



Preparing Governments for Future Shocks Integrating Climate Resilience Roundtable: Read Ahead Materials

Introduction to the Future Shocks Initiative

Government leaders increasingly indicate that what were previously viewed as Black Swan events are now becoming more frequent — and more destabilizing — shocks. The past three years saw acceleration toward a connected world where physical goods and digital services are increasingly interdependent. The vulnerability of social and economic well-being is laid bare by reliance on connectivity and distributed value chains subject to disruption on multiple fronts.

Risks have grown due to complex variables such as geopolitical conflicts, multiple public health emergencies, energy crises, climate-related natural disasters (wildfires, hurricanes, drought), the breakdown of longstanding trade relationships, economic displacement, and economic inequality. The combination of these factors renders current planning models obsolete.

Citizens, non-governmental organizations, and commercial enterprises continue to rely on governments to help manage these uncertainties. However, traditional incident response frameworks may no longer be sufficient, as events occur across multiple domains, jurisdictions, and decision-making authorities. Rather, collaborative action to address anticipated threats requires focus and cooperation across a broad ecosystem of partners and stakeholders. Governments must prepare for “future shocks” by supporting stakeholders with insights, resources, innovation, and adaptation that characterizes a successful response to any high-impact event.

IBM, working through the [IBM Center for The Business of Government](#) and the [IBM Institute for Business Value](#), and in partnership with the [National Academy of Public Administration](#) (the Academy), has launched an initiative to help government identify core capabilities critical to building such resilience, and make progress toward addressing major national and international priorities including the [Grand Challenges in Public Administration](#) put forth by the Academy.

Through this initiative, we are convening a series of international roundtable discussions with global leaders from across the public, private, academic, and non-profit sectors to capture lessons across six key domain areas: [Emergency Preparedness and Response](#), Cybersecurity, Supply Chain, Sustainability, Workforce Skills, and International Cooperation. In each domain, we will harvest insights from the roundtables to identify strategies and solutions for governments to act. The first roundtables convened leaders in emergency management, cybersecurity, and supply chains for insightful discussions of actionable, and practical steps to build resilience by preparing for future shocks. Learn more about the initiative by reading the blog, [‘Preparing Governments for Future Shocks’](#) or [listening to the podcast interview](#) with Michael J. Keegan, IBM Center for The Business of Government.



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Future Shocks – Climate Resilience Roundtable Discussion

As we enter 2023, building climate change resiliency into our government institutions is more important than ever. Recent attention and investment in land management and impact on urban rural development, water conservation, and energy generation and transmission and its impact on air quality – and a focus on how these factors translate into sustainable infrastructure, are creating opportunities to enhance climate resilience.

The Climate Resilience Roundtable will focus on three major topics: the Energy Transition, Sustainable Development (including land management), and Water Management. The Session will develop insights and content to share with governments and key stakeholders to strengthen climate resilience and prepare for the inevitable impact of future shocks to our communities and societies. The Roundtable will also lead to the development of a research report to inform decision-makers at all levels of government.

Integrating Climate Resilience – Highlights from Research

Integrating climate resilience strategies into our government institutions is more important than ever before as climate change impacts continue to mount. The world’s natural resources—including public lands—are integrally connected to our economy, health, environment, and society. Public and private organizations around the world continue to grapple with how to sustainably steward forests, lakes, rivers, wildlands, mineral deposits, and fossil fuels. The growing global population and climate change contribute to increasing water shortages. Similarly, climate change and pollution have negative impacts on oceans and their ecosystems. In addition to protecting natural resources and the water supply, governments must address new and emerging environmental issues, including pollutants contributing to climate change.

Since the passage of major federal pollution control laws in the 1960s and 1970s, the United States has reduced the release of many pollutants to air, water, and land. Despite this progress, new health and environmental threats have emerged that must be addressed. While domestic greenhouse gas emissions have generally decreased, this decline has been insufficient to avoid significant future adverse effects on public health, ecosystems, and infrastructure due to climate change. From a broader outlook, the World Economic Forum’s Global Risks Report for 2023 observes that “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.” This report emphasizes that current policies and investments are not adequate to address the complexities and interconnections involved with problems like climate change, food security, and biodiversity loss.

Sustainability is now top of mind among citizens, governments, and businesses. Recent IBV research finds that 68% of individuals across 33 countries say that environmental sustainability is very or extremely important to them. 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. Carbon emissions are still rising, just one of multiple measures reflecting how the state of natural environments and climate is getting ever more precarious. IBV research shows that while 86% of organizations have a sustainability strategy, only 35% have acted on their strategy. Moving the needle on climate resilience is proving very difficult.

But new opportunities are emerging. Data and digital technologies open new ways to drive change in business 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.

Recent attention and investments in the conservation of land and aquatic environments, and more sustainable infrastructure, have provided more tools for governments and partners to integrate 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. Public agencies and administrators have a key role to play in creating safe and sustainable regional water systems through new plans to ensure that every sector's water requirements are considered and prioritized given limited supply. Authorities and strategies that enable investment that supports infrastructure repair, modernization, and maintenance to ensure safe and healthy water supplies must be developed. 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. Increased investment in R&D can help speed the transition to renewable energy, reduce emissions, and mitigate climate change risks.

A useful taxonomy to discuss some key barriers and solutions to achieving climate resilience focuses on three major themes identified for this roundtable: Sustainability (including land management), Water Management, and the Energy Transition (including impacts on air quality).

Key Reports for Reference

President Biden's [Executive Order](#) on Tackling the Climate Crisis at Home and Abroad provides discussion on the three roundtable topics and outlines the actions that the Executive Branch will take to move forward on those fronts.

The [Renewable Energy Market Update: Outlook for 2022 and 2023](#) published by the International Energy Agency discusses the future of new global renewable power capacity additions and biofuel demand for 2023. It also discusses key uncertainties and policy-related implications that may affect future projections.

The U.S. Energy Information Administration's [Short-Term Energy Outlook for the United States](#) provides data and predictions regarding changes in electricity generation, natural gas fuel usage, and coal consumption.



The National Academy’s Report “[An Innovation Foundation for DOE: Roles and Opportunities](#)”, provides an assessment of the value of a potential DOE-associated foundation to provide a flexible, efficient method to establish and enhance public-private research and development partnerships. The report focuses on the potential value of a foundation in helping to mature new technologies from basic research to commercial application.

The White House’s [Fact Sheet on the Bipartisan Infrastructure Act Resilience Provisions](#) explains how it will take action on climate change, including by investing in electric vehicle infrastructure and public transit.

The U.S. Department of Energy published an [article](#) to announce it established a new Office of Clean Energy Demonstrations Under the Bipartisan Infrastructure Act.

An [article](#) from the Natural Resources Defense Council advocating for global adoption of the 30 by 30 Initiative explains its history and importance.

The U.S. Department of the Interior provides a [short summary](#) of the Great American Outdoors Act, which provides permanent and mandatory funding for public lands acquisition activities and addresses the maintenance backlog that is challenging Interior agencies.

- National Park Service [Land Acquisition Accomplishment Report for FY22](#).

This [graphic](#) from the World Bank is helpful to understand the constituent elements of the Blue Economy.

This [webpage](#) provides a list of the National Marine Sanctuary System’s accomplishments by year.

IBM’s Institute for Business Value (IBV) report [2022 CEO Study – Own your impact: Practical pathways to transformational sustainability](#) reveals sustainability’s dramatic emergence onto the mainstream corporate agenda – and the need to act. Additionally, the IBM IBV report [Sustainability as a transformation catalyst](#) examines a group of leaders known as the Transformation Trailblazers that have acted on their sustainability strategy, outpacing the competition in both revenue growth and sustainability outcomes, and identifies 6 primary areas they stand out.

The World Economic Forum [2023 Global Risks Report](#) discusses some of the most severe risks that the world may face over the next decade, broken into three time frames to understand global risks and the potential impact of current and future crises.

The IBM Center for the Business of Government report [Using Technology and Analytics to Enhance Stakeholder Engagement in Environmental Decision-Making](#) covers National Environmental Policy Act (NEPA) activities conducted by four major federal land management agencies and focuses on how stakeholder engagement has been facilitated through the use of technology and how agencies can use analytics and AI to enhance their engagement tools.