



# 2022 Climate Adaptation Plan

Together, America Prospers

# USDA Rural Development Climate Adaptation Plan

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## USDA Rural Development's Mission

**Our mission is to improve the economy and quality of life in rural America.**

USDA Rural Development comprises three agencies: Rural Housing Service (RHS), Rural Business-Cooperatives Service (RBCS), and Rural Utilities Service (RUS). Each agency provides financial support through loans, grants, loan guarantees, or rental assistance. They also address the often urgent need in rural communities for technical assistance and training.

**RHS** offers a variety of programs to build or improve rural housing and essential community facilities in eligible areas. Projects and investments include single and multifamily housing – including housing for farm laborers – and to build and equip essential community facilities such as first responder stations, child care centers, hospitals, libraries, nursing homes, schools, and much more.

**RBCS** programs help provide capital, training, education, and entrepreneurial skills to help those living in rural areas start and grow businesses, or find jobs in agricultural markets and in the biobased economy.

**RUS** provides much-needed infrastructure or infrastructure improvements to rural communities, including water and waste treatment, electric power and telecommunications and broadband internet services.

## Rural Development Priorities

- Economic recovery from the COVID-19 pandemic
- Equity
- Climate Impact

## Climate Change Executive Order

Executive Order 14008 – Tackling the Climate Crisis at Home and Abroad (available at this link: <https://go.usa.gov/xuVga>)

### Part Two: Taking a government-wide approach to the climate crisis

**Section 201** - Requires federal agencies to combat the climate crises by:

- Reducing climate pollution
- Increasing resilience to the impact of climate change
- Protecting public health
- Conserving land, water, and biodiversity
- Delivering environmental justice through the innovation, commercialization and deployment of clean energy technologies and infrastructure

**Section 211** - Requires federal agencies to develop climate action plans to improve adaptation and increase resilience. To improve transparency, agencies must provide annual progress reports demonstrating their implementation efforts.

## Climate Impacts and Vulnerabilities

### What does the landscape of climate risk look like for our communities and for Rural Development programs and policies?

Climate change represents a risk to Rural Development's assets and the communities it serves. Climate-related damage to infrastructure and facilities will increase demand on RD to provide financial assistance to repair, replace, relocate, reduce barrier to access, or otherwise improve such assets. Additionally, climate-related impacts – such as decreased biodiversity – can disproportionately affect rural communities. Adverse impacts to regions dependent on natural resources for their livelihoods and social structures will also increase over time, proving disruptive to local rural economies. The potential for increased demands on financial resources could divert such resources from normal RD program operations, impacting the mission area's ability to achieve its goals. An increase in financial assistance requests could burden all aspects of RD operations, including underwriting, engineering, and environmental reviews.

Rural Development supports rural communities through loans, loan guarantees, and grants. For some programs, RD holds liens or other security interests in facilities and related infrastructure across diverse geographies impacted by climate change. No longer just an existential threat, climate decline is already

producing conditions that threaten human health, safety, and well-being, and creating adverse financial and economic issues. Examples of impacts that can damage homes, buildings, utility facilities and infrastructure include:

- Hydrological changes and sea-level rises resulting in inundation and erosion
- Increased frequency and severity of weather events such as tornados and hurricanes
- Increased likelihood of drought, as well as changes in drought severity and frequency, precipitation predictability, and water availability
- Wildfires fueled by heat and drought; longer fire seasons
- Extreme heat
- Deluge rains and flash floods
- River floods
- Migration of pests and insects that threaten structural and health resilience
- Extreme ice and snow events
- Increasing size and intensity of hail
- Compounded and co-occurring impacts with environmental chemicals and toxins

Climate change creates stress on community infrastructure. Climate events such as storm damage, global warming, hurricanes, and flooding threaten aging infrastructure, causing it to deteriorate and impact the development of future community infrastructure. Roads and bridges can be damaged or lost due to catastrophic floods, preventing access to federal lands.

Mental health deterioration due to climate stressors compounds all of these challenges. Rural communities have limited capacity to prepare and respond to these events.

## What does this look like by agency?

### **Rural Housing Service**

Climate change has a profound effect on the RHS portfolio because of direct structural impacts to the portfolio's single and multifamily properties, and also RD's support of essential community facilities. Damage to existing structures from weather events, fires, floods, and so on – which may not be covered by insurance – will require disaster mitigation financing. The likelihood of foreclosure or borrower insolvency in the aftermath of such events (as property values drop, or employment centers close) also rises. Looking forward, RHS programs will increasingly be required to consider financing for pre-disaster, resilience-related construction and improvements. Older building codes will need to be reevaluated to improve the inadequate construction of existing facilities and remove any barriers to accessibility.

These climate impacts cause properties – and thus, USDA – to incur additional costs. Increased climate risks also pose a threat to the financial stability of the rural communities RD serves. Rural areas unable to recover

from climate-related events mean residents may have to relocate to urban areas, threatening the fabric of community life in rural America.

Climate change continues to have a significant impact on rural communities. Many rural economies are less diverse than their urban counterparts. Changes in the viability of one economic sector – such as health care – will place disproportionate stresses on community stability, and could result in barriers to advancing racial justice, equity, and opportunity. Most rural communities already face daunting health care challenges in comparison with urban areas, so climate change-associated health risks may compound existing health issues in rural, Tribal, and Alaska Native communities. In the last two calendar years, more than a dozen RD Multifamily Housing properties have been impacted by extreme climate events such as hurricanes, tornados, and wildfires. In our Single Family Housing program, climate shocks may increase damage to – or create the destruction of – RD-financed or guaranteed properties.

Many underserved communities – particularly low income, minority, Tribal, and rural populations – are more likely to be disproportionately vulnerable to climate change impacts. Rural communities often are more exposed to environmental hazards, and have a harder time recovering from the negative impacts of climate change, resulting in barriers to equity and environmental justice. It often takes a lower-income community longer to rebuild after a natural disaster. Climate impacts may also lessen the ability of single family homeowners, multifamily housing property owners, organizations responsible for maintaining community facilities, and rural businesses to get flood insurance at reasonable rates and terms.

### **Rural Utilities Service**

RUS provides much-needed infrastructure and infrastructure improvements to rural communities. Through loans, grants, and loan guarantees, RUS funds water and waste treatment, electric power, telecommunications and broadband services to help expand economic opportunities and improve the quality of life for rural residents.

RUS addresses threats to water quality and quantity, shocks due to extreme climate events, and stress on infrastructure and public lands, all of which can disproportionately impact vulnerable communities.

RUS Water and Environmental Programs finances projects to help improve water quality and quantity for rural communities. Climate change is predicted to lead to increased precipitation variability and decreased water storage in snow and ice. This influences the variability of river flow (including both flooding and drought) which results in a less reliable surface water supply. Drought, storms, and flooding all have an effect on water quality and quantity.

RUS finances utility infrastructure projects in the most rural, remote, and un- or underserved communities in our nation. Overall, RUS programs make water and waste, electric power, and telecommunications services available in our country's least-served communities. By definition, RUS programs' target communities that

lack the resources to support basic utility infrastructure, increasing their vulnerability to climate change impacts, and their ability to adequately prepare and respond.

Extreme weather events have already damaged utility infrastructure and put pressure on utility infrastructure projects financed by RUS. For example, hurricanes overwhelm water and waste infrastructure. Thus, Water and Environmental Programs (WEP) staff are often deployed to help repair WEP infrastructure in communities impacted by hurricanes and severe storms. In January 2021, heavy snowstorms shut down the Texas electric grid, and RUS Electric Programs responded with special financing to help electric cooperatives in the region.

The Telecommunications Program has seen less of an impact from climate events such as hurricanes, because telecom infrastructure – such as fiber optics – largely is located underground. However, some telecom infrastructure – such as cables and wireless systems – is aerial, and can be affected by extreme climate events. Also, given that nearly 30 percent of people in rural areas don't have access to broadband internet service (information is available at this link: <https://go.usa.gov/xumth>) this makes post-recovery in these communities more difficult. Furthermore, powering telecom facilities can sometimes be affected by long power outages caused by extreme climate events. Generally, after a power outage, telecommunications facilities can maintain power for a short period using battery backups and generators to ensure continuity of service. However, the length of back-up power is regulated by the Federal Communications Commission (FCC) and state-based Public Utilities Commissions.

### **Rural Business-Cooperative Service**

RBCS programs help provide the capital, training, education, and entrepreneurial skills to help those living in rural areas start and grow businesses, or find jobs in agricultural markets and in the biobased economy.

While there are not direct climate risks or vulnerabilities associated with Rural Development funding, certain businesses RBCS indirectly supports through guarantees and intermediary lending are more at risk of climate-related default or loss of collateral.

## **Actions and Implementation Steps to Address Climate Vulnerabilities**

To support long-term community sustainability and build trust, a successful plan must address both foreseeable and unforeseeable vulnerabilities with an emphasis on preparedness and post-event response.

In this context, preparedness must extend beyond tackling the direct impact of the underlying climate event to addressing larger disruption issues, recognizing that communities hit hardest by climate events are often those

with vulnerable populations that lack the resources to quickly identify, triage, and resolve complex, climate-related problems.

For these reasons, climate plans must include predictive analytics, risk assessment, and some type of cost analysis. They must also include maps, visualizations, and if possible, simulations to illuminate community needs and highlight potential responses to ensure the broadest possible stakeholder engagement. While it is important to understand the probability of an event, unless that information is translated into guidance with respect to how a community must prepare and respond to the event, its usefulness will be limited.

Using mapping tools from our Innovation Center-based Data Analytics Division, RD is experienced at creating effective mapping tools. Examples include office optimization, obligation funding, and demographic diversity – all used to meet RD mission-area goals and priorities. There is capacity to apply this form of modeling to assess and better understand climate risk.

## Primary Action: Create a New Tool to Empower Rural Communities

Rural Development can develop a tool that combines mapping climate risks, social vulnerability, and resilience measures with an overlay of the RD investment portfolio to enhance awareness of risks and opportunities, and improve rural resilience and adaptation to climate change. From a portfolio protection perspective, developing this tool will also help RD adapt to increased risk from climate events, and build resilience in its housing and infrastructure portfolio.

There are several tools RD can use to create this tool:

- The Federal Emergency Management Agency's (FEMA) National Risk Index (information is available at this link: <https://go.usa.gov/xumum>).
- The Rural Development Investments in areas of Concern mapping tool (available at this link: <https://tinyurl.com/mry9v3w8>) shows RD investments as they relate to fire, earthquakes, and other weather-related hazards.
- The National Oceanic and Atmospheric Administration's (NOAA) U.S. Climate Resilience Toolkit Social Vulnerability Index (information is available at this link: <https://go.usa.gov/xumuS>) provides subject matter expertise to build climate resilience.

Ideally, the development of this principal tool will allow RD to collaborate with other USDA mission areas engaged in geospatial and GIS mapping to provide a comprehensive understanding of the climate risks confronting rural America, as well as identifying opportunities to promote resilience. As envisioned, the tool

will be designed for internal USDA use, but could support climate initiatives throughout the department and facilitate information flow to the public.

The tool will be developed as a living mechanism that can be updated with new information to address challenges and take advantage of opportunities. It will be capable of providing information on state and local requirements, laws and policies related to climate resilience, building codes and above-code standards, and tax programs and incentives. And it will be able to help USDA's leadership and underwriting staff design and target programs across rural America.

In addition to these tools, RD potentially can develop a mapping tool designed to take user input – think of it as a user-generated, interactive satellite navigation system for rural American resilience – that can offer a much more granular understanding of the critical, nuanced differences for each community. The U.S. Census Bureau's Opportunity Project (TOP – available at this link: <https://opportunity.census.gov/>) offers a 12-week program designed to help develop solutions of this kind.

Creating a tool that USDA RD staff can use internally to identify rural challenges and opportunities in the context of climate risk would be extremely useful in years to come. These challenges extend beyond climate to include equity issues like communities with limited English proficiency, accessibility and aging, and other isolating factors that impede community connectedness.

## How the Tool Will Help Rural Development Address Climate Change

The tool RD will develop to support this plan will help RD better serve rural communities whose economies depend on RD-financed infrastructure, and better position its own \$232.6 billion portfolio for future climate-related changes. As noted, climate change represents a significant risk for RD from financial and mission fulfillment perspectives. The tool will enable a better understanding of underlying socioeconomic conditions, community need, climate risk exposure, and costs that must be borne to address resiliency concerns. Its primary focus will be areas with acute and actionable needs that can be addressed by RD agencies. The tool can help identify which communities need construction projects to promote resiliency in the face of adverse climate events, and also can help them prioritize investments. This tool can also be used to map water systems vulnerable to climate risks like flooding. RUS' Water and Environmental Programs can then direct investments to mitigate such risks.

The tool will enable an integrated approach to understanding climate risk in the context of social vulnerability and need. These risks are of particular concern to RD because many distressed communities are in rural areas. Furthermore, 86 percent of "persistently poor" counties (they have poverty rates exceeding 20 percent over the past 30 years) have entirely rural populations.



These counties are vulnerable to climate risk since they do not have the capacity to withstand or recover from the adverse effects of climate events. RD is uniquely positioned to help these communities adapt to rising climate risks by continuing to integrate equity into decision making by investing in underserved communities.

By overlaying climate risk with community vulnerability, the tool will enable a better understanding of the factors underlying this disproportionate impact. It will facilitate the coordination of a broader mission area response to specific vulnerabilities by increasing awareness of communities' relative capacity to respond to climate risks.

There are several ongoing initiatives where targeting programs is helping direct funding to the most vulnerable communities.

- RD uses a priority points system to incentivize funding projects that fall in line with the Biden-Harris Administration's priorities: recovering from the impacts of the COVID-19 pandemic, Equity, and Climate Impact. For Climate Impact, RD recommends prioritizing proposals that tackle the climate crisis through projects that reduce climate pollution, spur well-paying union jobs, promote economic growth by deploying clean energy technologies and infrastructure, focus on clean energy research and development, or advance environmental justice.
- RD is participating in the Biden-Harris Administration's Justice40 Initiative (available at this link: <https://go.usa.gov/xuVqA>) which sets a goal of delivering 40 percent of the investment benefits from certain federal programs – like RD's Rural Energy for America Program (REAP – available at this link: <https://go.usa.gov/xuV3G>), Rural Energy Savings Program (RESP – available at this link: <https://go.usa.gov/xuV3m> - PDF), and the High Energy Cost Grant program (available at this link: <https://go.usa.gov/xuV39> - PDF) – to disadvantaged communities.
- RD can partner with USDA Climate Hubs (available at this link: <https://go.usa.gov/xuV3t>) to deliver local tools and resources to help build climate adaptation capacity. RD can leverage its field offices to help Climate Hubs connect with rural communities.

## Further Climate Adaptation Activities for Rural Development

Although central to RD's approach to climate adaptation, RD's actions to mitigate climate risk are not limited to the development of a climate-centric tool. There are other actions to be taken.

- RUS can use existing authorities and programs to provide support for infrastructure improvements needed to repair damage to facilities caused by extreme climate events
- RUS can offer financing options to support utility providers (and their customers) impacted by extreme climate events in which their facilities were not directly damaged. RUS's authority to

finance smart grid systems is crucial to helping utility systems and communities prepare for – and respond to – climate change and extreme climate events.

- RHS can improve building and housing resilience by supporting interagency efforts around the adoption and enforcement of modern building codes, and by incentivizing above-code building standards in the areas of climate and energy resilience.
- RD can build resilience to wildfires and their effects, partnering with the U.S. Forest Service to identify opportunities to connect post-wildfire restoration efforts with bioenergy generation.
- RD can look at funding resources that can be utilized for resilience, like repurposing Stafford Act (available at this link: <https://go.usa.gov/xuVxp> - PDF) federal disaster response funds for adaptation and mitigation activities in rural communities.
- We can engage directly with community-level leaders and environmental justice-focused organizations to understand vulnerabilities and risks, identify barriers to climate adaptation, and develop collaborative solutions for adaptation.
- We can provide state and regional public agencies, nongovernmental organizations, academics, and other interested members of the public with informational trainings and workshops detailing best practices, database access information, and other important information to help increase environmental justice awareness and opportunities.
- We can update programing guidance to require environmental justice considerations be included in cost-benefit analyses, and to encourage agency-wide adoption of environmental justice into our decision-making processes.

## Emerging Risks

The Biden-Harris Administration's placement of climate change at the center of U.S. foreign policy and national security in Executive Order 13990 underscores the secular nature of climate risk, and the far-reaching implications of increasingly frequent and extreme weather events around the nation and the globe. Some climate-related risks are not as evident today as the floods, fires, hurricanes, and other extreme weather events that fill headlines, but these risks almost certainly will have broad demographic, social and financial impacts in the future.

One such risk is outmigration. Climate events that destroy property, degrade transportation infrastructure, or reduce available telecommunications, water, and electrical services could compel businesses to relocate operations to larger, more resilient towns and cities. Job loss in rural areas accelerates the familiar rural-to-urban exodus. It is often led by younger job seekers, worsening the population aging that already strains rural economies.

Climate change also results in more expensive insurance coverage or reduced insurance availability, which can slow down post-event economic recovery. The cost of insurance reflects the probability and magnitude of expected loss; both calculations most certainly are impacted by climate events. Health insurance, reinsurance, and securitization markets can effectively mitigate risk that is uncorrelated, but global climate change will increase correlation. (An illustration of this would be a connection between drought that causes livestock loss in Texas, and wildfires causing business losses in California.) Without affordable insurance options, rural communities may find it more difficult to access critically-important capital markets (and thus, sources of rural business loans).

Obviously, Rural Development programs cannot alter underlying event probabilities. However, they can support a robust community response by financing resilience measures and facilitating informed decision making. By requiring stout construction standards and the use of climate-forward technologies RD can help mitigate losses caused by climate-related events, and increase the insurability of critical community assets financed through our programs.

**Table 1: Rural Development Adaptation Actions to Address Climate Change Effects and Vulnerabilities**

Climate Vulnerability	Action Title and Description	Type of Activity	Lead Office	Timeframe	Coordination	Progress Metrics
Shocks created by extreme climate events	Climate Adaptation Tool	Proposed	Innovation Center	To be determined when a workplan is established	Potential coordination with OBPA or Forest Service	To be determined when a workplan is established