



Chapter Four

Sustainability

INTRODUCTION

Building sustainability and climate resiliency into government institutions is more important than ever. The world's natural resources—including public lands—are integrally connected to our economy, health, environment, and society. Recent attention and investment in land management, water conservation, and energy generation and transmission—with a focus on how these factors translate into sustainable infrastructure—are creating opportunities to enhance climate resilience. Examples include the global 30-for-30 initiative, U.S. Great American Outdoors Act, and U.S. Bipartisan Infrastructure Act provisions for energy transmission and electric vehicles.

From a broader outlook, “climate and environmental risks are the core focus of global risk perceptions over the next decade—and are the risks for which we are seen to be the least prepared. The lack of deep, concerted progress on climate targets has exposed the divergence between what is scientifically necessary to achieve net zero and what is politically feasible.”¹

This chapter spotlights the critical importance of integrating sustainability and climate resilience strategies into our government institutions as climate impacts continue to mount. It focuses on three major topic areas: clean energy transition, sustainable development, and water management, offering practical insights and recommendations that governments can take advantage of in the near term to build climate resilience.

Setting Context

Sustainability is now top of mind among citizens, governments, and businesses. Recent research conducted by the IBM Institute for Business Value (IBV) finds that 68 percent of individuals across 33 countries say that environmental sustainability is very or extremely important to them.² Meanwhile, the IBV 2022 CEO study found that sustainability is the top business challenge identified by CEOs impacting their organization over the next 2-3 years. Yet, for all the talk and good intentions, progress has been limited. IBV research shows that while 86 percent of organizations have a sustainability strategy, only 35 percent have acted on their strategy. Moving the needle on climate resilience is proving very difficult.³

Source: The forthcoming IBM Center report, Integrating Climate Resilience, by Chris Mihm—as well as informed by the Future Shock roundtable discussion and resources.

But new opportunities are emerging. Data and digital technologies open new ways to drive change in priorities and practices. They can be infused into enterprise processes and decision making and drive improved environmental outcomes. Greater transparency and insight into climate conditions allow consumers, companies, investors, and governments to change the way they buy, produce, sell, transport, consume, and govern, which in turn has the potential to transform the way economies operate.

Building climate resilience entails substantial upfront investments and difficult trade-offs to achieve long-term sustainability. Still, through careful planning and broad public engagement, this transformation will demand a concerted effort by public, private, and societal actors. But after years where progress has been too limited, substantive change is within reach. The National Academy of Public Administration's Grand Challenge on Build Resilient Communities notes that "public agencies and administrators have an important role to play in building resilient communities. As this will require a crosscutting inter-governmental and intersectoral approach, public administrators can bring a diverse array of public, nonprofit, and private organizations together to develop strategies and implement programs. They can assist with mitigating and withstanding stresses, recovering, and applying lessons learned."⁴

Insights and Recommendations

The Future Shocks dialogues on climate resilience focused on three major topics:

- Clean energy transition
- Sustainable development (including land management)
- Water management

A broad cross-section of experts with experience at all levels of government, the private sector, civil society, academe, and international organizations recommend actions governments can take in the near term to build climate resilience across the three major topic areas. The identified steps do not constitute an exhaustive list of possible.

Strengthen capacity at the local level

All crises are local—but there is wide variation in how localities respond.⁵ The impacts of climate disruption may be a global existential crisis, yet the effects are experienced differently across regions, communities, and individuals.

Local communities have vastly different capacities, needs, and risks that require differing types of resilience response. The roles and responsibilities among the federal, state, local, and tribal governments for resilience need to be clearly defined to ensure coordinated capacity development and guard against gaps. Communities need a better understanding of how to use federalism as an asset to develop flexible resilience governance models that work across the levels of government.

The differences in outcomes are often a product of political choices about what is important and will therefore receive priority attention and resources. Regarding resilience, differing capacities can result from decisions that reflect deep-seeded equity issues. Local resilience efforts must be the foundation of any effective national response. Since it is at the local levels that the varying effects of climate change are most directly felt, it is often easier to broker agreements on specific actions to be taken. A primary question is, therefore, how can local efforts best be supported, augmented, and incentivized given the many competing priorities they face and limited resources available?

Local governments could use additional support in identifying the variety of ways they can strengthen resilience. Local economic development incentives and zoning codes can be used to redesign living areas to consider the natural environment and the risk of climate disasters more fully.⁶ Local government also can implement policies and programs designed to reduce energy consumption by creating systems and infrastructure that encourage non-wasteful solutions.

The point is not to suggest that these are new ideas—indeed they are being pursued with great success in many communities. In Europe and elsewhere, communities have demonstrated how climate adaptation can be integral to broader economic and local transformations leading to revitalized and more livable urban areas. Rather, the point is that information on how local policy and program tools can successfully be used singularly and more important in combination to foster resilience needs to be widely captured and disseminated.

Local resilience efforts often suffer from a shortage of knowledgeable staff—and those in place may be at the breaking point. For example, local emergency managers—whose responsibilities can span across multiple types of emergencies—are stretched way too thin. Multiple, overlapping “current shocks” that require immediate response are overwhelming their abilities to plan and respond.

Creative efforts are underway at regional, state, and local levels that are helping to build leadership and expertise on climate issues and resilience. For example, the Institute for Georgia Environmental Leadership (IGEL),

formed in 2001, is an effort to build leadership capacity and working networks at the state level.⁷ According to IGEL, it provides annual leadership development programs and a collaborative network for participants to identify and implement shared environmental solutions. Over 600 environmental leaders across all sectors in Georgia have participated in the program.

Local governments are recognizing that their resilience efforts need to be “whole of government” initiatives capable of cutting across local bureaucracies and organizing a collective effort in their jurisdictions. Designating Chief Resilience Officers (CROs) is one model increasingly being used to bridge organizational boundaries. “The Rockefeller Foundation launched the 100 Resilient Cities (100RC) program in 2013 to transform city governments, specifically by establishing the role of chief resilience officer—a senior leader in city government working to break down silos to build a more resilient city.”⁸ Building on these city efforts, some state-level CROs in the southeastern United States are now meeting informally to share information and experiences to mutually build capacity.

ACTION STEPS

- Work closely with local governments to understand specific capacity needs and how they can be met.
- Build communities of practice to develop local expertise in resilience planning and implementation.
- Share examples of successful local practices that have wider applicability, particularly in the use of local economic development incentives and zoning codes.

Build cross-boundary partnerships

Climate disasters and their spillover effects have no respect for geographic and political boundaries. Resilience initiatives likewise often need to cross jurisdictions to provide for coordinated efforts response and to share knowledge and experience. Regional partnerships to protect and enhance the Great Lakes, the Chesapeake Bay, and the Everglades are broad, multi-jurisdictional efforts.

Several examples illustrate the value of partnerships that bring together stakeholders across sectors to identify and address climate issues and the need to strengthen resilience. For example, the Southeast Florida Regional Climate Change Compact is an example of collaboration across local governments.⁹ The Compact is a partnership between Broward, Miami-Dade, Monroe, and Palm Beach Counties in Florida. According to the Compact, it seeks to “work collaboratively to reduce regional greenhouse gas emissions, implement adaptation strategies, and build climate resilience across the Southeast Florida region.” Its efforts center on sharing tools and knowledge, increasing support and political will, and coordinating action.

Also, the Ten Across (10X) initiative is certainly one of the geographically broadest regional collaborations.¹⁰ The 10X initiative covers the U.S. I-10 corridor, which runs across the southern United States, from Los Angeles, California, to Jacksonville, Florida. According to 10X, “the U.S. Interstate 10 corridor (is) the premier observatory for the future, one which presents the challenges of the 21st century in their highest relief. Together with our growing network, we engage the conditions found within this transect to reveal our collective capacity to create a more resilient future.”

Taking advantage of today’s data availability and technology to analyze and share it on a greater scale than ever before is needed to achieve the substantial transformation and innovation required for sustainability. Digital technologies can enable a new model of sustainability governance where the private sector, governments, and local communities work in collaboration as partners.

ACTION STEPS

- Encourage regional collaboration that maps to cross-boundary climate risks.
- Use data to identify collaborations opportunities to avoid duplicative efforts and pinpoint gaps.
- Gather and share good practice on collaborations, particularly on the models employed and use of dashboards to manage performance.

Foster public engagement

Resilience planning almost inevitably requires balancing off competing interests and priorities. Water-related issues (floods from too much and droughts from not enough) provide countless illustrations of how contentious such issues can be, and how much needed progress can be stalled at key decision points. Experience has shown that the only way to equitable solutions is through community-based multistakeholder forums to discuss

and balance different interests. More broadly, however, resilience initiatives grounded in well-established public engagement strategies and human-centered design approaches offer proven paths for ensuring that voice, access, and representation are afforded to all segments of a community.

Government communication strategies need to continue to develop in sophistication and targeting. Risk and disaster communication are well recognized disciplines. However, governments at all levels need to do more in key areas, such as incorporating insights from behavioral science on how to structure choices into communication strategies. Communication strategies also need to speak to the public in a language that leads to action. For example, references to “100-year floods” may give a false sense of security rather than promote resilience efforts. Expanding the use of “compelling stories” in resilience communication can make the situation and calls for action less abstract and technical.

ACTION STEPS

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Manage climate risks and strengthening resilience

Risk management provides decision makers and the public with clear pictures of the risks and expected consequences from climate change, as well as the opportunities from improved resilience. Effective risk management also considers the synergies and “spillover” effects—both positive and negative—of resilience initiatives. For example, promoting walkable urban areas can have a host of major economic and social benefits that extend well beyond energy savings. On the other hand, rapidly moving to electric vehicles can further stress already overburdened electric grids. Identifying and understanding secondary effects is important so that they are effectively managed.

Risk must be continuously monitored and reassessed as needs change and response strategies evolve. According to March 2023 Intergovernmental Panel on Climate Change report, “the effectiveness of adaptation, including

ecosystem-based and most water-related options, will decrease with increasing warming. The feasibility and effectiveness of options increase with integrated, multi-sectoral solutions that differentiate responses based on climate risk, cut across systems, and address social inequities. As adaptation options often have long implementation times, long-term planning increases their efficiency (high confidence).”¹¹

ACTION STEPS

- Widely share information on the methodologies, technology, and data used in risk management.
- Fully consider the potential positive and negative spillover effects from resilience initiatives.
- Develop case studies and guidance on how specifically to use the results of risk assessments to inform planning and guide decisions.

Financing Climate-Related Sustainability and Resiliency Initiatives

There are two related ways to pursue climate change initiatives that focus on sustainability and resilience via direct funding and structuring investment incentives. As a major step forward, the 2021 federal Bipartisan Infrastructure Law (BIL) provided \$550 billion through 2026 in federal funding for infrastructure, including roads, bridges, and mass transit, water infrastructure, resilience, and broadband. Moreover, federal R&D spending is vital in this area. Climate-related federal R&D funding is particularly important because much of the technology that will be needed to fully make the green energy transition is not currently available. The U.S. Department of Energy’s Office of Clean Energy Demonstrations has been identified as an important development in accelerating the green energy transition.¹² The Office’s programs include “investments in clean hydrogen, carbon management, advanced nuclear reactors, long-duration energy storage, industrial decarbonization, demonstrations in rural areas and on current and former mine land, and more.” The BIL provided \$21.5 billion to support large-scale clean energy demonstration projects.

The private sector can be a constructive partner in the transition to clean energy and strengthening resilience. Beyond the funding available through the BIL for projects undertaken by the private sector, a key task for government is to understand how to work with the private sector and to “get the incentives right” for broader private sector investments. “Public agencies at all levels of government have a role in funding clean energy R&D and spinning new technologies off to the private sector. These technologies can help

reduce carbon dioxide emissions and mitigate climate change risks.”¹³ The Inflation Reduction Act (IRA) was acknowledged as a major step in creating the right investment incentives. In addition to tens of billions of dollars in direct spending, the IRA contains about two dozen tax provisions to incentivize the transition to green energy, with a special focus on equity issues.

There is also the need to better budget for risk, especially climate risks. Biden administration proposals show the budget and revenue implications of climate change across numerous categories for federal programs. For example, the FY2024 budget shows illustrative projections for increased expenditures under several climate scenarios.

ACTION STEPS

- Reinforce mechanisms that connect specific local resilience funding needs to public and private sources.
- Work with the private sector to understand how spending, tax policies, regulations, and government contracting can be used to incentivize private sector investments.
- Budget for climate risk.

Government’s Role in Leading and Supporting the National Resiliency Agenda

The U.S. federal government has important and overlapping roles in leading, incentivizing, supporting, and facilitating state and local resilience initiatives. But to fulfill these roles, the capacity to direct and coordinate efforts across the federal government and with state and local governments needs to be strengthened.

Underscoring the need for action, the Government Accountability Office (GAO) issued its most recent biannual High Risk List on April 20, 2023.¹⁴ Limiting the federal government’s fiscal exposure by better managing climate change risks, first added to the list in 2013, remains on the 2023 list. GAO identified actions urgently needed in the federal government’s roles as (1) insurer of property and crops, (2) provider of disaster aid, (3) owner or operator of infrastructure, (4) leader of a strategic plan to coordinate federal efforts, and (5) provider of data and technical assistance to federal, state, local, and private sector decision makers.

Climate change and resilience efforts obviously do not align neatly with governments' organizational silos. Such crosscutting problems require networked and sophisticated responses. These include organizing federal service delivery along the lines of "life experiences" rather than federal program structures and administrative processes. For instance, recovering from a natural disaster is one of the administration's targeted life experiences and human-centered design strategies are being used in the CX life experiences projects.

The federal government has broad experience with successful policy development through interagency collaboration, but much less so with interagency implementation. The evolving federal role in supporting resilience efforts increasingly requires the federal government to assume central roles in both policy and implementation. The implementation efforts of the Interagency Council on Homelessness, the federal Permitting Council, and Trusted Workforce 2.0, to reform the personnel vetting process, are examples of interagency implementation collaboration that provide models for federal efforts. In all cases, an implementation team with dedicated resources, a clear plan, and public performance dashboards are essential to their progress.

The federal government has a broad range of policy tools that it can use to spur resilience. For example, each year the federal government spends over \$600 billion on contracts—and billions more are spent by state and local governments. This enormous buying power presents a powerful opportunity to change the marketplace if green energy, water and land management, and resilience are systematically embedded in procurement decisions and contracts.

The hundreds of billions of dollars in grants that the federal government sends to states and local government each year provide additional opportunities to incentivize and support resilience efforts. Grants programs that match state and local funding commitments are an example of using federal funds to incentivize and leverage state and local investments. Federal agencies also need to continue to explore creating grants that fund regional initiatives that cut across state and local boundaries. Funding for regional watershed protection is an especially ripe opportunity.

Grants requirements can also be used to create incentives for resilience. An example, GAO reported in 2019, is "requiring building codes and (design) standards based on the best available information for infrastructure built or repaired with federal funds."¹⁵ The federal government should likewise aggressively use its grants and regulatory waiver authority to encourage experimentation and flexibility among the states and local governments. Waivers should come with clear performance standards and strong evaluation and reporting requirements to ensure that the bar is raised, and communities increase their resilience to climate disasters.

The federal government also should limit disincentives to resilience. Efforts to reduce the administrative burdens imposed on grantees need to be strongly encouraged. One way is to get the balance right on speed in the execution of grants, grantee flexibility, and financial and outcomes accountability. As part of this, federal efforts to support and incentivize local initiatives must be sensitive to vastly uneven capacity among localities.

While discretionary federal grants (i.e., those where the grantee must apply and be selected to receive the funding) constitute a subset of overall grant funding, such grants can be an important part of a government's resources. The problem is that many local governments, especially smaller ones, may lack the staff and the knowledge needed to apply for federal grants. Resource constrained local governments must carefully weigh the trade-offs of the time and effort needed to apply for a grant, the likelihood that their application will be approved, and the costs if it is not.

Agile regulatory processes also can be a key instrument in driving change and fostering resilience. In 2022, NAPA and the Project Management Institute presented an “agile regulatory framework” for federal agencies to use to streamline and reform their regulatory practices.¹⁶ The administration has issued an Executive Order to modernize the regulatory review process.¹⁷ Among other things, the order seeks to create a more transparent, inclusive, and publicly engaged regulatory process.

The federal government also has a central role in conducting and supporting research on climate change resilience. The federal government is best positioned to organize a national research agenda that identifies good practices across the public and private sector and how they can be scaled. The U.S. Climate Resilience Toolkit and the case studies it has gathered are a good example of information sharing that is intended to spur innovation.¹⁸

In addition, the federal government can facilitate innovation by compiling and broadly disseminating the results of state and local projects done under federal waiver authorities.

Finally, individual federal agencies that are most directly involved in resistance efforts need to ensure that their programs fully support local and regional resilience initiatives. For example, the U.S. Army Corps of Engineers' water infrastructure projects that address both water quantity and quality issues are major parts of successful local resilience water efforts.

ACTION STEPS

- Strengthen the federal capacity to support state and local resilience efforts.
- Use waivers—with rigorous evaluation requirements—to drive change and generate innovative approaches.
- Ensure federal procurements foster resilience.
- Reduce administrative burdens throughout the grants process.
- Create multistate, regional grant programs, especially for watersheds.

LOOKING FORWARD

Despite the clear evidence of the damaging consequences that climate change already is having on individuals and communities across the planet, the world is not on track to meet the internationally agreed-upon targets for limiting global temperature rise and transitioning away from the dependency on fossil fuels.

Governments at all levels need to continue to build capacity, create partnerships, share knowledge, and strengthen resilience strategies, including the transition to green energy, sustainable development, and water and land management.

While the benefits are large, building resilience can be costly and difficult. The challenge, as one expert noted, is governments and societies often do a much better job in addressing acute problems than they do with chronic problems. The chronic is always easy to postpone, given competing immediate priorities.

Endnotes

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