NATIONAL SUSTAINABLE AGRICULTURE COALITION

November 22, 2019

Rep. Kathy Castor, Chair
Select Committee on the Climate Crisis
U.S. House of Representatives
H2-359 Ford Building
Washington, DC 20024

Rep. Garrett Graves, Ranking Member
Select Committee on the Climate Crisis
U.S. House of Representatives
H2-359 Ford Building
Washington, DC 20024

Re: Policy Recommendations on Climate Change and Agriculture

Submitted electronically to ClimateCrisisRFI@mail.house.gov

Dear Chairwoman Castor and Ranking Member Graves,

The National Sustainable Agriculture Coalition (NSAC) welcomes the opportunity to submit policy recommendations for the Select Committee to consider in their development of federal policy solutions required to effectively address the climate crisis. We applaud Congress for recognizing the severity of the problem, and we look forward to working with you and other members of the Committee to ensure farmers and ranchers have the tools they need to be leaders in nationwide efforts to significantly mitigate and adapt to the pressures of a changing climate.

NSAC is a national alliance of family farm, food, rural, and conservation organizations[i] that together take common positions on federal agriculture and food policies to advance sustainable agriculture. Our member organizations, and the farmers and ranchers they work with across the country, understand that climate change presents a severe and immediate threat to the agriculture sector and to both rural and urban communities across the country.

Not only are farmers and ranchers on the frontlines when it comes to the impacts of climate change – including droughts, floods, extreme temperatures, severe storms, and shifting pest and disease pressures – but they are also uniquely positioned to be part of the solution and significantly contribute to climate change mitigation. Through soil health management practices that sequester and store carbon in the soil, as well as through the adoption of agricultural systems that reduce greenhouse gas emissions, farmers and ranchers absolutely must be part of climate change solutions, and they must have a seat at the table as we work to develop policy solutions to address this pressing issue.

In that light, NSAC makes the following recommendations that engage farmers as part of the solution to climate change. Our recommendations are based in large part on a policy position paper we recently released, which takes a comprehensive look at the latest in agricultural and climate science[ii]. *Agriculture and Climate Change: Policy Imperatives and Opportunities to Help Producers Meet the Challenge* explores both the impact of climate change on U.S. agriculture, as well as the potential contribution of U.S. agriculture to global climate change mitigation, and puts forward detailed public policy recommendations to address agriculture's role in responding to the climate crisis.

Based on the research findings summarized in the paper, NSAC has developed the following policy priorities related to climate change and agriculture:

- Support producers to make US agriculture climate-positive
- Remove barriers and strengthen support for sustainable and organic production systems
- Support climate-friendly nutrient management to reduce N_2O emissions
- Support composting of manure and other organic "wastes"
- Build carbon sequestration potential of sensitive and marginal lands through grassland restoration, reforestation or other perennial plantings
- Support climate-friendly livestock production systems, and end subsidies for confined animal feeding operations.
- Support on-farm energy conservation and low-carbon renewable energy production
- Fund public plant and animal breeding for climate-resilient agriculture
- Reform crop insurance so that it supports climate-friendly sustainable and organic production systems

Key policy mechanisms based on these underlying principles include land use practices that maximize carbon sequestration in soil and plant biomass; improved nutrient management strategies that minimize the release of N_2O emissions; and support for transition to advanced grazing management to replace industrial livestock production systems.

We thank you for your serious consideration of our recommendations, and look forward to working with you to support innovative policies that bring farmers and ranchers to the table as a critical part of the climate change solution.

Sincerely,

Juli Obudzinski

Juli Obudzinski
Interim Policy Director

i Agriculture and Land-Based Training Association Salinas, CA; Alternative Energy Resources Organization Helena, MT; CCOF Santa Cruz, CA; CalCAN Sacramento, CA; California FarmLink Santa Cruz, CA; C.A.S.A. del Llano (Communities Assuring a Sustainable Agriculture) Hereford, TX; Catholic Rural Life St Paul, MN; Center for a Liveable Future – John Hopkins University Baltimore, MD; Center for Rural Affairs Lyons, NE; Clagett Farm/Chesapeake Bay Foundation Upper Marlboro, MD; Community Alliance with Family Farmers Davis, CA; Community Involved in Sustaining Agriculture South Deerfield, MA; Dakota Rural Action Brookings, SD; Delta Land and Community, Inc. Almyra, AR; Ecological Farming Association Soquel, CA; Farmer-Veteran Coalition Davis, CA; Florida Organic Growers Gainesville, FL; FoodCorps, OR; GrassWorks New Holstein, WI; Hmong National Development, Inc. St Paul, MN and Washington, DC; Illinois Stewardship Alliance Springfield, IL; Institute for Agriculture and Trade Policy Minneapolis, MN; Interfaith Sustainable Food Collaborative Sebastopol, CA; Iowa Natural Heritage Foundation Des Moines, IA; Izaak Walton League of America St. Paul, MN/Gaithersburg, MD; Kansas Rural Center Topeka, KS; The Kerr Center for Sustainable Agriculture Poteau, OK; Land Stewardship Project Minneapolis, MN; MAFO St Cloud, MN; Maine Farmland Trust Portland, ME; Michael Fields Agricultural Institute East Troy, WI; Michigan Food & Farming Systems – MIFFS East Lansing, MI; Michigan Organic Food and Farm Alliance Lansing, MI; Midwest Organic and Sustainable Education Service Spring Valley, WI; Montana Organic Association Eureka, MT; The National Center for Appropriate Technology Butte, MT; National Center for Frontier Communities Silver City, NM; National Hmong American Farmers Fresno, CA; Nebraska Sustainable Agriculture Society Ceresco, NE; Northeast Organic Dairy Producers Alliance Deerfield, MA; Northern Plains Sustainable Agriculture Society LaMoure, ND; Northwest Center for Alternatives to Pesticides Eugene, OR; Ohio Ecological Food & Farm Association Columbus, OH; Oregon Tilth Corvallis, OR; Organic Farming Research Foundation Santa Cruz, CA; Organic Seed Alliance Port Townsend, WA; Pesticide Action Network Berkeley, CA; Rural Advancement Foundation International – USA Pittsboro, NC; Union of Concerned Scientists Food and Environment Program Cambridge, MA; Virginia Association for Biological Farming Lexington, VA; Wild Farm Alliance Watsonville, CA; Women, Food, and Agriculture Network Ames, IA.

ii National Sustainable Agriculture Coalition. 2019. Agriculture and Climate Change: Policy Imperatives and Opportunities to Help Producers Meet the Challenge. Washington D.C. https://sustainableagriculture.net/publications

RECOMMENDATIONS

5a. Innovation: Where should Congress focus an innovation agenda for climate solutions? Please identify specific areas for federal investment and, where possible, recommend the scale of investment needed to achieve results in research, development and deployment.

- **Increase the capacity of the Sustainable Agriculture Research and Education (SARE) program to help farmers increase carbon sequestration and meet the specific regional challenges of a rapidly changing climate.**

  SARE is USDA's best-positioned program to contribute practical on-farm research and education for climate change mitigation and adaptation. For the past 30 years, SARE has been highly successful in building the knowledge and tools necessary to promote sustainable agriculture, and in getting these resources into the hands of actual farmers and ranchers. In many cases, producers themselves have been involved in developing and conducting research and education, adding a practicality to the outcomes that has yet to be matched by any other USDA research program. In addition, regional councils guiding the program ensure funded research is relevant to the regionally-specific challenges farmers face, which will be essential in the face of climate change.

  We therefore urge Congress to scale up investments in SARE by increasing SARE's current authorization for appropriations from $60 to $100 million. This increased funding will allow the program to explicitly incorporate climate change mitigation and adaptation into the program's mission and funded research. We also recommend an additional $50 million per year in mandatory funding for a new SARE Resilience Initiative dedicated to 1) research and development of climate-resilient farming and ranching systems that build soil health, sustain production and economic viability through diversified and climate-adaptive enterprises, and contribute to climate mitigation through carbon (C) sequestration and greenhouse gas (GHG) emission reduction; and 2) associated new market and food system development R&D – including systems research, extension, professional development, and farmer-led R&D.

- **Authorize Long-Term Agro-Ecosystem Research (LTAR) Network and focus long-term research on climate-resilient agricultural systems.**

  To provide long-term solutions to complex challenges faced by U.S. agriculture, the USDA Agricultural Research Service (ARS) launched a Long-Term Agro-Ecosystem Research (LTAR) Network in 2011. With a focus on integrating research that drives increased sustainable production while using system resources, the network links 18 existing long-term agricultural research sites nationwide that conduct projects across multiple agroecosystems-croplands, pasturelands, and rangelands. The goals of the LTAR Network are to deepen our understanding of agroecosystem function and to sustain and expand long-term agricultural productivity while restoring and improving soil, water, biodiversity, and other key resources. This work involves collaborations with other national and international scientific institutions to enhance the utility and implementation of research findings. As the climate crisis unfolds, LTAR has prioritized development of innovative, climate-resilient, and climate-mitigating

farming and ranching systems for different agro-ecoregions across the U.S., to be applied at the field, landscape, and regional scales.

However, the capacity of the LTAR Network to continue its vital work depends on continued investment into this one-of-a kind research network and leveraging support from the broader research community. In order to ensure this long-term research continues in the future, we urge Congress to permanently authorize LTAR and establish an authorization for appropriations of $5 million per year per site. We also recommend that Congress designate no fewer than 8 of the 18 current LTAR sites to focus the majority of their research on developing new systems of agriculture (i.e. organic and other agro-ecological systems) that are more resilient and support agriculture in becoming climate neutral with respect to GHG emissions.

- **Prioritize climate specific research and education within existing USDA competitive grants programs.**

  In addition to farmer-based research through SARE and long-term, whole-systems research through LTAR, additional investments are needed across all of USDA's research programs on climate adaptation and mitigation, including the Agriculture and Food Research Initiative (AFRI), Organic Agriculture Research and Extension Initiative (OREI), and other relevant USDA competitive grant programs.

  We would therefore urge that Congress not only scale up investments in funding for OREI and AFRI, but also establish specific climate research and education priorities within each program. Priority for extramural grants should be given to proposals focused on:

  - Designing and implementing practical, on-farm systems which increase stable carbon sequestration
  - Improving methods for measuring soil organic carbon – concentrating on creating assessment systems which are rapid, low-cost and remote
  - Designing and implementing practical, on-farm systems to optimize nutrient cycling and minimize nitrous oxide emissions from agricultural soils
  - Evaluating total GHG footprint of different livestock production systems
  - Designing and implementing intensive rotational grazing, silvopasture, and other advanced approaches to climate mitigation in livestock production
  - Breeding and developing new public crop cultivars and livestock breeds for resilience to climate disruption and performance in climate-mitigating farming and ranching systems

6. What policies should Congress adopt to reduce carbon pollution and other greenhouse gas emissions and maximize carbon storage in agriculture?

- **Establish a national goal and timeframe for U.S. agriculture to achieve carbon neutrality.**

USDA has made erosion reduction, healthy soils and improved water quality national priorities – which are reflected throughout USDA conservation, research, and rural development programs. Preventing erosion conserves soil organic carbon (SOC), building soil health enhances SOC accrual, and best nutrient management to protect water quality also reduces emissions of nitrous oxide (N_2O), which is U.S. agriculture's largest *direct* contribution to GHG emissions. Perennial plantings from perennial food and forage crops to permanent conservation buffers, silvopasture, and other agroforestry applications can sequester tons of C per acre. Advanced rotational grazing management systems further enhance SOC sequestration and reduce direct GHG emissions from livestock production By making a climate-neutral agriculture a national priority, USDA should logically focus a significant portion of conservation, energy, research, and rural development program spending on systems and practices that most-effectively store C and minimize GHG emissions; and support widespread adoption through funding allocations, financial and technical assistance for producers, ranking of program applicants, support services, and other policies throughout its suite of programs.

- **Establish climate mitigation/adaptation (including carbon sequestration and GHG emission reduction) as an NRCS Resource Concern.**

  Current NRCS Resource Concerns include soil (soil erosion, soil health), water (water quality, water conservation), air, plants, animals, and energy. All other NRCS activities and services (i.e. conservation planning, technical assistance, practice standards, financial assistance) flows from this list of established resource concerns. In essence, anything that is not a current NRCS resource concerns is not an identified problem, therefore does not get addressed within the NRCS system. It is therefore essential that climate mitigation and adaptation, not just soil health, be explicitly prioritized as a specific resource concern within all NRCS programming.

- **Revise all NRCS Conservation Practice Standards (CPS) and conservation enhancements to prioritize soil carbon sequestration and mitigation of N_2O and other GHG emissions.**

  NRCS has developed a set of four principles of soil health management, which provide sound, science-based guidelines for soil organic carbon (SOC) sequestration, GHG mitigation, and adaptation to the stresses of climate change:

  - Keep the soil covered
  - Maintain living roots as much of the year as practical
  - Diversify the cropping system to build soil biodiversity
  - Minimize soil disturbance (i.e. tillage, chemicals, overgrazing)

  A few additional principles for soil health, climate mitigation and adaptation include:

  - Integrate crop and livestock production[1]

[1] Brown, G. 2018. *Dirt to Soil: One Family's Journey into Regenerative Agriculture.* Chelsea Green Publishing, White Junction, VT. 223 pp.

- Return organic residues to the soil[2]

These six principles of soil health management (as outlined in *Agriculture and Climate Change*) should be used as a guide for maximizing the efficacy of NRCS Conservation Practice Standards (CPS), CSP Enhancements, and other conservation activities in enhancing carbon sequestration and mitigating and adapting to climate disruption. Specific criteria for each CPS that can affect carbon sequestration should ensure sequestration improvements, and considerations should provide practical information on maximizing carbon sequestration outcomes, including through combining the Practice with other Conservation Practices.

In addition, criteria for NRCS conservation activities, especially the Nutrient Management practice (CPS 590) and associated Enhancements, should be modified based on the latest science to effectively curb N_2O emissions while sustaining crop yields and soil health. Similarly, conservation activities related to management of livestock, manure, and other agricultural byproducts should be updated to maximize efficacy in mitigating N_2O and CH_4 emissions.

- **Restore funding for the Conservation Stewardship Program (CSP).**

Conservation programs, and especially CSP, can play vital roles in helping producers become part of the climate solution as well as preparing their operations to withstand the impacts of an increasingly unpredictable climate. The 2018 Farm Bill directed USDA to highlight soil health and increased payment rates for key soil health/carbon sequestration practices including cover crops, resource-conserving crop rotations, and managed rotational grazing. However, combined the 2014 and 2018 Farm Bills also cut CSP funding by nearly half, greatly restricting both farmer access and environmental improvement, including climate mitigation.

Congress must take steps to restore full funding for CSP not only to meet the already oversubscribed farmer demand for the program, but to also expand CSP's focus and utility to farmers in addressing climate adaption and mitigation through carbon sequestration, soil health and other conservation goals that can be addressed through CSP. Additionally, Congress should make climate resilience and mitigation clear priorities within CSP and develop regional climate bundles with incentives for farmers to adopt climate-friendly conservation practices.

- **Expand the role of the Conservation Reserve Program (CRP) to explicitly support carbon sequestration goals.**

USDA's Conservation Reserve Program (CRP) pays farmers to convert sensitive and marginal farmland from production to ground cover with predominantly perennial plant systems. In doing so, CRP provides one of the largest soil carbon sinks created by a federal program; however much could be done to enhance the carbon sequestration potential of CRP lands.

[2] Howard, Sir Albert. 1947. *The Soil and Health: A Study of Organic Agriculture*. University Press of Kentucky (2006), 307 pp.

For example, Congress could create a new permanent easement component within CRP that is specifically targeted to support highly effective carbon-sequestering and climate-mitigating practices such as forest buffers and other permanent vegetative covers. Permanent protection options could be targeted to the most highly erosive land or land with the highest ecological benefits for wildlife and water protection.

- **Rigorously enforce Sodsaver.**

  America's native grasslands are one of our most productive natural resources, providing wildlife habitat, flood mitigation, erosion control, and helping to sequester significant amounts of carbon dioxide. Unfortunately, these lands are also some of the most threatened natural resources in the country. While much of the remaining prairie in the U.S. is not well-suited for crop production, federally subsidized crop insurance makes it easier for producers to till up and plant on native grasslands by reducing the financial risk of doing so.

  Recognizing this, Congress established what is known as a Sodsaver provision in the 2014 Farm Bill, which protects grasslands by reducing crop insurance premium subsidies on land that is tilled from native prairie. Many of these grasslands are in areas with high erosion levels when perennial cover is removed, or with naturally wet or slow-draining soils in which tile drains accelerate losses of soil organic carbon and other GHG.

  Not only should Congress expand Sodsaver so it applies equally to farmers across the entire country, but USDA should also rigorously enforce this policy and ensure farmers are aware of the penalties associated with tilling native prairie.

- **Strengthen conservation compliance to incorporate soil health.**

  In order to be eligible for most federal farm programs, including the taxpayer subsidized federal crop insurance program, farmers whose land includes highly erodible areas or wetlands must adhere to specific conservation requirements. These requirements, known collectively as conservation compliance, are in place to ensure that our shared natural resources have a minimum level of protection. Conservation compliance acts as a countervailing force against the tendency of production subsidies to foster excessive erosion and destruction of sensitive or marginal lands, and subsequently increase in GHG emissions and decrease in the potential of soil to sequester carbon.

  USDA should take immediate steps to ensure effective enforcement of existing conservation compliance measures for controlling soil erosion. In addition, Congress should require compliance plans and implementation to increase soil carbon levels, and measures such as nutrient management planning and integrated pest management to reduce the inputs of synthetic nitrogen and pesticides, and to minimize N_2O emissions from fertilized soils. Additionally, Congress should designate a small percentage of farm bill mandatory spending for compliance technical assistance and enforcement.

- **Adopt a national policy to support management-intensive rotational grazing and other advanced grazing systems, including support for transition to grazing.**

Cattle and other ruminant livestock emit methane (CH_4) whether raised on pasture or in confinement. However, management-intensive rotational grazing systems (MIG) shrink the GHG footprint of livestock production by eliminating manure storage facilities, improving forage quality (which reduces enteric CH_4), and sequestering more soil organic carbon in grazing lands. Advanced grazing systems, particularly management-intensive rotational grazing (MIG) have been shown to improve soil, forage, and livestock health dramatically, to reduce water pollution, and to sequester large amounts of carbon. Well-managed grazing systems also mitigate manure-related water impacts and greenhouse gas emissions. Diversified organic and sustainable operations that integrate crop and livestock production can further reduce climate impacts by optimizing nutrient cycling and utilizing on-farm resources to feed and maintain both livestock and crops.

In contrast, confined animal feeding operations (CAFOs), currently the source of the majority of meat, dairy, and eggs consumed in the U.S., contribute a large part of U.S. agriculture's GHG emissions. Liquid manure storage (lagoons, pits, etc), over-application of stockpiled manure on nearby acreages, and dependence on high-input corn, soy, and other commodity crops for livestock feed add up to a large climate footprint as well as threatening water and air quality and human health in neighboring communities.

Therefore, Congress should enact, and USDA should implement, measures to encourage a phase-out of CAFO livestock production systems and widespread adoption of MIG based systems and crop-livestock integrated production. The new CSP Supplemental Payment for Advanced Grazing Management takes an important step in the right direction, but it must be backed up through restoration of full CSP funding, enhanced education and technical assistance to help livestock producers make this transition, and a phase-out of CAFO infrastructure subsidies through the NRCS Environmental Quality Incentives Program. (EQIP) and other mechanisms such as federal loan guarantees. Congress should consider legislation requiring that EQIP apply livestock-related conservation practice payments only to the adoption and improvement of pasture-based production systems.

7. What policies should Congress adopt to help farmers, ranchers, and natural resource managers adapt to the impacts of climate change?

- **Create a special technical assistance initiative for climate mitigation/adaptation**

In addition to financial assistance, farmers commonly need technical assistance to implement conservation practices effectively to achieve their conservation goals. This is especially true for measures to mitigate and prepare for climate change, since these strategies are largely based on recent science, and commonly require site-specific selection and implementation of a suite of multiple, complementary practices. Few priorities are more urgent than providing producers and rural communities with the practical tools and know-how they need to build resilience to the specific impacts of climate change in their locale.

Congress should set aside one percent of all farm bill conservation funding as a dedicated fund for a major technical assistance initiative that involves NRCS, third party providers,

non-profit organizations, and Cooperative Extension on an effort to increase adoption rates of the most critical conservation practices and activities for soil health and GHG emission reduction. Such technical assistance should focus on soil health principles and practices, carbon sequestration in soil/biomass, GHG-mitigating nutrient management strategies, and farming systems that further climate mitigation goals, including integrated organic and sustainable production systems, crop diversification, crop-livestock integration, agroforestry, silvopasture, and perennial conservation buffers, advanced grazing management). Additionally, Congress should ensure that targeted TA is available to underserved farmers – including limited resource, small-scale, and socially disadvantaged farmers.

- **Increase federal investments in public plant and animal breeding and cultivar development to help farmers adapt to climate change.**

  The scientific consensus is that climate change will result in rapid and unpredictable changes in the growing regimes for crops and forages and conditions for animal agriculture that may vary on a regional basis. Federal research investments will be needed in order to develop crop varieties and animal breeds suited to a variety of local (and ever changing) climate conditions.

  As local climate conditions continue to change, the availability of a diversity of plant and animal genetic resources will be needed to address the growing challenges of global climate change, increasing pest and pathogen pressure, food security, and safety and resiliency concerns. Plant cultivars that are better adapted to sustainable organic systems, (especially integrated, minimum-till, high-biomass-cover crop based organic systems, etc) will facilitate adoption of these climate-friendly practices. Cultivars with enhanced nutrient and water use efficiency can reduce the need for fertility and irrigation inputs and enhance cropping system resilience to weather extremes. Livestock breeds that are better adapted to performance in pasture-based systems, especially management-intensive rotational grazing (MIG), will facilitate adoption of this highly beneficial and climate-friendly system of livestock production.

  We therefore recommend that Congress ensure an initial investment of $50 million in annual extramural research funding within the U.S. Department of Agriculture (USDA), as well as $50 million in annual USDA intramural research funding to support public cultivar and breed development and ensure a supply of regionally-adapted seed varieties in the face of a changing climate and a viable "pipeline" of the next generation of plant breeders.

9. What policies should Congress adopt to reduce emissions of non-CO2 greenhouse gases, including methane, nitrous oxide, and fluorinated gases?

- **Modify NRCS Conservation Practice Standards to improve soil health and water quality and reduce nitrous oxide emissions.**

  In the U.S., agriculture is responsible for about 74 percent of total emissions of nitrous oxide (N_2O), and most of this comes from agricultural soils that have been fertilized with synthetic nitrogen (N) fertilizers and/or manure. Tightening criteria for the NRCS Conservation

Practice Standard 590 Nutrient Management (as noted in third bullet under Question 6 above), and applying recent research findings to reduce the need for fertilizer N inputs through optimum soil health, biological N cycling, and crop N use efficiency, can help farmers mitigate N_2O emissions, and reduce their fertilizer costs as well. Agroecological approaches to soil management, such as organic crop rotations that include legumes, have been shown to allow farmers to cut N applications by half or more, even on lower-fertility soils of the southeastern U.S. coastal plain.

- **Support research into advanced nutrient management and mitigation of agricultural N_2O emissions.**

  Additional research is also needed to develop and refine best nutrient management approaches for all soils, regions, and crop rotations. Since soil N_2O emissions are directly related to soil soluble N levels, widespread adoption of improved N management could slash agricultural N_2O by more than 50 percent.

  Thus, Congress should enact federal policy that will support producers to reduce N inputs through soil health and biological nutrient cycling. This includes mandating improvements in NRCS conservation standards, technical assistance through NRCS and other USDA programs, and making biologically based nutrient management and N_2O mitigation a high priority for ARS research and in NIFA competitive grant Requests for Applications.

- **Increase support for composting as a climate friendly alternative to landfill and manure lagoon disposal of organic "wastes."**

  In addition, composting is a far more climate-friendly approach to managing manure than liquid storage (lagoons, pits etc) or unmanaged dry stacking. Lagoons emit large amounts of methane (CH_4), while stockpiled solid manure is a significant secondary source of agricultural N_2O. Well managed composting, in which manure is combined with high carbon organic residues and kept at optimum moisture, oxygen, and temperature levels, greatly reduces emissions of both of these potent GHGs, and yields a highly beneficial soil amendment known to help stabilize carbon in the soil. Thus, Congress should enact legislation requiring NRCS to develop and implement a Composting Practice Standard through all of its working lands conservation programs.

  Finally, we want to note that transition from CAFO livestock production systems to advance grazing management and MIG will yield substantial reductions in N_2O and CH_4 emissions related to livestock production.

11b. How can Congress better identify and reduce climate risks for front-line communities, including ensuring that low and moderate-income populations and communities that suffer from racial discrimination can effectively grapple with climate change?

In any conversation around climate change, it is imperative to acknowledge and take concrete action to address the disproportionately heavy impacts of climate disruption on low-income, rural, and minority communities; and on farmers of color, migrant farmers and

farmworkers, and other historically underserved constituencies. These communities, both rural and urban, are often some of the first to feel the impacts of climate change and have the fewest resources to withstand its impacts.

It is also important to recognize the invaluable contributions of indigenous communities to agricultural solutions to the climate crisis, and acknowledge the wisdom native peoples have learned about survival under difficult and changing environmental, social, emotional and political conditions.

In any comprehensive proposal to address climate change, Congress must include specific policies and accountability measures to ensure farmers of color, and other underserved farmers are not excluded from, or suffer additional barriers to access, any policy solutions Congress proposes.

This includes ensuring that farmers of color have access to – and are actually participating in and benefiting from – USDA programs (such as NRCS conservation programs). Unfortunately, historic discrimination in the administration of USDA programs is not just a distant memory – it remains a lived reality for many farmers of color to this day, and additional accountability and transparency measures must be in place to make any real progress.

Congress should also consider additional policy mechanisms, such as requiring a minimum threshold of funding, technical assistance, research, outreach, etc. be specifically targeted to underserved communities.

12. Our understanding and response to the climate crisis has relied on U.S. climate observations, monitoring and research, including regular assessment reports such as the National Climate Assessment. What policies should Congress adopt to maintain and expand these efforts in order to support solutions to the climate crisis and provide decisionmakers – and the American people – with the information they need? Where possible, recommend the scale of investment needed to achieve results.

- **Establish a Monitoring, Evaluation, and Reporting Initiative to create outcomes-verified data and metrics that would be needed for tax credits, supply chain initiatives, and carbon trading.**

  Measurement, evaluation, and reporting requirements on conservation outcomes are needed for all conservation programs and initiatives, including a description of all the many approaches, methods, and metrics USDA is developing or already has in place. This information is necessary in order to define, evaluate, and communicate outcomes specifically related to the potential of USDA conservation programs to help farmers mitigate impacts of climate change.

  While USDA is currently able to measure conservation effects on a national, regional, and landscape scale through the Conservation Effects Assessment Program (CEAP), CEAP is not able to assess the effects of individual USDA conservation programs, practices, and

initiatives – which will be needed in order to establish outcomes-verified data on the carbon sequestration rates of various NRCS practices. In order to build the necessary partnerships, infrastructure, and capacity to measure, evaluate, and report on the effects of conservation programs and initiatives on carbon sequestration and net GHG footprint, USDA will need a targeted source of funding.

ADDITIONAL RECOMMENDATIONS

- **Focus climate change research, conservation incentive programs, and federal commodity and crop insurance on whole-farm systems.**

  Given the range of uncertainty with regard to the specific impacts of climate change on agriculture in any given location, adaptation strategies should not be viewed as a set of single practice prescriptions. Resilience in agricultural systems is a function of the health of the entire agricultural ecosystem and climate change strategies must therefore focus on whole-system – rather than piecemeal – approaches. Specific policy recommendations include:

  - An emphasis on "sustainable systems for agricultural production" and not just "sustainable practices" across USDA's research, education, and extension activities concerning climate change.

  - Increased emphasis on systems approaches to risk management (such as the Risk Management Agency's Whole Farm Revenue Protection crop insurance program).

  - Substantial reform of USDA commodity and crop insurance programs with the long-term goal of reorienting our farm safety net system from overproduction, specialization, and environmental harm to a new safety net that puts farmers and climate-smart agriculture first.

- **Support market development for new rotational crops (including perennials) that promote soil health and increase soil organic matter (SOM) and SOC through USDA's Value-Added Producer Grants (VAPG).**

  One key climate adaptation strategy for producers is to consider changes in crop mix, crop rotations, and farm enterprises in response to shifting temperature, rainfall, and growing season patterns. For example, if weather extremes make the standard corn-soy rotation no longer profitable, producers may change their crop mix to include other grains or specialty crops that are better adapted to the new conditions or more resilient to erratic weather. If fruit and nut crop production suffer from inadequate chill hours or shifting seasonal patterns, producers may seek other cultivars or species with different or less stringent requirements to adapt to the new condition. In addition, crop and enterprise diversification can reduce the economic impact of one crop failing, and thus plays a key role in the operation's resilience to climate disruptions. However, farmers need technical and sometime financial assistance in order to successfully adopt new crops, modified rotations, and new enterprises as part of their climate adaptation strategy.

Feasibility and working capital grants through USDA's long-standing VAPG program to support new markets and mid-tier value chains for new uses for existing crops (e.g., oats, alfalfa) or for new emerging crops (e.g., kernza, pennyroyal) could accelerate farmer-owned approaches to more diversified and climate friendly cropping systems. The results of such a new emphasis could be improved farm income, higher levels of entrepreneurship, and new viable production systems that enhance climate mitigation and adaptation.

In addition to the specific recommendations outlined in our comments above, we include additional policy ideas and details in our paper, *Agriculture and Climate* Change which can be accessed here: https://sustainableagriculture.net/publications. We would welcome the opportunity to provide additional input as the Committee works to assemble its findings for Congress, and to ultimately move forward with comprehensive climate legislation.