHIC WILDFIRE

Restore Natural Fire Regimes While Protecting Communities

Wildfire dynamics vary widely across the U.S. and are immune to simple, formulaic responses and strategy. The historic emphasis on fire suppression at all costs, combined with dry climate conditions driven by global warming, have resulted in the accumulation of heavy fuel loads, greater vulnerability to forest pests and disease, and greater incidence of catastrophic fire. The federal government urgently needs an updated national strategy, grounded in science and public safety, that protects communities and ecosystem values while allowing reestablishment of natural fire regimes.

Our national wildfire strategy should have two priorities: 1) Protect communities in the line of fire; and 2) Reestablish natural fire patterns to protect ecosystem values and sustainably manage fuel loads. Reestablishing natural fire regimes can only be realized when fuel loads, particularly in the West, are greatly reduced using both mechanical treatments and prescribed and managed fire. Implementation will require an updated wildfire triage approach to ensure that we address the most pressing threats to communities and human lives, first.

Using fire as a management tool requires as a precondition that communities feel that their lives and property are safe and secure. Where and when this condition is met, managers will have greater flexibility to manage vegetation in wildlands.

A special burden falls on USDA Forest Service due to its management responsibility for National Forests and Grasslands. USDA can act now to revitalize and reorganize the Forest Service in support of a new national fire strategy, an effort that will require an all-hands-on-deck commitment from staff scientists, fire practitioners, land managers and community outreach specialists. Specific recommendations include:

- Establish a Wildfire Commission, co-chaired by the Secretaries of Agriculture and Interior and bipartisan western governors to develop a new western fire strategy that will increase the pace and scale of ecologically-sound fuel reduction treatments on all lands (federal, state, private and tribal), modernize firefighting response and increase the use of prescribed fire.

- Address significant gaps in our national approach to forest pest and disease — both native and non-native invasive pests and disease — including increasing funding for research, monitoring, detection and treatment on both federal and non-federal lands. USDA should work also with other federal and state agencies to address the significant risk to native vegetation arising from the wide import of products in wood packaging.

- Rebuild and restore staff capacity and morale within the USDA Forest Service by investing in science capacity within the research units, creating more sustainable career paths for staff, and creating a path to leadership positions for a diversity of critical job categories (e.g., not just timber and fire). Development of communication, community engagement, negotiation and partnership-building skills should be prioritized in recruitment and advancement.

- Expand year-round, career-track jobs for a new category of forest restoration practitioners that combine seasonal firefighting and forest restoration work.

- Create training opportunities for youth and members of disadvantaged communities.

Scale Climate-smart Forest and Woodland Management Practices

USDA plays a leading role in helping to ensure that forests and woodlands work in favor of climate mitigation. The specific prescriptions will vary in different regions and according to different needs and conditions on the ground. USDA has a tremendous opportunity through its existing programs and departments and through a potential new carbon bank to increase investments in the underlying science and in climate-beneficial forest management practices that can avoid unnecessary emissions (e.g., catastrophic fire) or enhance carbon storage. USDA can maximize this opportunity in the following ways:

- Increase investment in the Forest Inventory and Analysis program and continue to enhance its methods. Specifically, USDA should work with states to increase the rate of sampling (particularly in the West), incorporate new technology and remote sensing to complement field sampling, and increase modeling capacity to address time gaps in empirical data.

- Invest in new research and synthesis of existing research on all areas related to measurement and quantification of climate benefit from forest management practices at the stand and landscape scales. Particular attention is required for understanding the fate of carbon pools after thinning and timber harvesting operations (e.g., quantifying emissions from harvest, transfer of carbon from live tree to wood product pools).

- Build consensus within the science, forest industry and NGO communities to ensure that climate-smart forestry practices are recognized, valued and non-controversial.

- Translate applied research findings into guidance for landowners that is specific to their forest type and region. Many landowners want to contribute to climate mitigation and build resilience in their forests but lack the expertise or rely on unverified claims or advice meant for other forest types and regions.

- Create pathways for forest landowners to receive USDA financial assistance and access to private markets to help cover the cost of climate-beneficial practices.

Create Jobs and Economic Opportunities in Wood Products Industries

Restoring forests and implementing climate-smart management practices would create tens of thousands of jobs in rural, forested counties across America. Well-managed forests not only provide climate, water, wildlife and recreational benefits, but are a source of renewable building and other materials. Emerging technologies allow domestically produced wood products to be used in a wider array of building applications.

USDA should support efforts to build infrastructure and industrial capacity in rural counties to strengthen existing sustainable forest products businesses and grow new businesses to create jobs and enhance rural livelihoods. An important component of this capacity lies with small businesses that own and operate vital equipment for forest restoration operations. Many areas of the West lack capacity to take on restoration activities due to the absence of these operations.

In building plans for climate action in rural America, USDA Rural Development should evaluate opportunities to increase the use of lumber in buildings and other infrastructure (e.g. rural bridges) and provide financial and technical assistance to catalyze these opportunities. USDA should work closely with other federal agencies, especially the Department of Defense, to do the same.