



Priorities for Resilient Agriculture in Budget Reconciliation

Autumn 2021

BACKGROUND

There are nearly 900 million acres of US farmland, and with the right investments, each acre is an opportunity to add needed resilience for farmers and communities, and to create a healthier and more sustainable food system. Strategically increasing funding across a variety of key federal programs—from on-farm conservation incentives to research meant to inform policymakers and farmers—would put the agriculture sector firmly on track to reduce its contribution of heat-trapping emissions. In the process, it would help the United States reach the Biden administration’s goal of cutting total emissions by at least 50 percent below 2005 levels by 2030 and transition to a net-zero emissions economy no later than 2050.^{1,2}

Currently, many of the farming practices known to help regenerate soils, keep air and water clean, build resilience to extreme weather and other climate change impacts, and help mitigate the climate crisis are practiced on a relatively small portion of US agricultural land. For example, cover cropping builds soil health³ and prevents water pollution,⁴ but is used on just 3.8 percent of cropland according to the most recent national estimates.⁵ Other promising practices, such as agroforestry,⁶ are used even less often: according to the 2017 Census of Agriculture, just 30,000 farms (about 1.5 percent of operations) were using an agroforestry practice.⁷

Expanding funding for existing US Department of Agriculture (USDA) working lands programs, particularly the Conservation Stewardship Program (CSP) and the Environmental Quality Incentives Program (EQIP), would be a fast and effective strategy to scale up these and other proven agricultural practices. These programs, available through the USDA’s National Resources Conservation Service (NRCS), have been shown to provide a high return on investment,⁸ farmers know and trust them, but they are largely oversubscribed and underfunded.⁹ For example, between 2010 and 2020, more than two-thirds of farmers who applied to EQIP and well over half of farmers who applied to CSP were turned down.¹⁰ With additional funding, these programs can be expanded in ways that simultaneously help farmers and communities adapt to

¹ <https://www.ucsusa.org/resources/agricultural-soil-carbon-and-carbon-markets>

² <https://blog.ucsusa.org/rachel-cleetus/priorities-for-congress-climate-change/>

³ <https://www.nature.com/articles/s43016-021-00222-y>

⁴ <https://doi.org/10.1093/erae/jbu009>

⁵ <https://www.nass.usda.gov/Publications/Highlights/2020/census-land-use-practices.pdf>

⁶ <https://doi.org/10.2737/WO-GTR-96>

⁷ https://www.savannainstitute.org/wp-content/uploads/2021/06/Smith-et-al-2021-Poster_Agroforestry-Counts.pdf

⁸ <https://blog.ucsusa.org/science-blogger/what-congress-does-next-could-cost-farmers-and-taxpayers-billions/>

⁹ <https://www.iatp.org/documents/closed-out-how-us-farmers-are-denied-access-conservation-programs>

¹⁰ <https://www.iatp.org/documents/closed-out-how-us-farmers-are-denied-access-conservation-programs>

climate change and manage other challenges that are being exacerbated by climate change, such as degraded soils, air quality, and water quality.¹¹

To achieve the greatest long-term benefits, investments in working lands programs must be supplemented by robust agricultural research investments, particularly for agroecology and systems science.¹² Investments in multidisciplinary systems science are needed to evaluate ways in which food production can contribute to synergistic solutions to climate change, air and water pollution, soil degradation, and biodiversity loss, all of which threaten the availability of a healthy food supply and pose significant public health risks.¹³ Such research can help to identify and improve policies and programs, particularly for specific regions and populations that face unique challenges and opportunities. The value of agricultural research is well-established: the USDA's Economic Research Service estimates that agricultural research has resulted in large economic benefits, with annual rates of return between 20 and 60 percent.¹⁴

Finally, it is critical that any investments seek to reconcile past injustices perpetrated by the US government, including the USDA itself, and promote equity in the sector.¹⁵ To that end, the budget reconciliation package must provide set-aside funding to stabilize the operations of producers who have not received a fair share from federal farm support programs.

What follows are a variety of programs and funding levels that, based on science, UCS believes are key components for any congressional budget reconciliation package to create more resilient food and farm systems:

- Conservation Stewardship Program (\$4 billion)
- Environmental Quality Incentives Program (\$9 billion)
- Set-asides for “socially disadvantaged” farmers within CSP and EQIP
- Conservation Technical Assistance (at least \$200 million)
- Sustainable Agriculture Research Education (SARE) (\$500 million)
- Agriculture and Food Research Initiative (AFRI) (\$500 million)
- Climate Hubs (\$50 million)
- Long-Term Agroecosystem (LTAR) network
- Debt Relief for Underserved Producers

¹¹ <https://www.ucsusa.org/resources/safeguarding-soil>

¹² <https://www.foodsystemsjournal.org/index.php/fsj/article/view/782>; <https://www.ucsusa.org/resources/counting-agroecology>

¹³ <https://www.ucsusa.org/resources/from-silos-to-systems>

¹⁴ <https://www.ers.usda.gov/topics/farm-economy/agricultural-research-and-productivity/>

¹⁵ <https://www.ucsusa.org/resources/leveling-field>;

CONSERVATION PROGRAMS

Conservation Stewardship Program (CSP)

Funding Recommendation: \$4 billion

CSP is a holistic program that enables farmers to adopt suites of locally tailored practices that work together to optimize environmental benefits, including climate benefits. For example, the program encourages a number of practices that tend to sequester carbon and reduce heat trapping emissions. Further, the program’s whole-farm approach enables it to simultaneously address multiple other problems—including soil erosion, unsustainable water use, air and water pollution, and productivity challenges—many of which are being amplified by climate change.¹⁶ UCS has estimated that CSP’s whole-farm approach leads to a return of \$4 in benefits for every dollar invested, a higher return than other working lands programs.¹⁷ The program was authorized at \$725 million in FY2020¹⁸ and included 4,922 active contracts covering more than 6.4 million acres.¹⁹

However, CSP is not being leveraged to its full potential, particularly in terms of its ability to address the climate crisis. With demand substantially exceeding existing program capacity each year, Congress could strengthen CSP’s impact simply by increasing available funds to enable more farmers to participate. From 2010 to 2020, 58 percent of farmer applicants were rejected, and in 2020 that number reached 75 percent.²⁰ CSP could also be strengthened by placing more emphasis and directing more funding toward farming practices and systems that are most effective in climate change mitigation and adaption, such as through new climate change mitigation bundles with regionally tailored options (like those proposed in H.R. 2456, the Farmers Fighting Climate Change Act), or through increased supplemental payments for priority practices.

CSP must also do more to encourage participation by small, limited-resource, and other “socially disadvantaged” farmers. In particular, Congress must allocate funding to enable the USDA to address the CSP participation gap among historically underserved farmers in Southeastern states such as Mississippi, Alabama, North Carolina, and Florida,²¹ to ensure that these farmers have equitable opportunity to reduce heat-trapping emissions and improve the resilience of their farms and livelihoods to climate change impacts.

In FY 2022 and FY2023 CSP is authorized at \$800 million and \$1 billion, respectively.²² If CSP were to receive \$4 billion over five years, through FY 2026, via budget reconciliation that would amount to the program receiving a 100 percent increase in FY 2022, and nearly double in FY2023, depending on how the allocation is divided among fiscal years. Such a funding level

¹⁶ <https://nca2018.globalchange.gov/chapter/10/>; <https://blog.ucsusa.org/science-blogger/what-congress-does-next-could-cost-farmers-and-taxpayers-billions>

¹⁷ <https://blog.ucsusa.org/science-blogger/what-congress-does-next-could-cost-farmers-and-taxpayers-billions>

¹⁸ <https://sgp.fas.org/crs/misc/R40763.pdf>

¹⁹ https://www.nrcs.usda.gov/Internet/NRCS_RCA/reports/fb08_cp_cstp.html

²⁰ <https://www.iatp.org/documents/closed-out-how-us-farmers-are-denied-access-conservation-programs>

²¹ <https://sustainableagriculture.net/blog/nsac-fy18-special-report-csp/>

²² <https://sgp.fas.org/crs/misc/R40763.pdf>

would help to better meet current farmer demand and support a significant expansion of the reach of this vital program.

Environmental Quality Incentives Program

Funding Recommendation: \$9 billion

The Environmental Quality Incentives Program (EQIP) also helps farmers implement conservation practices that can build resilience on their farms, and this program already has extensive reach. In FY2020, the program spent more than \$1.8 billion on 33,701 contracts covering more than 10 million acres.²³

Still, as with CSP, there is a tremendous opportunity to scale up and strengthen EQIP to drive greater landscape change. EQIP is exceedingly popular, and in 2020, the funded projects represented just 27 percent of applications.²⁴ High unmet demand has persisted for years; from 2010 to 2020, 69 percent of applicants were turned away.²⁵ Scaling up the program would quickly enable more farmers to participate. Further, in order to orient the program more toward climate-beneficial outcomes, the USDA should prioritize new funding allocations toward practices known to build soil health, increase carbon sequestration, and reduce heat-trapping emissions.

While EQIP has mechanisms in place to encourage participation of small, limited-resource, and other “socially disadvantaged” farmers,²⁶ Congress must provide the NRCS with funding to go a step further by publishing participation data among these groups on their EQIP and contracts data website.²⁷ Providing funding to NRCS to make these data publicly available can help provide accountability and transparency to ensure that CSP and EQIP are equitably accessible to all farmers.

Lastly, we recommend that investments to EQIP from budget reconciliation not flow to the 50 percent set-aside within EQIP for livestock operations in order to reduce the potential negative environmental and equity impacts of confined animal feeding operations (CAFOs).

In FY 2022, EQIP is authorized to receive \$1.85 billion. If EQIP were to receive \$9 billion in budget reconciliation over 5 years, through FY 2026, that would amount to the program receiving an almost 100 percent increase or almost double the amount of funding the program receives per fiscal year, depending on how the allocation is divided among fiscal years. Such a funding level could help thousands more farmers adopt practices to build resilience on their farms.

²³ https://www.nrcs.usda.gov/Internet/NRCS_RCA/reports/fb08_cp_eqip.html

²⁴ <https://www.iatp.org/documents/closed-out-how-us-farmers-are-denied-access-conservation-programs>

²⁵ <https://www.iatp.org/documents/closed-out-how-us-farmers-are-denied-access-conservation-programs>

²⁶ https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/about/?cid=nrcs144p2_068641

²⁷ https://www.nrcs.usda.gov/Internet/NRCS_RCA/reports/fb08_cp_eqip.html#contracts

Conservation Technical Assistance

Funding Recommendation: At least \$200 million

Technical assistance is critical to helping farmers adopt new practices and will become even more important as climate change impacts increasingly require adaptation.²⁶ NRCS's Conservation Technical Assistance Program (CTA) provides landowners with the site-specific solutions needed to implement conservation practices on their lands, while providing accountability to ensure maximum return on the public investment. Additionally, the USDA's ability to successfully deliver on its conservation programs, like CSP and EQIP, depends heavily on CTA.

Additional funding from Congress can help the USDA meet climate mitigation and adaptation goals by improving technical assistance for the most effective and urgently needed practices. Achieving this would likely mean hiring new staff and ensuring that all staff are regularly trained in the latest science of climate change mitigation and adaptation. While NRCS staffing levels have partially rebounded recently, the agency lost more than 2,000 employees (a 19 percent reduction) between FY2004 and FY2018.²⁸ With 98 percent of all NRCS staff located in state, county, and technical offices outside of Washington, DC, this decrease has taken a toll on customer service and the ability to provide technical assistance.²⁹

In addition to hiring more NRCS technical assistance staff, funding could help the USDA hire diverse and representative staff who are able to provide materials and information in different languages and formats to effectively communicate with the farmers in their regions. Staff should be trained and ready to engage with all farmers in their area, and should implement a focused, proactive outreach strategy to more effectively partner with beginning farmers, women farmers, and Black, Indigenous, People of Color (BIPOC) farmers³⁰.

Lastly, NRCS could use CTA funding to help foster farmer-to-farmer learning and assistance to accelerate the successful adoption of practices that can help combat climate change and build farm resilience. A recent example of farmer-to-farmer learning occurred when the Practical Farmers of Iowa teamed up with Iowa State University and NRCS to provide a webinar to other farmers on conservation practices in 2020.²⁸

In FY 2021, CTA received \$734 million. If CTA were provided an extra \$200 million in budget reconciliation over five years, through FY 2026, that would provide CTA with a 5 percent increase per fiscal year, depending on how the allocation is divided among fiscal years. It's also noteworthy that there is conservation technical assistance funding built in to CSP and EQIP. Such a funding level would help to ensure more farmers have the knowledge and support they need to implement conservation practices in ways that are tailored to their farms and regions.

²⁸ https://www.everycrsreport.com/files/2020-03-11_IF11452_bf1eaa6064a214b26bd80b3a56ece56e1a521990.pdf

²⁹ https://www.everycrsreport.com/files/2020-03-11_IF11452_bf1eaa6064a214b26bd80b3a56ece56e1a521990.pdf

³⁰ <https://www.ucsusa.org/resources/leveling-field>;

RESEARCH

Increased publicly funded research is urgently needed to advance science-based approaches for agriculture and forestry that effectively and equitably contribute to long-term climate change mitigation and adaptation, as well as healthy and sustainable food systems. US investment in publicly funded agriculture research has been lagging for decades: from 1970 to 2008, publicly funded agriculture research remained relatively stagnant, and in 2009 the United States fell behind China.³¹

We recommend that Congress close this funding gap and focus investments in several key areas that can help uncover urgently needed solutions:

- Interdisciplinary research on agricultural climate change solutions that is informed by agroecology and considers the social, health, equity, and economic aspects of food system sustainability.^{32,33}
- Measurement and modeling approaches to quantify soil carbon storage, net greenhouse gas impacts, and other co-benefits and tradeoffs associated with changes to agricultural practices (such as water quality, water conservation, and biodiversity).
- Research that offers insights into the intersections of soil health and human health in the context of climate change and climate change solutions.
- Analyses of potential impacts of policy approaches to agricultural climate change solutions, including on public health, community well-being, and racial equity.
- Multidisciplinary systems science to address public health challenges and health disparities at the intersection of food production, climate and environment, and nutrition.

Lastly, robust investment in USDA-supported research is also needed to attract, retain, and develop the next generation of scientists to address increasing pressures on our natural resources and advance innovations for all people.

Below is a list of several key USDA programs that, if provided additional funding, could help fill key research gaps and provide new data and tools needed to create a more resilient food and farm system.

Sustainable Agriculture Research and Education (SARE)

Funding Recommendation: \$500 million

For over 30 years, SARE has been the only regionally-based, farmer-driven, and outcome-oriented competitive research program that involves farmers and ranchers directly as the primary investigators and/or cooperators in research and education projects.³⁴ Moreover, SARE is the

³¹ <https://www.ers.usda.gov/amber-waves/2016/november/us-agricultural-r-d-in-an-era-of-falling-public-funding/>

³² <https://www.ucsusa.org/sites/default/files/attach/2015/11/ucs-counting-on-agroecology-2015.pdf>

³³ <https://doi.org/10.5304/jafscd.2020.092.009>

³⁴ <https://sustainableagriculture.net/publications/grassrootsguide/sustainable-organic-research/sustainable-agriculture-research-and-education-program/>

only USDA competitive grants research program that focuses solely on sustainable agriculture.³⁵ Since 1988, SARE has invested a total of \$251 million in more than 6,300 initiatives, allocating more than \$21 million in research funds directly to farmers and ranchers.³⁶ Funding has gone to support cutting-edge projects on topics such as conservation tillage, crop rotations, grazing management, and soil health.

Increased investments for the program are needed to meet the needs of farmers aiming to build climate resilience, achieve sustainable productivity goals, and reduce unintended environmental impacts.

In FY 2022, SARE is authorized to receive \$60 million. If SARE were to receive \$500 million in budget reconciliation over five years, through FY 2026, that would provide a roughly 166 percent increase or 2.6 times the amount of funding the program receives per fiscal year, depending on how the allocation is divided among fiscal years.

Agriculture and Food Research Initiative (AFRI)

Funding Recommendation: \$500 million

AFRI was established in the 2008 farm bill and is the nation's top competitive grants program for agricultural sciences.³⁷ AFRI funds a wide range of research, education, and extension projects.³⁸ These projects have included vital work to support farmers and communities in addressing climate change and other challenges.

Despite AFRI's strengths, the program could be expanded and tailored to meet pressing needs. For example, UCS analyses of AFRI investments have identified several underfunded research areas that are urgently needed to address the climate crisis, including agroecology, interdisciplinary research, and the social, health, equity, and economic aspects of food system sustainability.^{39,40} Despite incremental increases in AFRI funding over the past several years, roughly 70 percent of AFRI proposals that are deemed worthy by expert review panels go unfunded, simply because not enough funding is available.⁴¹ Substantially more funding is needed to close this gap and address our nation's most pressing agriculture and public health challenges, now and in the future.

In FY 2022, AFRI is authorized at \$700 million. If AFRI were allocated an additional \$500 million over the next 5 years, through FY 2026, that would provide a 14 percent increase for that program per fiscal year, depending on how the allocation is divided among fiscal years.

³⁵ <https://sustainableagriculture.net/publications/grassrootsguide/sustainable-organic-research/sustainable-agriculture-research-and-education-program/>

³⁶ <https://sustainableagriculture.net/publications/grassrootsguide/sustainable-organic-research/sustainable-agriculture-research-and-education-program/>

³⁷ <https://nifa.usda.gov/program/agriculture-and-food-research-initiative-afri>

³⁸ <https://nifa.usda.gov/program/agriculture-and-food-research-initiative-afri>

³⁹ <https://www.ucsusa.org/resources/opportunities-obstacles-and-needs-surrounding-public-support-agroecology>

⁴⁰ https://www.ucsusa.org/resources/counting-agroecology?_ga=2.170434656.1563898655.1614960086-1801335266.1596642929#.Wd5wF1tSyUk

⁴¹ <https://nifa.usda.gov/afri-annual-review-archives>

USDA Climate Hubs

Funding Recommendation: \$50 million

In 2013, the USDA created 13 regional climate hubs across the country to deliver science-based, region-specific, cost-effective, practical tools and technical support to help producers and landowners make effective conservation and business planning decisions in response to a changing climate.⁴² Since their founding, the USDA Climate Hubs have provided a wide diversity of practical materials and information, including up-to-date reports on current drought conditions and other climate stresses, new adaptive strategies, workshops and educational programs, and case studies of farms who have utilized a five-step Adaptation Workbook to develop site-specific climate response plans.⁴³

Additional funding is needed to strengthen and expand the Climate Hubs, so that their reach and impact can be extended. For example, the USDA’s FY 2020 annual review of the Climate Hubs provides insight into the hubs’ importance going forward, saying that they will be “a major contributor to the upcoming National Climate Assessment, with many regional directors serving in chapter leadership roles,” and noting that they “will continue to expand their efforts to co-produce regionally relevant information and tools in a changing climate.”⁴⁴ However, current staffing levels are not commensurate with those aims. According to a Politico analysis, “USDA climate hubs host skeleton crews with a monumental task.”⁴⁵ Expanded funding is needed to recruit and hire staff with appropriate expertise and experience that are also demographically and geographically representative of the entire country.

In FY 2021, the USDA Climate Hubs received \$9 million (the climate hubs are not authorized for FY 2022). If the Climate Hubs were allocated an additional \$50 million over five years, through FY 2026, the program would receive a 111 percent increase or more than double the amount of funding per fiscal year, depending on how the allocation is divided among fiscal years.

Long-Term Agroecosystem (LTAR) network

The USDA Agricultural Research Service’s LTAR network consists of 18 sites across the country with the purpose of providing a coordinated nationwide response and long term commitment to better “understanding and enhancing the sustainability of agriculture.”⁴⁶ Long-term research sites are particularly important because they allow researchers to answer questions that take longer than the normal 2–5 year project cycle to formulate, allow questions to be addressed against a wide range of environmental conditions, allow the inclusion of episodic events, and enable the detection of important but slow-acting phenomena such as changes in soil

⁴² <https://sustainableagriculture.net/blog/regional-long-term-research-build-climate-resilience/>

⁴³ <https://sustainableagriculture.net/blog/regional-long-term-research-build-climate-resilience/>

⁴⁴ https://www.climatehubs.usda.gov/sites/default/files/Climate%20Hubs%20Annual%20Report%20FY20_Final.pdf

⁴⁵ <https://www.politico.com/news/2019/10/15/im-standing-here-in-the-middle-of-climate-change-how-usda-fails-farmers-043615>

⁴⁶ <https://www.ars.usda.gov/natural-resources-and-sustainable-agricultural-systems/water-availability-and-watershed-management/docs/long-term-agroecosystem-research-ltar-network/>

carbon, climate, and the effect of land use changes.⁴⁷ Additionally, LTAR networks facilitate collaboration across sectors and play a key role in outreach and education across state lines.

Funding is required to help the LTAR network build on a strong foundation to explore additional approaches that can be applied at different scales (field, landscape, regional, national). The network could be even more impactful if it were given the resources to expand. Furthermore, funding is needed to ensure that the LTAR network can make high-quality, long-term datasets available and accessible to researchers and the public at large.

DEBT RELIEF

Debt Relief for Underserved Producers

It is essential that the budget reconciliation package direct significant resources for underserved producers, and in particular, debt relief to stabilize the operations of producers who have not received a fair share of aid from recent federal support programs.

CONCLUSION

The \$3.5 trillion budget reconciliation package being considered by Congress is the most significant opportunity in generations to turn the United States from an unsustainable and inequitable path toward a more resilient, healthy, and just future.⁴⁸

The billions in funding allocated to the Congressional Agriculture Committees within budget reconciliation is an opportunity for Congress to invest in existing USDA programs that are proven to work^{49,50} and can be immediately leveraged to help move toward a more resilient and just U.S. food and farm system.

Although programs and funding levels included in this document will not be a panacea to all the issues that exist within the US food and farm system, the investments would undoubtedly help move the nation in the direction of a more sustainable and healthy future for all.

⁴⁷ <https://www.ars.usda.gov/ARUserFiles/np211/LTAR%20Walbridge%20and%20Shafer%202011%20Paper.pdf>

⁴⁸ <https://blog.ucsusa.org/rachel-cleetus/priorities-for-congress-climate-change/>

⁴⁹ <https://www.ucsusa.org/sites/default/files/attach/2018/08/CSP-ROI-Appendix-FINAL.pdf>

⁵⁰ <https://www.ers.usda.gov/amber-waves/2016/november/us-agricultural-r-d-in-an-era-of-falling-public-funding/>