Climate Change Resilience: Governance and Reforms

A Report

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FEBRUARY 1, 2017

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CLIMATE CHANGE RESILIENCE: GOVERNANCE AND REFORMS

A Report

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Overview

Successfully building resilience to the impacts of climate change requires significant shifts in how various sectors of society—governments, the private sector, community groups, and many others—interact with each other at multiple levels of governance—from the local to the national. Drawing on perspectives expressed during the *Climate Change Resilience: Governance and Reforms* summit in 2014, this piece explores the benefit of approaching resilience as tightly linked to basic "good governance" causes—such as economic development and community empowerment—across sectors and levels.

Introduction

This piece considers the key role of *governance* in efforts to foster greater resilience to climate change (subsequently referred to as "resilience"). Governance is essential to resilience efforts, which require extensive coordination across regions, sectors, and populations. The impacts of climate change vary by geographic region, and resilience efforts differ considerably across communities and societies. Legal, political, and economic systems and, broadly, governance structures, will determine how a changing climate will affect people and how people will adapt. The complexity, severity, and reach of the climate change challenge defy existing coordination efforts, and require a reconsideration of practices needed to support building resilience.

We convened a summit, *Climate Change Resilience: Governance and Reforms,* in Washington, D.C. on June 5 and 6, 2014,[2] to explore the cross-sector, multi-level, contentious, and political facets of resilience, and to examine links among resilience, community empowerment, and economic development. The summit offered an opportunity for participants to articulate diverse perspectives on these contentious and pressing issues, drawn from experience across a broad range of domains of practice and research. Participants included leaders and staff from federal government agencies and local policy, planning, and infrastructure efforts, as well as representatives from legal, industry, insurance, defense, non-governmental, and academic sectors. The summit created a space for discussion, dialogue, and learning, which we summarize here. The program, list of speakers, and recording of all sessions are available at www.resiliencesummit.org.

This report draws on the voices of summit participants and distills key messages that emerged; identifies challenges and issues associated with viewing and approaching resilience through a governance lens; and examines how endemic governance issues play out in the resilience space. Our hope is that this piece offers compelling insight to those addressing resilience challenges, and helps foster dialogue and collaboration.

What is governance? Governance encompasses the sum of overlapping authorities that determine how people and organizations are authorized to act and how reforms are made within a system. In the United States, governance is decentralized and polycentric,[3] and involves federal and tribal governments, multi-state compacts, states, counties, municipalities, and special districts, as well as private sector and non-governmental organizations.

What does resilience to climate change entail? Achieving greater resilience entails making systems better able to respond to changes, stresses, and threats posed by climate change. This includes the impacts of immediate events, such as extreme weather, as well as long-term changes to the environment and ecosystems. While the technical and physical aspects of resilience are important, so too are the social and political aspects. Understanding the systems that resilience efforts should focus on, how to reform those systems, and what resources to draw on needs to be prominent in resilience conversations.

What systems need to be more resilient? Because climate change affects most dimensions of individual and collective lives, many current systems need to be made more resilient. These include 1) social systems, which are comprised of communities, businesses and local organizations; 2) economic systems and markets; 3) ecosystems and natural resource systems; and 4) physical systems, including buildings, roads, and other infrastructure. Importantly, resilience must also be enhanced for interactions among governance structures and systems that support values like freedom, opportunity, rule of law, health, peace, and education. In the United States, actions and trade-offs that affect the resilience of these systems are made, implicitly or explicitly, through governance processes.

For whom do governance issues matter? Many people engaged in resilience encounter governance issues in their work. Community organizers need to be aware of the power dynamics in their communities. Emergency responders need to understand the local, state, and federal institutions with which they must coordinate. Supply chain managers need to lessen the risk associated with weather-induced production and transportation disruptions across sectors and regions. Increasingly, resilience is connected with a wide range of challenges, including national security, human health, community empowerment, and climate change mitigation efforts.

This piece discusses three kinds of governance issues that arise in resilience work: 1) Challenges to and responses from *communities and local governance systems*; 2) *Interactions among institutions within governance systems;* and 3) The need for changes to policies, practices, and social patterns, or *systemic issues in governance*. Summarized below, and expanded on in the remainder of this piece, we discuss nine ways to apply a governance lens in addressing these resilience issues.

Nine Ways to Apply a Governance Lens to Climate Change Resilience

Communities and Local Governance Systems

Build on the community's values and history	Attention to community motivations, incentives, and histories can help build support for resilience planning.
Enhance resilience through broad community participation	Active engagement of a wide range of community members can enable more democratic, inclusive approaches to resilience that align with community needs.
Recognize resource constraints	In many local organizations, human, financial, and technological resources and capacity are limited.

Institutions Interacting within Governance Systems

Understand the diverse stakeholders that impact resilience	Entities at every level of government, in civil society, and in the private sector, and the constraints they face, affect the outcomes of resilience efforts.
Coordinate and develop working relationships with diverse stakeholders	Developing resilience involves consulting with, communicating, and coordinating actions with many diverse stakeholders.
Accept the contentious nature of resilience building	Working through conflicts is an important part of the political, policy, and capacity-building process. The ability of governance systems to address conflicts needs to be strengthened.

Systemic Issues in Governance

Change laws and policies that limit resilience	The U.S. governance system allows for reforms at multiple levels. Outdated laws and policies constrain resilience efforts, and need to be updated or changed to build resilience.
Reflect on barriers to updating government processes and norms	The lack of substantive action to bolster resilience reflects both the deliberative nature of U.S. legislative bodies and the impact of interests that favor the status quo.
Address disparities and power dynamics	Addressing social, economic, and racial disparities and increasing inclusiveness and empowerment can lead to improved resilience.

Communities and Local Governance Systems

Important and innovative adaptation and resilience work is happening in local communities and involves municipal governments, regional collaborations, and coordination among government agencies active in a community. Drawing from their experience, summit participants shared lessons that inform resilience-building efforts at the community and local levels. Below, we describe ways to strengthen local resilience while acknowledging the challenges faced by today's governance systems.

Build on the community's values and history

Building resilience requires policies and approaches that not only appear workable in a conference room of decision makers, but that also successfully interact with communities' existing political and policy structures. Leaders and community members can foster a shared understanding of and response to resilience issues by paying attention to the context, history, values, and goals of the community.

Attention to community-level context and issues is especially important for "outsiders," such as federal entities responding at the local level. Dr. Marcy Rockman, an anthropologist and Climate Change Adaptation Coordinator for Cultural Resources for the National Park Service, is often asked: "How do we get people to change their behavior?" Rockman responds with questions of her own: "What do you know about the behavior you're trying to change? How long have they been doing it? How is it part of the larger systems within which people are living?" By working through these questions, and developing solutions that are congruent with and compelling for the community—such as using place-based stories to help people connect to climate change[4]—both the community and the outside entities can develop impactful ways to build resilience.

Daniel Wallach, the Executive Director and Founder of Greensburg GreenTown, shared a successful example of engaging with community values. Wallach worked on the recovery effort in Greensburg, Kansas, after much of the town was destroyed by a tornado in 2007. Faced with the devastation, the community decided to replace many destroyed buildings—including the arts center, city hall, schools, the hospital, and the courthouse—with LEED-certified buildings that can resist future extreme weather events. Describing the town's efforts, Wallach told the summit:

> The question I get all the time is, 'How did this extremely conservative, isolated, economically depressed, rural community come to embrace this radical green initiative?'... From day one we were very clear that if this initiative was not authentic to the people in the town, it wasn't going to have legs. So from day one, I used my organizing background to talk with people... The question I got was, 'So you're a tree-hugger, aren't you?' I said, 'No, no, I'm not a tree hugger and I'm certainly not an environmentalist, but I do care a lot about survival and I care about my family and I care about creation...' [This approach] helped them understand this was about their future, their kids' futures, and that their ancestors were the original sustainability advocates... They are conservatives who conserve

and do not like waste… Conservative values and sustainability values are virtually identical.

While Wallach said this approach was time-consuming, it helped people "change the entire trajectory of their rebuild" from the status quo to building a more resilient, sustainable town prepared for the impacts of future extreme weather events.

Enhance resilience through broad community participation

Communities must own their resilience-building efforts. Ownership empowers the community and promotes the effort's longevity and success. Jessica Grannis, Adaptation Program Manager at the Georgetown Climate Center, argued that resilience decisions cannot be made dictatorially, whereby a leader says, "'Yes, we're going to do *this* and we're going to adapt.'" Instead, Grannis says, "A conversation [is needed] with the folks who are going to be affected in a community to get buy-in and figure out what the right [resilience-building] strategy is." Similarly, Dr. Sabrina McCormick, Associate Professor of Environmental and Occupational Health at George Washington University, warned that "dropping in standardized approaches and institutions" that were developed elsewhere is likely to be "pretty ineffectual."

Post-Hurricane Katrina recovery efforts in New Orleans illustrate the effectiveness of community participation and decision-making. Dr. Barbara Allen, Professor of Science and Technology in Society at Virginia Tech, found that: "All of the groups that poured in to New Orleans post-Katrina wanted to do good. [But although] they all wanted to help responsibly [and although] the amount of money and resources that poured in… was huge… the money spent was *not* the determinant of success." Rather, Allen argued that the recovery efforts that fostered justice, fairness, and community empowerment were the successful ones.

Dr. Allen specifically contrasted post-Katrina rebuilding outcomes of two New Orleans neighborhoods. In one case, even though a non-profit came in with significant resources and organized with more than a hundred local environmental and social groups—including labor groups and historical preservation groups—years later, she says, "This neighborhood is still struggling," and the rebuilding was "not a success story in any sense of the word." In another community, a different non-profit took a contrasting approach and asked the community: "'Do you want to work with us [to rebuild]?'… If the neighborhood agreed, the non-profit said, 'We have two rules: Rule number one is, we're not going to tell you what to do. You have to figure that out. Rule number two is, we're not going to give you one penny, so don't even ask." This approach resulted in the development of sustainable solutions through local community ownership and empowerment.

Similar lessons emerged from recovery efforts following Superstorm Sandy, as detailed by Nate Kleinman of the Cumberland County Long-Term Recovery Group in New Jersey and of Occupy Sandy, a grassroots organization that orchestrated much of the community-level response in impoverished and disenfranchised areas affected by Superstorm Sandy. Kleinman emphasized that basic community organizing, while time-consuming and labor-intensive, is highly effective.

In Kleinman's words, what set Occupy Sandy apart from other post-Sandy assistance efforts was its commitment to "trying to listen to people and not suggest its own solutions, but [to] hear what people needed and simply offer organizing tools to people who were in desperate need of them… In so many cases, people just needed to know how to get together with their neighbors and with other communities…"

Ensuring the participation of all groups within a community in resilience discussions is critical. Poor, minority, or disenfranchised communities often do not have a seat at the table in resilience discussions and thus cannot voice and get support for their ideas. Dr. Jalonne White-Newsome, Senior Program Officer with The Kresge Foundation's Environment Program (and Environmental Justice Federal Policy Analyst at WE ACT for Environmental Justice at the time of the summit), underscored how members of communities dealing directly with impacts of climate change and environmental injustice "are [often] not brought in as experts. Sometimes, and not in all cases, they're brought in to check the ['community participation'] box, to say, 'Hey, we got somebody. Okay. Whatever.'" Such interactions are detrimental for the excluded groups and impede creating shared understanding and support within a community, which is necessary for effective action.

Efforts to bridge racial and class differences can increase a community's capacity for resilience. Building resilience underlines the tension between the need for urgent preventative action and the slow, iterative process of democratic reform. White-Newsome pointed out that resilience and justice are about "making sure that community members are engaged in whatever governance process that's happening, that they are actually trying to create [and] build the solutions, and are part of the actual implementation of those solutions." While urgency may trump thoroughness at times, solutions developed through inclusive processes that empower stakeholders are more likely to enhance resilience.

Recognize resource constraints

Effective resilience planning requires a long-term perspective supported by fiscal, human, and technical resources. Victor Flatt, Director of the Center for Law, Environment, Adaptation, and Resources at the University of North Carolina School of Law, emphasized: "The big problem is planning for change… what [we] should be doing and what [we] should look like ten years from now, twenty years from now, thirty years from now, and forty years from now. To do planning, particularly the kind of thoughtful, integrated planning involving local groups, you need resources… and we don't have those resources."

Climate change impacts are often felt most acutely at the local level. Yet, localities often lack resources to prepare for and respond to the effects of climate change; staffing is a major challenge. Grannis, of the Georgetown Climate Center, described that, "In a lot of the communities we work with, there's only one person wearing multiple different hats and also trying to be the adaptation guru and bring climate [change] into their laws and policies on the ground." To be effective, these people would ideally know how to "integrate what they want to do into the very complicated layers of laws at the local, state, and federal levels," but this capacity is often limited, hindering resilience building.

A lack of human resources can have severe consequences for political and community leadership. Rear Admiral Dr. David Titley, Director of the Center for Solutions to Weather and Climate Risk at Penn State University, recounted local government leadership challenges after Hurricane Katrina: "There were several towns on the Mississippi coast where the mayor literally disappeared. *Literally disappeared*. They had a nervous breakdown. They were gone. So there was nobody running the place." This severely limited the initial response and undermined the resilience capacity of the towns.

Hand-in-hand with human resource constraints are funding constraints. Under normal operating conditions, unless disasters strike, "There's never going to be enough [higher-level] government funding," warned Alice Madden, Principal Deputy Assistant Secretary for Intergovernmental and External Affairs at the United States Department of Energy. Thus, "Cities and states need to learn how to fund [resilience efforts] themselves." But while leaders in larger cities, such as San Francisco, have successfully made the case to taxpayers or utility ratepayers to fund infrastructure upgrades, such successes are few and far between.

Some capacity issues can be alleviated through coordination and collaboration with entities that have experience, expertise, or other resources. Such coordination can happen vertically, between organizations at different scales or levels, and horizontally, as addressed below.

Institutions Interacting within Governance Systems

While much work to increase resilience starts at the local government or community levels, institutions with broader jurisdiction also play important roles. City governments, for example, interact with community groups, special districts, and other cities, as well as with state and regional governments. Below is a partial list of factors that positively contribute to a city's ability to build resilience:

- A strong economic base and a stable regional economy
- Sustainable management of natural resources on which the city depends
- An understanding of natural and human-caused risks
- Political will to act, including the ability to raise revenue locally
- Legal authority to act under state and federal law
- Appropriate use of market forces and insurance-related incentives
- Constructive engagement with and inclusion of disadvantaged and marginalized groups inside and outside the city
- Communities and cities "upstream" not shunting their problems "downstream"
- A legal or political environment that facilitates conflict resolution

Each of these factors is associated with its own social, political, economic, and technological drivers, and its stakeholders and jurisdictions. Thus, effective work on resilience requires an awareness of multiple overlapping authorities and spheres of influence, and multifaceted—and

often slow and costly—engagement. Below we describe approaches to strengthening interactions between diverse entities for building resilience capacity.

Understand the diverse stakeholders that impact resilience

The U.S. governance system involves a diversity of stakeholders—the federal government, tribal governments, multi-state compacts, states, counties, municipalities, and special districts, as well as private sector and non-governmental organizations (NGOs). While governments shape the landscape of resilience significantly, smaller actors, like NGOs, can also exert a powerful effect. Rear Admiral Titley recounted how "church groups [and] faith-based groups did incredible work on the Mississippi coast [after Katrina]... It wasn't the Feds. It wasn't big anything." Organizations, including universities, professional societies, unions, health and public safety institutions, insurers, and regulators can also affect resilience actions. Universities can improve understanding of impacts and approaches to enhancing governance. Professional societies can establish best practices and quality control for resilience and planning. Unions can educate members about climate change and help vulnerable people prepare for and cope with changes. Health institutions, such as hospitals, and public safety institutions, such as fire departments, are vital first responders. Insurers and regulators can shape incentives to support resilience efforts. Staying current on the relevant groups, their capacities, and emerging programs is essential to involvement in resilience efforts.

Coordinate and develop working relationships with diverse stakeholders

Coordination, collaboration, and sharing of ideas and resources among resilience stakeholders are essential for effective resilience building. "There's no one sector, no one level of government that can solve the problem," according to Susan Ruffo with Bloomberg Philanthropies (and Associate Director for Climate Preparedness at the White House Council on Environmental Quality at the time of the summit), and only a systems approach can offer a cross-cutting perspective. Climate change impacts vary regionally in nature, severity, and timing, and do not heed political boundaries. For example, Judge Alice Hill, Senior Director for Resilience Policy at the National Security Council, remarked, "Communities across the globe, including in the United States, are going to have to plan for the impacts of climate change and that poses a governance challenge when the impacts don't honor jurisdictional boundaries. They cut across county lines, state lines, and international boundaries."

Yet, according to Grannis, of the Georgetown Climate Center, too many people are working toward resilience in isolation. Instead, coordination is needed "horizontally across internal agency silos—your emergency responder needs to work with your planner, needs to work with your public health department, needs to work with your floodplain managers..." Sometimes the process of bringing information to communities, developing strategies, and securing buy-in from those communities can "allow folks and communities to break down the silos," said Grannis.

Lindene Patton, Global Head of Hazard Product Development at CoreLogic (and Chief Climate Product Officer at Zurich Insurance Company at the time of the summit), observed that resilience

"challenges are not challenges necessarily of pure engineering and science, [but rather of] marrying up that engineering and science with economics and leadership." Resilience-building requires *systems* thinking that offers recognition of interdependence between aspects of a community, society, or government, and an understanding that changing one aspect can have unanticipated cascading effects through the rest of a system. For example, while economic development policies attract new people and businesses to a community or region, they may put additional stress on local ecological resources and pose long-term resilience challenges.

Climate change impacts and U.S. governance structures are marked by great complexity, which limits the capacity of central planning and top-down leadership to enhance resilience, whether by governments or markets. Moreover, the diversity of resilience stakeholders implies that no one entity may be identified as responsible for failures, as reflected in international climate change negotiations. Jackie Roberts, Chief Sustainability Officer at the Carlyle Group, shared that a "challenge with resiliency is, Katrina hits, and it's not one company [or entity] being held up as mismanaging the issue and therefore getting stung. Everybody is affected and nobody is blamed."

Given the limited resources at the local level, as described earlier, coordination at the regional level can be of vital importance for resilience work. Grannis, of the Georgetown Climate Center, described the development of regional collaboratives that address issues on scales larger than communities but smaller than state governments: "Big cities like Los Angeles can help out their surrounding neighbors that will also affect them and vice versa. You're seeing regional collaboratives in southeast Florida; there are four that have cropped up in California. Small communities can latch onto larger communities with more pull to bring in resources." Coordination and collaboration are also emerging at the federal level, as agencies are encouraged to ensure that programs support resilience capacity-building, and to develop adaptation plans.

Accept the contentious nature of resilience building

Like any inherently political issue, resilience efforts and responses to climate change impacts give rise to conflicts. Sometimes conflicts can be good for a community. One unusual example was shared by Wallach, of Greensburg GreenTown. Because the tornado that hit Greensburg was the "first major disaster after Katrina... there was a lot of political tension and competition among government institutions and other groups trying to help," and that competition "was good for Greensburg."

Conflicts can arise, however, not only about *whether to* address resilience issues, but about *how to* address them. Given the systemic nature of resilience challenges (as will be described below) and the ability for resilience failures to cascade through a system, decisions pertaining to resilience can create conflict. According to Grannis: "The responses that your neighbors implement could be maladaptive for you; they could directly affect you [negatively]. Someone builds a seawall upstream of you, and they direct water down your way that exacerbates your flood risk or your erosion risk." To better address resilience conflicts, Grannis suggested that, "We need structures in place to help us figure out what options are available," and how to make trade-offs and

compromises "between options, between communities that are affected, and between sometimes competing goals."

While politics and negotiation can address resilience conflicts, the legal system will play a major role. Judge Hill, of the National Security Council, emphasized this point: "Even though [climate change] is a novel problem, I think we're still going to rely on some of our governance structures that already exist, like the courts, to sort out the very difficult liability issues." It's not clear to everyone, however, that our legal system is prepared. Michael Gerrard, Director of the Center for Climate Change Law at Columbia University argued that:

> Whether its highways, railroads, bridges, dams, airports, and so forth, [the] emerging legal requirements to look at climate change [are] very spotty. We're not getting the sort of consistent, systematic guidance from the top that we should, but there are environmental organizations and academic organizations that are trying to press for more systematic analysis.

Gerrard warned that "the pace of climate change and the magnitude of what is likely to happen in the coming decades may well overwhelm both the existing physical and legal systems…"

Systemic Issues in Governance

The causes of climate change and of resilience challenges are embedded within U.S. governance, economic, and social systems and practices, and cannot be understood separately from them. Rockman, of the National Park Service, shared the perspective of Tribal community members she worked with. In response to questions about their approaches to addressing climate change, one Tribal community member said:

> Why are you asking me about climate change, and climate change alone? It is actually the consequence of everything else you have been doing. It is a consequence of development. It is a consequence of pollution and consumption, growth and all these things. Why are you separating it out by itself? We could adapt to climate change, but we can't now because you've built a sewage plant over our salmon runs, [and] there's now a highway through where we used to cross… We are constrained by all of the things that are going on in the world. It's not just climate change. Please think holistically.

Building resilience must be approached from a systems perspective. According to Flatt, of the University of North Carolina School of Law: "We, as a society, evolve. Our informal structures evolve, our formal structures evolve, our legal structures evolve." But with climate change, systemic evolution must be deliberate and sustained. As Dr. Laura Petes, Senior Policy Advisor for Climate Adaptation and Ecosystems in the White House Office of Science and Technology Policy, pointed out: "A couple of decades ago… we thought we could engineer our way out of this and that maybe we wouldn't have to adapt." Now, she stated, "We can't afford *not to* adapt."

In the sections above, we focused on ways to foster resilience within our existing, polycentric governance systems.[3] Below, we offer perspectives on systemic barriers to resilience and potential remedies.

Change laws and policies that limit resilience

Legislative change is required for successful governance for resilience. Most existing laws governing the social, economic, political, and technological systems affected by climate change were written prior to an understanding of the phenomenon and its impacts. Flatt, of the UNC School of Law, bluntly told the summit that: "Our basic, existing laws are often barriers to climate change [resilience and] adaptation." Grannis, of the Georgetown Climate Center, concurred: "Oftentimes, there's a conflict between the community's vision for resilience and how the law will allow them to achieve that vision... There are big structural changes in our laws that need to be made and that requires Congress to engage on these issues."

Disaster responses reveal needs and opportunities to update governance structures and established practices. "People use [disasters] as an excuse to cut through red tape, to ignore regulations, to make exceptions," according to Kleinman, of the Cumberland County Long-Term Recovery Group and Occupy Sandy. "Sometimes [existing policies] are important and are there for a reason, but a lot of times they don't serve [us well] anymore. This 'disaster thinking' mode really has some value for us given the layers and layers of bureaucracy that people often have to deal with." Jonathan Reeves, Manager in the Office of Emergency Management of DC Water, agreed by noting that: "Some of [DC Water's] most important work on very sensitive parts of [Washington, DC] is done under emergency conditions because it's *that* onerous to do it through the normal planning and approval process."

Legislative change is challenging. Yet, while alternatives to legislation, such as non-binding commitments, statements of principle, executive orders, or exceptions made during responses to crises, can be easier to achieve, they are not as powerful or long-lasting as legislative change. Grannis noted:

> The challenge is if we do all of this labor to promote resilience through existing [government] programs and do all this hard work and discussion, and we're not incorporating that into the laws and policies that are on the books, there's a huge risk that we'll be creating this beautiful *Mona Lisa* painting on an Etch-a-Sketch and the next administration will come in, have different priorities, shake it up, and all of that wonderful work will be lost.

Moreover, policy changes should be coupled with economic changes. Patton suggested that we consider, "those pieces in our existing economy... that might need a little shift or a move to better utilize... financial tools..." For example, a different regulatory environment around insurance could enable improved rebuilding following a disaster. The federal government could also do more to support resilience in ways that promote inclusion of marginalized groups and strengthen communities. Flatt, of the UNC School of Law, proposed:

Funding from the federal government should be predicated on local governments doing things in a particular manner. In Louisiana, [there were] a few [charrettes] after Katrina, [in which] you get the community together and you 'vision' about what you want [the community] to look like in the future. If you did that [in other places], if you involved every community, if you involved low-income communities, minority communities, business communities, and non-profits, then funding would be released to allow you to actually start moving and making that planning go forward.

Moreover, Flatt recommended equal distribution of post-disaster resources, free from the influence of political connections. Successful examples of such policies exist, including the Coastal Zone Management Act, which "has been around for over three decades and has worked fairly well," said Flatt. Specifically, the law "gives money to states to plan for coastal development if they do certain things and plan in a certain way."

Successfully preparing for climate change impacts, across institutional, economic, and policy domains, requires continuously learning from complex social and natural systems resilience efforts. It is crucial to put into place legal and policy frameworks that are flexible enough to incorporate lessons learned, and allow leaders, communities, and institutions to address their changing needs and circumstances in decision-making processes.

Reflect on barriers to updating government processes and norms

Resilience advocates must understand how lawmaking occurs, because even with strong intent and advocacy, updating laws and policies can be challenging. For example, Patton noted that: "The insurance industry has, for more than a decade now, lobbied for improved building codes," but with limited effect. Flatt, of the UNC School of Law, pointed out that lawmakers "don't often want to reopen [existing laws] because they are afraid of what's going to happen." Grannis provided an example from California:

We saw there were problems with our California Coastal Act but there was a fear that if we went to try to fix that law and opened that law up, the special interests would take advantage of that and basically gut all these environmental protections that we'd worked so hard for so many years to put in place. There's a hesitancy to go in and make the big structural changes that are needed because of the possible negative consequences.

In many situations, the status quo does not get challenged. Dr. Vivian Thomson, from the Departments of Environmental Sciences and Politics at the University of Virginia, explained that achieving governance reforms to address climate change has been particularly challenging in "passive states" where "legislators are not well paid [and] lack expert staff, making it difficult for them to act independently of lobbyists or the executive branch, especially in highly technical areas." This is because: "Passive states display elite-dominated, traditional political cultures, patterns of campaign finance donations that favor fossil energy interests, and low legislative professionalism." Dr. Gar Alperovitz, an historian of social movements from the University of Maryland, argued that without changes to the relative power of groups represented and affected

by governance systems, institutions that benefit from the status quo will continue to set the agenda for sustainability, climate change, and resilience in ways that benefit them.

Address disparities and power dynamics

Governance structures and processes reflect power imbalances. Established social, economic, racial, and class disparities impact and constrain resilience. These power imbalances need to be addressed. Working toward inclusiveness and empowerment of disenfranchised and marginalized groups in the resilience-building process can lead to better solutions and support a more just and equitable society.

Kleinman, of the Cumberland County Long-Term Recovery Group and Occupy Sandy, offered an example of how socioeconomic status shapes the options considered in resilience planning: "With respect to poor communities, [decision makers] talk about managed retreat [from the coast due to sea level rise and storm damage]. Policymakers would never dare bring it up when talking about a place like Long Beach Island." Such options reflect the lack of political power of poorer communities in contrast to the political influence of richer communities.

To bring people with fewer resources, power, or divergent interests into governance processes, resilience leaders must also broaden the range of issues encompassed by resilience. For example, Kleinman shared that, "When you ask most people, they're not going to say that helping a small group of non-English speakers start a cooperative bakery is disaster relief. But when you ask the people in the Rockaways what they needed [after Hurricane Sandy], it [was] jobs, it [was] economic development." While including economic development and social justice into resilience discussions is challenging, it can strengthen resilience outcomes and build a more democratic society.

In Conclusion

Meeting the challenges posed by a changing climate calls for updating governance practices to incorporate more flexible, inclusive, and cooperative approaches. Change must take place at all governance levels and in the interactions among them. As we strengthen the resilience of established systems, we need to concurrently question the assumptions, worldviews, and values that hold our institutions back from evolving and responding flexibly to shifting realities. The push for resilience in the face of mounting impacts of climate change may point to the need for still greater changes that reflect new values, approaches, and priorities. Building resilience demands that we pursue these changes, even if they seem daunting.

As Alperovitz, of the University of Maryland, noted. "We face power problems… that are systemic in nature. If we don't find a way to actually talk about this, speak about it, come up with real solutions, pathways… we will lose the game." He acknowledged that most people are not interested in dedicating their lives to pushing for big institutional changes to increase resilience. However, he argued, everyone can help support and make room for substantive and positive

change. He asked, "In your own work, but also in your role as a citizen, are you open to the next really big possibility? Can you help it along even as you do your job?"

[2] The program, full list of speakers, and recording of all sessions are available at www.resiliencesummit.org. Quotes used from the summit were lightly edited for clarity. As we were unable to incorporate the full richness of the discussion, we encourage readers to watch the videos on the website.

[3] Polycentric governance is a technical term for a system in which overlapping jurisdictions and centers of authority jointly determine who is authorized to do what, and subject to what limits.

[4] Rockman, of the National Park Service, explained four kinds of climate stories that help people relate to climate change in a particular place: (1) Stories that help people see "change over a historical time frame in the material culture…" This is because "actually seeing something happen with bricks and statues and things that are at a very human scale speaks to us." (2) Stories of what happened in the place and how "people who have lived there in the past dealt with past environmental change." (3) Stories of the "many, many people and many different priorities all coming together" in the place that led to climate change. (4) Stories of what it was like to live in the place before now and what people living there knew.