



# Executive Summary

Rising to the Challenge, Together

**A Review and Critical Assessment  
of the State of the US Climate  
Adaptation Field**

A REPORT PREPARED FOR THE KRESGE FOUNDATION

December 2017

## The Challenge

Midway through the second decade of the 21st century, American society—and the world—face stark environmental, economic, security, health, and political challenges. Climate change is widely acknowledged as a crucial—maybe even existential—threat to humans, other species, and the natural systems on which all life depends. And the climate crisis is accompanied by other urgent imperatives: the need to preserve a habitable planet while ensuring equal opportunity for all. Yet today, there is a vast gap between the scope of these challenges and our nation’s efforts to address them.

The challenges of climate adaptation and resilience building are now an everyday reality for decision makers across the country. As climate impacts accelerate and population grows in vulnerable areas, disasters are more frequent and devastating. Supercharged storms (like Hurricanes Sandy, Harvey, Irma, and Maria), catastrophic wildfires, and deadly heatwaves affect growing numbers of Americans—in rural areas, small towns, and large cities. Over the past five years, Americans experienced at least 10 major disasters per year, each generating more than \$1 billion in damages—double the average number of such events

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from 1980–2016.<sup>1</sup> In the US and around the world, it is the least fortunate who bear the greatest social, economic, health, and environmental costs from such disasters.

And worse is yet to come. Today’s disasters and disruptions reflect relatively modest climatic changes. The warming and impacts experienced so far have mostly stayed below the thresholds of tolerance for human and natural systems. But current emissions trends point to warming of at least 9°F (5°C) above pre-industrial levels by 2100,<sup>2</sup> a scenario that “must be avoided,”<sup>3</sup> according to the World Bank. The impacts of such warming would dwarf anything Americans, and the world, have yet experienced.

From the challenges associated with emerging impacts, and from those still to come, the message is clear: now is the time to fast-track climate mitigation efforts to preserve a livable future. And, given the scale of change already set in motion, it is time to accelerate and scale up adaptation while blazing transformative paths to an equitable, resilient future. These trends and necessities frame and shape our study, analysis, and recommendations.

## The Response

Americans are, in fact, beginning to adapt to climate change. This report—which draws on extensive interviews, surveys, and a literature review—takes measure of the nascent field of climate adaptation in the US. We found that the adaptation field is emerging, but it is not yet equal to the task before it; nor is the field evolving quickly or deliberately enough to manage worsening climate threats.

Spurred by headline-grabbing disasters and more insidious climate impacts, communities across the US are experimenting with adaptation. They are aided by an ever-growing base of knowledge and a plethora of tools. New actors are getting involved—including utility managers and the private sector—and an infusion of funds from government and philanthropy is proving essential for the field’s growth. Cities are emerging as leaders in adaptation, and they are forging vital networks for learning and collaboration.

Still, the field remains limited in scope and effectiveness. Driven largely by crises, the adaptation field does not have a unifying vision of a better future; it remains mostly reactive, rather than proactive. A sense of urgency is lacking, and too many adaptation efforts are stalled at the planning stage. The prevailing emphasis on urban adaptation leaves small towns and rural areas behind, and neglects important interdependencies between cities and surrounding areas. And while there is growing awareness of the disproportionate impact of climate change on the most vulnerable—and the need for equitable solutions—few adaptation actors understand how to incorporate equity into their work.

At this pivotal moment for the field’s development, leadership is key. The federal government played an important role during President Obama’s second term, jump-starting adaptation efforts with funding, research, and agency directives. But the Trump Administration and Congress are working to extinguish those efforts—

creating a leadership vacuum that cities, states, and others are scrambling to fill.

Across our nation—in urban high-rises and on rural back roads; in corporate boardrooms and regional planning commissions; in statehouses and the halls of Congress—there is a gap between the size of the climate challenge and efforts to address it. The Union of Concerned Scientists has termed this the “resilience gap.”<sup>4</sup> We believe that gap can only be closed through significantly scaled-up climate mitigation and adaptation efforts, enacted with a concerted effort to build social cohesion and equity.

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The stakes are high. Without a much-strengthened adaptation field, the resilience gap will widen. Accelerating climate risks will disrupt attempts to expand economic opportunity and shore up critical infrastructure; they will destabilize our communities, harm human health, and undercut efforts to maintain crucial life-support systems such as clean water, clean air, and healthy ecosystems. Conversely, a strong adaptation field can head off the worst projected impacts of climate change, while ensuring that risks are not disproportionate and that benefits are equitably shared. Building this field—and quickly—must be an urgent priority.

## The Report

What would a strong, mature adaptation field look like, and what would it take to build it? To help answer that question, The Kresge Foundation—one of the leading philanthropies supporting climate adaptation in the US—commissioned an assessment of the state of the field in 2016. The assessment, shaped at critical points by a six-member Advisory Group, included:

- An extensive review of academic and non-academic literature to contextualize current US adaptation efforts;
- Interviews with 87 individuals representing the public, private, and NGO/civic sectors and academia, covering a wide range of adaptation-related expertise and perspectives;
- An online survey targeted at the same project participants;
- A detailed analysis of Kresge grantee portfolios; and
- Feedback from 88 invited individuals (study participants and others) during a half-day workshop at the National Adaptation Forum 2017 in St. Paul, Minnesota.

This report, which is informed by that assessment, captures the current state of the US adaptation field, identifies needs and opportunities, and makes specific recommendations to move adaptation and resilience building forward.

**Audiences.** This report speaks to those who are helping to build the adaptation field, and to those who work to prepare for and respond to growing climate risks in a complex and fast-moving world. Thus, our primary audiences are:

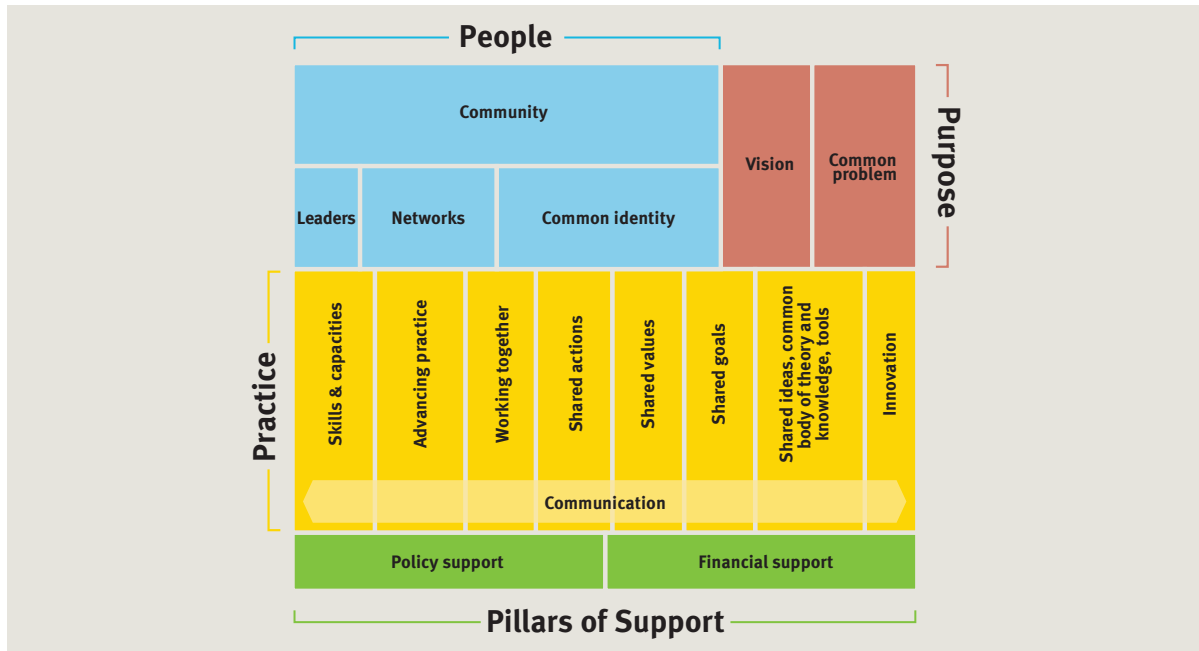
- Field builders and supporters working to advance adaptation;
- Field actors and implementers seeking to make American communities safer and more resilient; and
- Other partners, currently outside the field, who are needed to close the resilience gap.

**Framework.** To communicate our findings, we have developed a simplified model of a professional field. We call this framework “the 4Ps,” as the many elements of a field cluster around four interlinked foundational components: Purpose, People, Practice and Pillars.

- The **Purpose** is the goal a field is focused on or organized around. The field’s purpose is centered on the clear delineation of a common problem, and linked to a vision of a world in which that problem is fully addressed.
- The **People** are the field actors—the individuals, organizations, and networks who lead the field and carry out its work, and the common identity that unites them.
- The **Practice** consists of actions taken and the knowledge, tools, and skills used to fulfill the field’s purpose.
- The **Pillars** are the funding and policy that support the development of a field and enable realization of the field’s purpose.

## The Vision—And How We Can Achieve It

Here, we lay out a vision for each of the 4Ps in a mature adaptation field, and compare that vision to the field as it stands today. We assess the field's critical needs and offer recommendations—for the field as a whole and for specific actors.



The 4Ps of a Field: A field is made up of four basic components—purpose, people, practice, and pillars.

### PURPOSE

#### Vision

A well-developed adaptation field creates the nationwide capacity to effectively and equitably close the resilience gap for all. It understands its mission as preventing, minimizing, and alleviating climate change threats to human well-being and to the natural and built systems on which humans depend. It also works to create new opportunities by addressing the causes and consequences of climate change in ways that solve related social, environmental, and economic problems.

**The US adaptation field has not yet found its common purpose.**

#### Current status

The US adaptation field has not yet found its common purpose. It is not evenly galvanized around a common purpose, nor oriented around a shared vision. For some, the goal is to alleviate emerging climate change consequences, while for others, resilience building must address root causes of insecurity. The common problem

of climate change, of course, is shared and increasingly recognized as a major challenge (from local to global levels). The emergence of climate change impacts is rapidly raising awareness of the need for adaptation, even if this recognition is not yet universal. However, due in part to the relatively limited and widely varying impacts to date, climate change is not seen as a priority everywhere. And Americans still differ significantly—in a highly polarized and politicized environment—in their acceptance of the human causation of climate change. The result is a lack of urgency around addressing climate change through mitigation and adaptation.

#### Key needs

- A greater sense of urgency to vastly step up action on both mitigation and adaptation.
- A unifying values framework to guide adaptation.
- Clear regional, sectoral, national, and cross-cutting priorities to drive focus.



### **Recommendations**

To foster a common purpose, adaptation field actors must:

- Communicate the urgency of climate change more forcefully, widely, and effectively in ways that are tailored to different audiences and foster confidence that people can implement effective solutions;
- Insist on the need to address climate challenges through both mitigation and adaptation, in ways that enhance equity and social cohesion;
- Convene stakeholders, at all levels, in order to craft a common understanding of the problem and a vision of a desirable future;
- Identify problems that intersect with climate challenges, and use climate-adaptive solutions that help close the resilience gap.

## **PEOPLE**

### **Vision**

The mature adaptation field is a powerful, widely recognized, confident, respected, and deeply integrated area of work accomplished by people who share a common identity. Individuals, communities, organizations, busi-

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nesses, and government agencies have taken full ownership of the complementary strategies of climate mitigation and adaptation, implemented in ways that build social cohesion and equity.

With ready access to a wide range of relevant expertise, interconnected field actors share goals and collaborate. Individuals and institutions within the field have adopted a culture and practice of adaptive thinking and acting in a world of constant and potentially disruptive change. Extensive networks actively and deliberately share knowledge and resources. Social capital, inclusivity, and a collaborative spirit supports actors' informal and formal work together.

### **Current status**

A growing number of actors are now involved in adaptation and resilience building, and some are already well

connected, beginning to form a sense of community and shared identity. Early on, dominant actors included academics, government staff, and environmental NGOs; more recently, they have been joined by city and other local officials and grassroots advocates who now play an important role in moving adaptation forward. Utilities and private-sector actors are also entering the adaptation field in growing numbers. There are important overlaps between the field and the climate justice movement, with movement leaders shaping alternative visions of a climate- and community-resilient future. Still, while the overall number of people involved with resilience building is growing, smaller cities and rural areas are at risk of being left behind, and the field does not yet have a widely recognized core of leaders to help articulate a shared vision and common values around which others might mobilize.

### **Key needs**

- Greater engagement by previously uninvolved actors, such as the private sector, youth, and those who do not see themselves as adaptation practitioners.
- Leaders at all levels who can champion adaptation in their sectors.
- Effective utilization of existing networks.

### **Recommendations**

To broaden the circle of people engaged in resilience building, adaptation field actors must:

- Engage the private sector, youth, and underrepresented actors, including those in small towns and rural areas;
- Bring people together around common problems to define a shared vision and adaptation action agenda, including agreed-upon measures of progress and success;
- Reach out to research institutions, agencies, and professional societies to identify entry points into climate change and adaptation.

## **PRACTICE**

### **Vision**

The mature adaptation field has available exemplary models and best practices of how to adapt effectively and equitably. These practices are widely known and backed up with robust evidence. Rigorous profes-

sional standards as well as certification and training in core concepts, technical issues, and ethical challenges are established and applied. Ongoing tracking of progress and feedback mechanisms support rapid learning, cross-fertilization, and the maturation of the field's practice, driving toward transformation. The field uses 21st-century communication tools to broadcast the urgency of climate action. Co-creative science–practice partnerships are the norm, allowing for ongoing exchange between knowledge generation and application. The field also facilitates networking and collaboration at scale. Field actors everywhere are skilled in approaching adaptation challenges through integrative, holistic, and out-of-the-box thinking, while embracing uncertainty. They help communities envision desirable futures and empower them through awareness raising and coalition building.

### **Current status**

Important progress has been made in adaptation practice over the past several years. The knowledge base for adaptation is improving, and peer-learning networks have emerged as effective ways of spreading practices and insights. Human-capacity building has helped advance climate and adaptation literacy. Most practitioners recognize the need to assess impacts and vul-

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nerabilities and seek to mainstream adaptive approaches into existing processes and structures. Many also recognize the need to collaborate across silos and disciplinary boundaries, and to move from planning to implementation.

Still, the field requires much more professionalization and deepening to be effective. Best practice is not yet established and there are considerable barriers to action, including competition for scarce funds. There is little understanding of and capacity on social equity and the need for transformational change. Some call for more systemic changes. Yet, without a unifying vision, much-enhanced capacity, and sustained investment in communication, the field does not effectively share its work and successes internally or with external audiences.

### **Key needs**

- More and better tools to persuade decision makers, funders, and the public of the need to adapt.
- Greater sophistication and professionalization of practice.
- Greater capacity on social equity and transformative change.

### **Recommendations**

To rapidly advance the breadth and quality of practice, adaptation field actors must:

- Develop analyses and communication tools that:
  - Make the economic case for adaptation;
  - Assess and disclose climate risk;
  - Measure progress toward resilience; and
  - Tell positive stories of success—especially in vulnerable communities.
- Build capacity for adaptation and transformative change by:
  - Professionalizing practice through certification and training;
  - Breaking down silos and other divisions to address resilience challenges holistically;
  - Developing leadership, understanding, and metrics on equity; and
  - Embracing the need for and investing in transformative change.

## **PILLARS**

### **Vision**

Philanthropic and government funders and private investors are fully committed to funding field building and resilience building until the resilience gap is closed. Funding is not only available after disasters, but is sustained and coordinated for proactive, preventive measures. Funders help to grow resources commensurate with the threat, build funding coalitions, and support the development of new financial instruments and systems to support transformative interventions. The economic case for adaptation is well established. Policymakers at all levels fully embrace the need for mitigation and adaptation, enacting strong resilience legislation, removing legal and institutional barriers, and requiring the implementation of stringent mitigation and adaptation practice with attention to social cohesion and equity. Policies that support the adoption of best practices and climate-adaptive standards for buildings, infrastructure, and other systems are applied, evaluated, and regularly updated.

### **Current status**

Funding and policy to support the field are inadequate, inconsistent, uncoordinated, and not solidly anchored

or institutionalized. Where funding is available, it is predominantly project- or crisis-driven and—with the retreat of the federal government—increasingly scarce. Thus funding, which was already one of the most critical barriers to adaptation, is now utterly inadequate to meet growing needs for proactive adaptation and disaster response as climate change impacts accelerate. Adap-

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tation policy at the federal level—after several years of leadership and executive-branch progress—is currently being dismantled or undermined. This places greater pressure on state and local leadership, which is growing, albeit unevenly, across the US. The conversation about standard setting and other high-impact leverage points is only beginning, while the demand for shifts in policy goals and direction at all levels of government is rapidly growing.

#### **Key needs**

- Creative, sustained, and coordinated financing and funding mechanisms.
- Effective adaptation-related policy at every level of government.

- More strategic interventions to help diverse sets of adaptation professionals meet critical needs and achieve higher impact.

#### **Recommendations**

To strengthen the supportive pillars of funding and policy, adaptation field actors must:

- Create new funding mechanisms, such as regional funding collaboratives;
- Encourage greater coordination and collaboration among existing funders in the field;
- Develop and implement interventions that can scale up adaptation efforts, including:
  - Policy levers;
  - Regional support and leveraging of local efforts;
  - Collaboration with professional societies; and
  - Establishment of stringent standards affecting all climate-sensitive structures and activities.

## **What You Can do to Advance Adaptation in the US**

All readers of this report have a role to play in adapting to climate change—whether or not you identify as an adaptation professional. Below is a sample of priority actions for various actors within and outside the field; more detail on how to find your role and make a contribution can be found in Chapter 5.

- The most important thing **thought leaders** can do to advance the field is to press the urgency of climate change. They must insist on the need to address climate challenges through both mitigation and adaptation in ways that enhance equity and social cohesion. Thought leaders can push the field to think bigger, bolder, and deeper about challenges and solutions.
- The most important thing **field builders and supporters** can do is to expand and stabilize the funding support for the field and to use every leverage point, including policy, to move adaptation forward rapidly, effectively, and equitably. The task is one of acceleration, scaling up, and ensuring deeper practice.
- The most important thing **field actors and implementers** can do is to make resilience building real on the ground—to implement mitigation and adaptation in equitable and just ways so that American communities are safer for all. This includes deepening practice on equity and transformative solutions, learning from peers and those outside the field, sharing lessons learned, and breaking down silos and other divisions to address resilience challenges holistically.
- The most important thing **supporters and actors currently outside the field** can do is to assess their sector's sensitivities to climate change and disruptions, educate themselves about adaptation, and forge alliances with relevant actors in the adaptation field.

## Conclusion: We Can and Must Rise to the Challenge—Together

As climate disruptions increase, decision makers will face a host of unprecedented problems. These will likely include massive migrations of people within and outside the US, as well as threats to vital systems like food, water, and energy.<sup>5</sup> To rise to the challenge, the adaptation field must rapidly grow in size, scope, and sophistication.

That process has begun. The nascent field of climate adaptation represents an important achievement. The changes made to date mark the beginning of a profound cultural shift for modern society, as we move out of the

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we have experienced; it will pose daunting social, political, economic, technological, and ecological challenges. The people and institutions that comprise the adaptation field have begun to recognize those challenges and shape a response. But the challenge becomes clearer with every disaster.

relatively stable climate in which our species has thrived.<sup>6</sup> The new era we are entering will be vastly more uncertain, faster-paced, and more complex than anything

There is much that needs to be done, and we each have a unique role to play. Wherever we sit, we must become relentless questioners of the status quo. We must ask the climate question: Are the enduring structures we build able to withstand—and mitigate—climate change? And we must ask the equity question: Are climate risks and opportunities shared equitably? We must learn and measure progress together, as the pace and complexity of the problem—unfolding in unique ways across a vast nation—is too large to address, track, or assess alone. Together, we can rise to the challenge.

The vibrancy of the field we witnessed in the course of this study gives us much hope. The adaptation field's collective energy to address climate change stems from love of place and people, passion for our work, determination, and commitment to make a difference. It is fed by a desire to serve, and the lure of opportunities to be creative and solve difficult problems. It is sustained by the friendships that unite us, and sometimes even by the anger and frustration with the status quo that could just as easily divide us. The efforts needed to navigate the transformational changes ahead require nothing less. We urge you to join us.



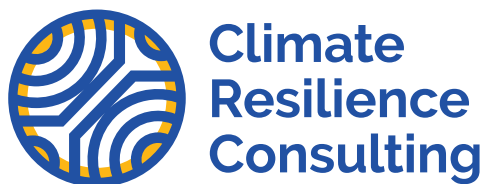


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