The Silence Before the Storm: Advocacy Groups' Current Perceptions of Future Climate Vulnerability

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Abstract Numerous organizations and institutions have traditionally represented, advocated for, or served those U.S. populations that are identified as vulnerable to environmental hazards and emergencies. However, we know little about how these organizations currently perceive or are acting on these threats to their constituent communities—in particular, the threats from hazards associated with climate change's effects. This chapter documents the organizations' current climate adaptation strategies and activities on behalf of these populations if any, and describes key themes regarding the contexts and challenges, surrounding the current state as well as the opportunities for possible future action.

Structured interviews were held with representatives from a wide pool of organizational types, from local environmental justice groups to national civil rights and environmental advocacy institutions. Responses corroborated the study's primary finding from policy and document reviews: the groups' current advocacy or programming related to climate change is generally nascent and, on the whole, does not extend beyond the identification of general vulnerabilities.

The silence, however, is not intentional. External and contextual barriers continue to hinder many organizations: the current national policy direction is focused almost exclusively on climate mitigation strategies over adaptation planning and action, and on equity in disaster recovery rather than in disaster mitigation and preparedness. Internal institutional barriers persist as well, such as resource constraints, gaps in technical capacity, and the lack of a demographically diverse staff that is attuned to the concerns within the vulnerable communities in question. Local groups also struggle with the task of messaging climate change in communities that face a broad array of intersecting social, economic, and environmental challenges.

To overcome these barriers, the author suggests policy and funding instruments that expand the technical and resource capacity of local organizations like environmental justice groups to better serve their vulnerable constituents' adaptation needs. However, the investment must produce actionable programming tied to the goals of

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current environmental and emergency management policy and to achievable community outcomes beyond solely identifying vulnerabilities.

Keywords Non-governmental organizations · Climate change adaptation · Institutions

Introduction

Natural hazards and environmental challenges know no geographic boundaries. Yet, the preparations for, responses to, and impacts of the disasters they inflict do, in fact, vary by social and economic community. A wide body of literature demonstrates how disasters are a product of preexisting vulnerabilities and stressors as much as the environmental or natural hazard in question.[1] Disenfranchised communities typically have less access to information on emergency preparations as well as on the nature of overall environmental challenges they face.[2] Vulnerable populations like the poor, disempowered racial groups, the elderly, and physically challenged are less likely to be prepared for disasters, suffer more losses from them, and have a more difficult path to recovery.[3]

The relationship between vulnerable communities and the effects of climate change—a unique set of environmental hazards—are also beginning to emerge.[4] Vulnerabilities cut across numerous domains, from financial outcomes due to property loss to health conditions from increased extreme weather.[5] Many studies point to the nature of vulnerabilities and vulnerable communities, yet not to the

[1] K. Tierney (2014). *The Social Roots of Risk: Producing Disasters, Promoting Resilience*. Stanford, CA: Stanford University Press; D. Thomas et al. (eds.) (2013). *Social Vulnerability to Disasters, Second Edition*: Boca Raton FL: CRC Press; B. Bolin (2006). "Race, Class, Ethnicity, and Disaster Vulnerability" in H. Rodriguez, E. L. Quarantelli, and R. Dynes (eds.). *Handbook of Disaster Research*, New York: Springer; Cutter, S, Boroff, B, Shirley, W. (2003). "Social vulnerability to environmental hazards." *Social Science Quarterly* 84:242–261.

[2] Mileti, D. and L. A. Peek (2002), "Understanding individual and social characteristics in the promotion of household disaster preparedness" in *New Tools for Environmental Protection: Education, Information, and Voluntary Measures*. Washington, DC: National Academies Press; Zhang, Y. (2010) "Residential Housing Choice in a Multihazard Environment: Implications for Natural Hazards Mitigation and Community Environmental Justice." Jour*nal of Planning Education and Research*, 30(2): 1–15.

[3] A. Fothergill, E.G. Maestas, and J.D. Darlington (1999), "Race, ethnicity, and disasters in the United States: A review of the literature" *Disasters* 23:156–73; A. Fothergill and L. A. Peek (2004), "Poverty and Disasters in the United States: A Review of Recent Sociological Findings" *Natural Hazards* 32: 89–110.

[4] Urban Resilience Project. (2015). "Bounce Forward: Urban Resilience in the Era of Climate Change." Strategy Paper from Island Press and the Kresge Foundation.

[5] M. Keim (2008). "Building Human Resilience: the Role of Public Health Preparedness and Response as an Adaptation to Climate Change." *American Journal of Preventive Medicine*, 35(5); C. Huang et al. (2011). "Constraints and barriers to public health adaptation to climate change: a review of the literature." *American Journal of Preventive Medicine*. 40(2).

effectiveness or even descriptions and agents of interventions designed to reduce those vulnerabilities.

Philanthropies, state and local governments, and federal agencies have very recently begun to consider the consequence of already-observable climate effects on these communities in the U.S. In the post-Katrina decade, these institutions merge the subjects of disaster mitigation, climate change adaptation, and local infrastructure and regional planning under the rubric of "resilience" as a physical *and* social condition. Yet, the public and civil-sector organizations whose traditional mission is to orchestrate and amplify these voices have existed for over a half-century. This chapter poses the question: How are the groups that traditionally advocate for vulnerable communities responding to climate change's effects?

Background

Scholarship around disaster management and climate change adaptation provides useful insight. Disaster management and sociology literature demonstrates compelling evidence of the existence of vulnerabilities among certain populations that are exacerbated in disaster.[6] What is generally accepted and understood is that disadvantaged racial/ethnic groups, age and populations with functional and access needs, and low-income households as well as other parties are more vulnerable than others to environmental hazards. This literature also focuses on the capacity of these communities *during* disasters with regard to disparate emergency response and relief activities.[7] A growing body of work also looks at vulnerability in the context of recovery and rebuilding *after* the disaster, including unequal impacts on property and medical and psychological effects, and disbursal of recovery assistance.[8]

[6] A. Fothergill, E.G. Maestas, and J.D. Darlington (1999), "Race, ethnicity, and disasters in the United States: A review of the literature" *Disasters* 23:156–73; A. Fothergill and L. A. Peek (2004), "Poverty and Disasters in the United States: A Review of Recent Sociological Findings" *Natural Hazards* 32: 89–110.

[7] W. G. Peacock et al. (eds.) (1997). *Hurricane Andrew: Ethnicity, Gender, and the Sociology of Disaster*. Routledge; R. Bolin and L. Stanford (1998). "Shelter, housing, and recovery: A comparison of U.S. disasters." *Disasters: The Journal of Disaster Studies and Management* 15: 24–34; L. Aptekar. (1991). "The psychosocial process of adjusting to natural disasters." Working Paper Number 70, University of Colorado Institute of Behavioral Science and Natural Hazards Research Center: Boulder, CO; A. Fothergill. (2004). *Heads Above Water: Gender, Class, and Family in the Grand Forks Flood*. State University of New York Press: Albany.

[8] R. Bolin (1993), "Household and Community Recovery after Earthquakes." Program on Environment and Behavior Monograph No. 36; University of Colorado Institute of Behavioral Science and Natural Hazards Research Center: Boulder, CO; E. Rovai, (1994). "The Social Geography of Disaster Recovery: Differential Community Response to the North Coast Earthquakes." Association of Pacific Coast Geographers Yearbook: 56; N. Dash, W. G. Peacock, and B. H. Morrow (1997). "And the poor get poorer: A neglected Black community" in W. G. Peacock op cit.; M. Comerio (1998). *Disaster Hits Home: New Policy for Urban Housing Recovery*. University of California Press: Berkeley.

Disparate recovery assistance has been a focus of litigation in every major U.S. disaster recovery over the past three decades.[9]

Disaster Mitigation and Climate Change Adaptation

Despite the increased attention to post-disaster outcomes, there are fewer studies regarding disparate access and unequal engagement in the planning, mitigation, preparedness, and resilience capacity-building efforts conducted *before* a disaster.[10] Early findings suggest that income is associated with risk perception.[11] Property buyers and owners in vulnerable communities are given less information about their risks and ways to mitigate them than other groups.[12] As a consequence, they are less prepared with emergency supplies and plans when disaster strikes.[13]

There is an overlap between climate change adaptation and disaster mitigation activities.[14] Social disparities associated with disasters are repeated in climate change-related events like extreme storms, drought, and rising sea levels as they are for other hazard agents. The climate change adaptation literature provides some nuance to the framing of vulnerability by including future, chronic, and repeat-exposure environmental hazards.[15] Disparities across populations have been noted globally and nationally by the seminal consensus groups on the subject, the United Nation's Intergovernmental Panel on Climate Change (IPCC) and the US National

[9] In Hurricane Katrina's recovery, for example, see: K. Fox Gotham (2014), "Reinforcing Inequalities: The Impact of the CDBG Programon Post-Katrina Rebuilding." *Housing Policy Debate* 24(1).

[10] In contrast to preparedness or response, disaster mitigation refers to actions that reduce exposure to a hazard agent such as physical protections, or reduce the economic or social losses of a disaster such as property insurance.

[11] J. Flynn, P. Slovic, and C. K. Mertz (1994). "Gender, race and perception of environmental health risks." *Risk Analysis* 14(6); R. Palm and J. Carroll (1998). *Illusions of Safety: Culture and Earthquake Hazard Response in California and Japan*. Westview Press: Boulder, CO.

[12] Zhang, Y. (2010) "Residential Housing Choice in a Multihazard Environment: Implications for Natural Hazards Mitigation and Community Environmental Justice." *Journal of Planning Education and Research*, 30(2): 1–15.

[13] R. H. Turner et al. (1986). *Waiting for Disaster: Earthquake Watch in California*. University of California Press: Berkeley, CA; Mileti, D. and L. A. Peek (2002), "Understanding individual and social characteristics in the promotion of household disaster preparedness" in *New Tools for Environmental Protection: Education, Information, and Voluntary Measures.* Washington, DC: National Academies Press.

[14] The IPCC defines adaptation as adjustments in response to actual or expected climatic stimuli or their effects to moderate harm, and disaster mitigation as the lessening of the potential adverse impacts of physical hazards to reduce hazard, exposure, and vulnerability. See also, T. Cannon. (1994). "Vulnerability analysis and the explanation of 'natural' disasters." In: A. Varley (ed.). *Disasters, Development and Environment*. John Wiley and Sons: Chichester, UK; S.B. Manyena. (2006). "The concept of resilience revisited." Disasters. 30(4): 434–450.

[15] J. Paavola and W. Neil Adger. (2006). "Fair Adaptation to Climate Change." *Ecological Economics*. 56(4): 594–609.

Climate Assessment (NCA), respectively.[16] In these reports, vulnerability is defined as an inability to cope with negative external change such as that caused by a natural or environmental hazard; more succinctly it is the "potential for loss."[17] As noted in the disaster management literature, this potential can vary across the different stages of the hazard.[18]

Vulnerable Communities

So, *who* is vulnerable? Hazard exposure due to geographic location defines much of this population, but so do social and economic position. Cutter et al. (2003) provide a helpful summary of the range of vulnerabilities by population characteristics. Similarly, the IPCC notes specific populations as being vulnerable within higher income nations like the U.S., starting with low-income households.[19] This group typically lives in poorer quality housing and in communities with infrastructure incapable of meeting future demands.[20] They also have less access to property insurance, quality healthcare, and other prevention and treatment facilities.[21] Beyond

[16] A. Revi et al. (2014). "Urban areas." in C. B. Field et al. (eds). *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the 5th Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press: Cambridge; S. L Cutter et al. (2014). "Ch. 11: Urban Systems, Infrastructure, and Vulnerability." In J. M. Melillo, Richmond, and Yohe (eds*). Climate Change Impacts in the United States: The 3rd National Climate Assessment*. US Global Change Research Program.

[17] H. M.Füssel. (2007). "Vulnerability: A generally applicable conceptual framework for climate change research." *Global Environmental Change*. 17: 155–167; W. N. Adger. (2006). "Vulnerability." *Global Environmental Change*. 16: 268–281; S. L. Cutter, B. J. Boruff, and W. L. Shirley. (2003). "Social vulnerability to environmental hazards." *Social Science Quarterly*. 84: 242–261.

[18] J. Hardoy and G. Pandiella. (2009). "Urban poverty and vulnerability to climate change in Latin America." *Environment and Urbanization*. 21(1): 203–224.

[19] IFRC (2010). *World Disasters Report 2010: Focus on Urban Risk*. International Federation of Red Cross and Red Crescent Societies (IFRC), Geneva, Switzerland; C. Moser and D. Satterthwaite (2009). "Towards pro-poor adaptation to climate change in the urban centres of low- and middle-income countries." In R. Mearns and A. Norton (eds.) *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*. World Bank, DC. See also B. H. Morrow (1999). "Identifying and mapping community vulnerability." *Disasters* 23(1).

[20] J. Posey (2009). "The determinants of vulnerability and adaptive capacity at the municipal level: evidence from floodplain management programs in the United States." *Global Environmental Change*, 19(4); UN-HABITAT. (2011). *Cities and Climate Change: Global Report on Human Settlements 2011*. Earthscan: London.

[21] H. Frumkin and A.J. McMichael (2008). "Climate change and public health: thinking, communicating, acting." *American Journal of Preventive Medicine*, 35(5); J.M. Balbus and C. Malina (2009). "Identifying vulnerable subpopulations for climate change health effects in the United States." *Journal of Occupational and Environmental Medicine*, 51(1). G.B. Anderson and M.L. Bell (2011). "Heat waves in the United States: mortality risk during heat waves and effect modification by heat wave characteristics in 43 U.S. communities." *Environmental Health Perspectives*, 119(2).

income, race and ethnicity are significant contributors to vulnerability measures in the U.S. in multiple ways.[22] Those with existing physical or mobility challenges who may face climate change-induced health challenges disproportionately are also vulnerable.[23] This group includes elderly members of exposed communities, who are more at risk from the effects of heat waves.[24] Homeownership status and housing quality are other factors likely correlated with income that are believed to contribute to climate vulnerability.[25] In the aftermath of Hurricane Katrina, many of New Orleans's poorest and mostly minority residents were disproportionately affected by flooding due to their location in low lying areas.[26]

Policy and Advocacy Groups

The growth in literature on climate vulnerability has occurred over the last decade, an era in which the awareness of climate change's effects and hazards' disparate impacts has increased.[27] At its core, the adaptation needs of climate-vulnerable populations exacerbate general environmental hazards or disasters. Organizations and institutions that advocate or serve these communities with the hope of reducing their environmental, social, and economic disparities already exist. But, what do we know about how these entities are planning for climate change?

A body of literature has begun to track how organization and institutions emerge or evolve after a disaster.[28] The nearly universally-accepted existence of climate vulnerabilities would suggest that action on climate adaptation should be afoot. Yet,

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[22] C. R Browning et al. (2006). "Neighborhood social processes, physical conditions, and disaster-related mortality: the case of the 1995 Chicago heat wave." *American Sociological Review*, 71; R. Morello-Frosch, M. Pastor, J. Sadd, and S. Shonkoff (2009). "The Climate Gap: Inequalities in How Climate Change Hurts Americans & How to Close the Gap." Program for Environmental and Regional Equity (PERE), University of Southern California: Los Angeles, CA; K. Lynn, K. MacKendrick, and E.M. Donoghue (2011). "Social Vulnerability and Climate Change: Synthesis of Literature." General Technical Report PNW-GTR-838, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: Washington, DC.

[23] K.R. Smith et al. (2014). "Human health: impacts, adaptation, and co-benefits." In C. B. Field et al., op cit.

[24] J.L. Gamble et al. (2013). "Climate change and older Americans: state of the science." *Environmental Health Perspectives* 121(1).

[25] Y. Kim, H. Campbell, and A. Eckerd (2014). "Residential Choice Constraints and Environmental Justice." *Social Science Quarterly,* 95(1).

[26] M. Turner and S. Zedlewski (eds). (2006). "After Katrina: Rebuilding Opportunity and Equity into the *New* New Orleans" Urban Institute: Washington DC.

[27] NRC (2006). *Facing Hazards and Disasters: Understanding Human Dimensions*. National Research Council, Committee on Disaster Research in the Social Sciences: Future Challenges and Opportunities, Division on Earth and Life Studies. National Academy Press: Washington DC.

[28] Wachtendorf, Tricia 2013. Emergent Organizations and Networks in Catastrophic Environments, in Preparedness and Response for Catastrophic Disasters. Ed Rick Bissell, CPC Press: Boca Raton, FL.

Fig. 1 Policy areas relevant to climate-vulnerable communities and organizations

a formal plan of action among the organizations and institutions that represent or respond to these populations is difficult to find. A handful of philanthropic foundations and public institutions in the U.S. have been funding non-governmental organizations to explore climate-related subjects in general for almost a decade, and place-based adaptation activities for approximately 5 years.[29] A wide range of adaptation and disaster mitigation strategies has been proposed, including physical infrastructure improvements, social or behavioral interventions and awareness campaigns, and institutional incentives from property insurance to building regulations.[30] Yet, implementation is limited[31]: in a 2011 survey of U.S. cities, 58% of respondent cities noted moving forward with climate adaptation activities, though 48% of these noted that activities are limited primarily to preliminary planning.[32]

To simply identify organizations and institutions that work on climate vulnerability and adaptation, we mined scholarly sources, public documents, and press coverage that describe any statement, behavior, policy, advocacy, or programs by groups working in communities burdened with environmental or physical hazards in general. Ultimately, we identified groups in seven areas (depicted in Fig. 1): envi-

[29] As noted in reports produced by the Funders' Network for Smart Growth and Livable Communities and corroborated in background interviews with foundation representatives conducted as part of this study.

[30] I D. Dodman and D. Satterthwaite (2008) "Institutional capacity, climate change adaptation and the urban poor." IDS Bulletin, 39; M. K. Van Aalst, T. Cannon, and I. Burton (2008). "Community level adaptation to climate change: The potential role of participatory community risk assessment. *Global Environmental Change* 18; J. Carmin, D. Dodman, and E. Chu (2011). "Ch. 8: Engaging stakeholders in urban climate adaptation: Early lessons from early adapters" *UGEC Viewpoints: Addressing Grand Challenges for Global Sustainability* 6J. Foster, S. Winkelman, and A. Lowe, (2011) "Lessons Learned on Local Climate Adaptation from the Urban Leaders Adaptation Initiative," Center for Clean Air Policy: Washington, D.C; and R. Noble et al. (2014) "Adaptation needs and options." in C.B. Field et al. (eds), *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press: Cambridge.

[31] W. Solecki and C. Rosenzweig (eds) (2012). "U.S. Cities and Climate Change: Urban, Infrastructure, and Vulnerability Issues" Technical Input Report Series, U.S. National Climate Assessment; NRC (2010) "Adapting to Impacts of Climate Change. America's Climate Choices: Report of the Panel on Adapting to the Impacts of Climate Change." National Academies Press: Washington DC; T. Wilbanks et al. (2012). "Climate Change and Infrastructure, Urban Systems, and Vulnerabilities," Technical Report to the U.S. Department of Energy in Support of the National Climate Assessment: Oak Ridge National Laboratory.

[32] J. Carmin, N. Nadkarni, and C. Rhie (2012). "Progress and Challenges in Urban Climate Adaptation Planning: Results of a Global Survey" Massachusetts Institute of Technology and ICLEI Local Governments for Sustainability: Cambridge, MA

ronmental policy organizations; environmental justice (EJ) groups; equitable "green" employment and workforce development advocates; disaster and emergency management scholars and practitioners; public health planning and policy advocates; fair housing groups; and community organizing and civil rights advocates.[33] A brief background of each category is provided below.

Environmental Advocacy and Policy

The first and obvious organizations associated with climate change are the environmental advocates, given their focus on environmental outcomes in general and their policy activities related to climate change especially. The institutional environmental movement in the U.S. dates back to the land and wildlife conservation organizations at the turn of the twentieth century.[34] The increased awareness of pollutants and toxic emissions in the 1960s and 1970s spurred the institution of more nationally-focused organizations.[35] This growth in national environmental advocacy coincided with the passage of the Clean Air Act, Clean Water Act, and the establishment of the U.S. Environmental Protection Agency.

The traditional focus of advocacy has been on the physical or environmental outcomes of human activities, and the policy and legal strategies for minimizing them. Over the past two decades, most of these organizations have expanded the environmental topics under their purviews to include climate change—more specifically, the reduction of its underlying greenhouse gas emission sources. In this arena, the national environmental organizations played key roles during the failed cap-and-trade legislation in 2009, as well as the release of the Clean Power Plan (CPP) rulemaking in 2015.[36] The focus of both milestones has been climate mitigation over adaptation.

These groups' relation to vulnerable communities has been less straightforward, however. The larger of these groups—commonly referred to as "Big Green"—have supported the establishment of other advocacy organizations, including sector-specific professional associations and legal aid outfits. Occasionally, EJ organizations and their constituents have benefitted from funding from the larger

[33] An additional subject area of household finances (e.g., residential energy efficiency and renewable energy and their disparate effects on household energy expenses) was also considered. However, the scholarship in this area is too slim and focuses primarily on the disparities related to climate mitigation.

[34] Nash, R. (1989). *American Environmentalism: Readings In Conservation History 3rd Edition.* New York: McGraw-Hill Publishing.

[35] S. Stoll. (2007). *U.S. Environmentalism since 1945: A Brief History with Documents*. Boston: Bedford/St. Martin's; The Green Revolution: K. Sale (1993) *The Green Revolution: The American Environmental Movement, 1962–1992*. New York: Hill & Wang.

[36] E. Pooley (2010). *The Climate War: True Believers, Power Brokers, and the Fight to Save the Earth.* New York: Hyperion.

environmental organizations. Yet, environmental organizations have come under recent scrutiny for the lack of demographic diversity in their leadership and staff, particularly racial diversity.[37] The link between internal diversity within these organizations—or lack thereof—has been described as a contributing factor to the lack of explicit mission and activities focused on historically vulnerable populations.[38] In response, several larger national environmental organizations have recently launched staff diversity campaigns, created EJ divisions, and increased funding to local EJ groups and national civil rights groups directed at environmental awareness in underrepresented communities.[39] Recently, a few groups sponsored polls of Latinos' and African-Americans' perceptions of climate change.[40]

Environmental Justice

The EJ movement and scholarship has been filling much of this gap, with its early focus on toxic pollutant sources and racially-delimited geographic communities.[41] Histories of the movement suggest that the movement was born in the early 1980s in Warren County, North Carolina—a primarily African-American rural community that was the site of a toxic landfill.[42] The EJ movement and its related scholarship produced the first body of knowledge relating environmental disasters to vulnerable populations, particularly racial/ethnic groups' and low-income households' exposure to environmental conditions that negatively impact their health, finances, or community cohesion.[43] Consequently, federal and state agencies have integrated

[37] D. Taylor (2015). "The State of Diversity in Environmental Organizations: Mainstream NGOs, Foundations & Government Agencies." Criticisms of the lack of diversity stem back to a 1990 letter from several environmental justice advocates to the "Big 10" environmental groups regarding racial bias in environmental policy and lack of staff diversity, followed by the First National People of Color Environmental Leadership Summit in 1991.

[38] D. Taylor (2002). "Race, Class, Gender, and American Environmentalism." United States Department of Agriculture, Forest Service Pacific Northwest Research Station: General Technical Report, PNW-GTR-534 (April).

[39] For example the Building Equity & Alignment for Impact Initiative, or BEA-I, was one such coalition.

[40] G. Segura and A. Pantoja (2015). "Polling Memo and Summary for National Release: 2015 Environmental Attitudes Survey." Submitted to Earthjustice and GreenLatinos (July 22): http://earthjustice.org/sites/default/files/files/National%20Release%20Polling%20Memo%20Formatted.pdf; D. Metz, M. Everitt, and B. Hairston (2015). "Findings from a National Survey of African Americans on Energy Issues" Submitted to Green For All and the Natural Resources Defense Council (October 12): http://docs.nrdc.org/energy/files/ene_15110401a.pdf.

[41] R.D. Bullard (ed.). (1993). Confronting Environmental Racism: Voices From the Grassroots. Boston: South End Press.

[42] R.D. Bullard (2000). Dumping in Dixie: Race, Class and Environmental Quality. 3rd ed., Boulder: Westview Press.

[43] B. Berry (1977) *Social Burdens of Environmental Pollution: A Comparative Metropolitan Data Source*. Ballinger: Cambridge, MA; B. Chavis (1987), *Toxic Wastes and Race in the United States:*

disparate impact analyses on "environmentally overburdened, underserved, and economically distressed communities" during rulemaking, permitting, and planning processes.[44]

Most of the EJ community's work has focused on the locational characteristics of toxic source or waste sites. Further, the literature on the EJ movement has generally documented a history of organizing in reaction to a negative environmental condition or a decision (like a toxic pollutant source) that generates a socioeconomic or health effect.[45] More recent scholarship has looked at disparities in access to positive environmental conditions as well.[46] Among this group, increasing attention has been paid in the last decade to greenhouse gas reductions that could improve outcomes for vulnerable groups.[47] A few interventions in climate adaptation have also take root, including post-Sandy assessments of climate adaptation plans by EJ groups in New York.[48] The passage and signing into law of California's SB 535 was also a landmark achievement for the EJ community with regard to climate adaptation; the law requires one quarter of the state's cap-and-trade auction revenues be invested in programs that benefit disadvantaged communities, and 10% of the funds be invested within those geographic areas. These investments could take multiple forms, including reductions of health impacts from climate change.[49]

EJ activists have recently expanded their purview to the realm of disaster recovery, too. Many of the environmental organizations that have roots in 1980s EJ advocacy have also been involved in disaster recovery organizing, particularly

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A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste. Commission for Racial Justice; . S. Cutter, (1995), "Race, class and environmental justice." *Progress in Human Geography* 19; M. Pastor, J. Sadd, and J. Hipp. (2001). "Which came first? Toxic facilities, minority move-in, and environmental justice." *Journal of Urban Affairs*. 23 (1): 1–21; S. Cutter, (2006) "The Geography of Social Vulnerability: Race, Class, and Catastrophe." *Understanding Katrina: Perspectives from the Social Sciences*; S. Cutter (2012). *Hazards Vulnerability and Environmental Justice*, Routledge: London.

[44] EPA (2012). "Draft EJ 2020 Action Agenda Framework." http://www3.epa.gov/environmentaljustice/resources/policy/ej2020/draft-framework.pdf.

[45] P. Mohai and R. Saha. (2006). "Reassessing racial and socioeconomic disparities in environmental justice research. *Demography* 43 (2): 383–99.

[46] J. R. Wolch, J. Byrne, and J. P. Newell (2014). "Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough'." *Landscape and Urban Planning*. Vol. 125 (May); K. A. Gould and T.

Lewis (2017). *Green Gentrification: Urban Sustainability and the Struggle for Environmental Justice*. Abingdon, Oxon: Routledge.

[47] The recent publication of the final U.S. CPP rule pays particular attention to environmental justice analysis and low-income communities as targeted populations for intervention, for example. Benefits for some of the vulnerable populations from these actions are estimated in health, household finances, and employment outcomes, though the impacts of the few articulated policies, programs, strategies, and tools are still generally unknown.

[48] WE ACT for Environmental Justice (2015) "#NMCA Northern Manhattan Climate Action: A Draft Plan" http://www.weact.org/climate.

[49] V. Truong, (2014) "Addressing Poverty and Pollution: California's SB 535 Greenhouse Gas Reduction Fund. Harvard University Civil Rights-Civil Liberties Law Review, 49(2) (March):493–529.

post-Katrina and post-Sandy. EJ advocates are beginning to pay attention to climate change and its consequent natural hazard events in addition to the chronic technological hazards that were their focus.[50] This activity has focused on identifying the vulnerability in question, and concerns with relief and recovery efforts after disasters. Yet, the policies, programs, and behavior-changing interventions that could reduce vulnerabilities in the communities facing disproportionate risks from climate change's effects before disasters are still a work in progress.[51]

Green Economy and Workforce

A related but substantively distinct subset of EJ groups includes those that propose workforce training and employment opportunities from climate change-related policy. The "green jobs" advocacy movement of the 2000s produced several policy actions regarding the opportunity for low-income communities to address climate change via the energy retrofitting of buildings and installation of on-site renewable energy sources.[52] A key focus of this advocacy has been on community benefit agreements wherein local residents are trained or employed on construction projects—typically, publically-funded ones. This collective body of knowledge and policy has focused less on this community's climate adaptation needs and more on their climate mitigation opportunities for providing workforce training and eventual employment in energy-efficiency and renewable energy work.[53] Recent incarnations of green jobs advocacy have also looked at the employment opportunities from major infrastructure projects in general (particularly green storm water services) and physical defenses that might be undertaken for climate adaptation purposes.[54] A counter-narrative regarding the negative financial effects of mitigation activities on

[50] R. Bullard and B. Wright (2012). *The Wrong Complexion for Protection: How the Government Response to Disaster Endangers African American Communities*. New York: NYU Press.

[51] Some criticisms of the EJ community have included concerns about their technical capacity to assess risk, their legal conceptualization of justice, and their policy-making limitations: C. H. Foreman (1998). *The Promise and Peril of Environmental Justice.* Washington, D.C., Brookings Institution Press; A. Ramo (2000), "Book Review: The Promise and Peril of Environmental Justice by Christopher H. Foreman" *Santa Clara Law Review*. V40; D. Schlosberg (2004). "Reconceiving Environmental Justice: Global Movements And Political Theories" *Environmental Politics*, Vol. 13, Issue. 3.

[52] V. Jones, (2008). The Green Collar Economy: How One Solution Can Fix Our Two Biggest Problems. Harper Collins: New York.

[53] Bivens, Irons, and Pollack, (2009), "Green Investments and the Labor Market: How many jobs could be generated and what type?—Issue Brief #253," Washington DC: Economic Policy Institute; M. Muro, J Rothwell, and D. Saha (2011). "Sizing the Clean Economy: A National And Regional Green Jobs Assessment" Washington DC: Brookings Institute; C. Martín (2013). Evaluation of the Sustainable Employment in a Green US Economy (SEGUE)—Initiative in Development. New York: Rockefeller Foundation (January).

[54] E. Gordon et al. (2011). Water Works: Rebuilding Infrastructure, Creating Jobs, Greening the Environment." Oakland: Green For All.

low-income communities has arisen, though with less evidence or political support.[55]

Disaster and Emergency Mitigation

The disaster and emergency management literature is especially relevant to conversations about climate vulnerability. As noted earlier, the literature associated with emergency mitigation, communications and alerts, preparedness, response, and recovery have increasingly become concerned with vulnerable populations. The Hurricane Katrina response particularly brought this issue to light. However, most of the attention in this community has been on response and relief efforts and, to a lesser extent, preparedness (such as evacuation planning) and long-term recovery (post-disaster assistance formulas). Further, the organizing and advocacy groups embedded within socially vulnerable communities are less likely to be involved in disaster management planning and disaster assistance rules.[56] Bethel et al. (2013) examined the correlation between race and disaster preparedness, concluding that ethnic minorities are less likely to be prepared in the wake of disaster.[57]

The disaster management community has not developed particularly robust polices or programs for addressing these communities either. Recent changes to state level mitigation plans submitted to FEMA which determine federal mitigation assistance now require a broader focus on resilience.[58] National mitigation grants to communities are generally used for hazard assessments, protection of public and critical buildings (like hospitals and shelters), the promotion of voluntary property retrofit technologies, and studies for local adoption of more stringent building or land use regulations. Few of these activities have focused on demographic groups—such as low-income households—for prescriptive policy action, or even measurement of disparate effects with the exception of recent inquiries into the affordability

[55] Most of these monographs center on the arguments around whether energy regulations add costs to low-income and racial minority households without commensurate benefits. A controversial report in the most recent incarnation of this debate is Management Information Services, Inc. (2015). "Potential Impact of Proposed EPA Regulations on Low Income Groups and Minorities" Washington DC: National Black Chamber of Commerce (June), which focuses on the CPP. See also, Ari Phillips (2015). "How The National Black Chamber Of Commerce's Leader Is Harming African Americans" (March 17) Blogpost by Climate Progress: http://thinkprogress.org/climate/2015/03/17/3634581/house-takes-on-smog.

[56] A variety of reasons are suggested for this, including the control of technical knowledge by risk and disaster management experts: Scott Gabriel Knowles, *The Disaster Experts: Mastering Risk in Modern America* (Philadelphia: University of Pennsylvania Press, 2011).

[57] J. W. Bethel, S. C. Burke, and A. F. Britt (2013). "Disparity in disaster preparedness between racial/ethnic groups." *Disaster Health* 1(2).

[58] http://www.fema.gov/media-library-data/1425915308555-aba3a873bc5f1140f7320d1ebebd18c6/State_Mitigation_Plan_Review_Guide_2015.pdf.

of FEMA's National Flood Insurance Program.[59] Recent mandates for properties' earthquake retrofit in California cities, though unrelated to climate change's effects, have also been described as models for climate-related mitigation.[60]

Public Health

The public health community has maintained a relatively longer focus on how climate change and disaster events increase or exacerbate any disparities in health outcomes. For example, The Center for Disease Control and Prevention's Climate and Public Health Framework was created in 2006, with the formal establishment of its Climate and Health Program in 2009. The health field is concerned with both physiological and mental health outcomes associated with climate change's effects, as well as differences in access to healthcare between the most vulnerable populations and others.[61]

As a consequence of these findings, public health practitioners and EJ activists have placed some importance on preventative public health strategies to mitigate health impacts. Given the resources in the public health profession, assessments and programs are growing around the specific types of exposures that can be modeled given current climate scenarios.[62] Much of this literature has been either clinical, or has looked at the capacity of public health institutions to accommodate or respond, but not necessarily at policy or programs that vulnerable communities can implement or that are implemented on their behalf. In practice, there are several public health organizations both in governmental and civil sectors that are monitoring extreme weather incidents like heatwaves and developing responses for immediate needs.[63] In sum, public health entities in the U.S.—particularly, environmental health practitioners and policymakers—have paid particular attention to climate change's effects in more explicit and arguably more assertive ways than other organizations categorized in this study.

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[59] NAS (2015). *Affordability of National Flood Insurance Program Premiums: Report I*. National Academies Press: Washington DC.

[60] San Francisco's "soft story" ordinance was the first among these (http://sfdbi.org/mandatory-soft-story-program), leading to Los Angeles' and other cities' regulations (http://www.latimes.com/local/lanow/la-me-ln-earthquake-retrofit-20151009-story.html) and subsequent financing mechanisms being debated at the state level (http://www.latimes.com/local/cityhall/la-me-quake-20150921-story.html).

[61] USGCRP's Interagency Group on Climate Change and Human Health (2014). "Impacts of Climate Change on Human Health in the United States: A Scientific Assessment" Draft Paper for US National Climate Assessment.

[62] HHS (2014) "HHS Climate Adaptation Plan 2014" http://www.hhs.gov/sites/default/files/about/sustainability/2014-climate-change.pdf; HHS (2015) "Environmental Justice: Priority Areas of Focus.": http://www.hhs.gov/sites/default/files/ej-priority-areas-of-focus.pdf.

[63] All respondents in the public health sector noted the Center for Disease Control and Prevention's Building Resilience Against Climate Effects (BRACE) framework and its Climate-Ready States & Cities Initiative grantees and particularly emblematic of the field's activities and programs: http://www.cdc.gov/climateandhealth/climate_ready.htm.

Fair Housing

Like EJ, fair housing has typically focused on the locational disparities of housing and residency among different racial, gender, disability, and other protected class populations. In post-disaster scenarios—especially after Hurricanes Katrina and Sandy, fair housing advocates and legal scholars have focused on disaster recovery assistance, which is typically offered mainly to property owners in affected areas.[64] The field is also historically concerned with other geographic segregation, housing access (physical and economic), and physical housing surroundings—conditions which are all likely to be impacted by climate change. Despite this, there is no policy or program action that can be detected within the fair housing world focused on the likely disparate effects of climate change policies on vulnerable populations, the disproportionate allocation of adaptation or disaster mitigation resources across communities, or even the identification of failures in land use, disaster management, and resilience planning to accommodate for or anticipate variations in community vulnerability. As a literature produced largely by legal scholars, negative consequences have to be realized prior to action—an obvious impediment to anticipating climate adaptation needs and responses.

However, the scholarship around fair housing law and practices is particularly insightful for climate vulnerability discussions for three reasons. First, the communities identified statutorily in the Fair Housing Act and other civil rights laws are largely the same as those that are expected to be the most vulnerable to climate change's effects. Second, land use laws, housing finance regulation, other public rules at the local and national scale have been known contributors to housing discrimination and segregation. These practices are also proposed as possible adaptation strategies and, in theory, could be used to make already vulnerable populations even more vulnerable. Current and future adaptation plans and mitigation strategies could benefit from the scholarship on the formation and implementation of these polices and rules. Third, research on the definition and measurement of disparate impacts from housing policies and practices could support the analysis of disparate impacts from climate adaptation plans (and lack of planning) on vulnerable populations. Though legal scholars have entered into disaster management terrain only with regard to recovery, mitigation and adaptation plans and programs may be an entirely new activity within which to determine discriminatory consequences.[65]

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[64] Walsh, Kevin. December 12, 2013. "Christie Documents Show African Americans and Latinos Rejected at Higher Rates for Sandy Relief". Fair Share Housing: http://fairsharehousing.org/blog/entry/christie-documents-show-african-americans-and-latinos-rejected-at-higher-ra/.

[65] A. Kaswan (2012). "Domestic Climate Change Adaptation and Equity." *Environmental Law Reporter* 42. Since the research underlying this chapter was conducted, a variety of fair housing and civil rights organizations have filed comment on proposed rulemaking on non-discrimination in EPA's program grantees and activities that could serve "to build an important bridge between… [EPA's civil rights rules] Title VI… and the Fair Housing Act." See Haberle and Rich (2016) "Re: Comments on Nondiscrimination in Programs or Activities Receiving Federal Assistance from the Environmental Protection Agency, EPA-HQ-OA-2013-0031." Letter to EPA's Office of Civil Rights (March 16): http://www.prrac.org/pdf/EPA_Letter_re_Fair_Housing_Coordination.pdf.

Civil Rights and Community Organizing

The link between community groups and advocacy organizations for civil rights or certain population is obvious: these organizations exist to improve the conditions and reduce barriers in law and treatment for their constituents. The social capital supported by these groups can play a role in adaptation to climate change, and the interaction between individuals and the state is vital to the adaptation process and planning.[66] The general areas of participatory city planning, community activism and organizing (including civil rights advocacy) have a long history in U.S. policy and scholarship, particularly with regard to race and ethnicity. However, only a few of the local and national organizing groups have taken on climate or disaster policy issues in the last decade. Scholars of organizing and advocacy among vulnerable communities have started to produce cases and evidence of climate or disaster related interventions and effects globally, that could be relevant to organizing around climate adaptation.

Summary

The merging of environmental vulnerability and disaster management accelerated by calls for climate change adaptation is still nascent in the U.S. policy and practice arena. Much of this movement harnesses the term "resilience" to focus beyond the nature of the hazards and integrate the social, economic, enviro-physical, and political stressors that shape vulnerability.[67] A few pioneering voices argue that action should be taken to implement climate adaptation strategies.[68] To date, however, there appears to be very little implementation in the policy, program, and practitioner world regarding these communities' climate adaptation and disaster mitigation activities.

[66] Laukkonen, Julia, et al. 2009. "Combining climate change adaptation and mitigation measures at the local level." Habitat International. 33(3): 287–292.

[67] National Academies' Committee in Increasing National Resilience to Hazards and Disaster (2012). *Disaster Resilience: A National Imperative*. Washington DC: National Academies Press.

[68] Martinez and Sheats (2015). "Protecting Environmental Justice Communities from the Detrimental Impacts of Climate Change" in Luber and Lemery, *Global Climate Change and Human Health: From Science to Practice* (2015"Jossey-Bass, San Francisco CA).

Study Data and Methods

The literature regarding established organizations' climate adaptation and disaster mitigation activities for vulnerable communities in the U.S. ranges from local anecdotes about preparedness actions to global projections of the size of the vulnerable populations. The gaps leave us with more questions:

- How do these organizations understand climate change's effects in relation to their core constituents, or how different communities are disproportionately vulnerable to these effects?
- Have the organizations taken any action—advocacy, program, or otherwise—based on that understanding?
- Do the organizations have any relationships with other organizations that typically have focused on climate change—namely, environmental advocacy and program organizations? Or, if the organizations are primarily focused on environmental hazards or climate change already, what relationships do they have with organizations that typically have focused on specific communities?
- Have the organizations taken any climate change-related action as a consequence of their relationships with environmental groups or, conversely, vulnerable population advocates? What is the range of these actions (positions, advocacy, programs, research, etc.)?
- What are the barriers or challenges that the organizations believe they face in developing or expanding climate change responses?
- What are the organizations' perceived opportunities for engagement in climate change adaptation?

To answer these questions, the researchers designed an exploratory research study to describe the current state of climate vulnerability perceptions and adaptation activities among key stakeholder groups. The researchers reviewed all public documents related to organizations identified as having explicit missions and implementing currently or recently active programs, educational campaigns, or legal or policy advocacy in relation to (1) a climate-change vulnerability such as health impacts, property exposure, or potential loss of livelihood, and (2) one or a combination of the communities that are identified as climate vulnerable in the literature and policy review. This information formed the background for structured interviews with representatives from recruited organizations in the seven topic areas noted above. Responses to interviews were recorded and analyzed to uncover consistent, frequent, and significant themes across respondents.

Sample Selection and Recruitment

The diversity of organizational types in sample selection was intentional. The researchers sought to identify any organizations that may have played a role in promoting climate adaptation strategies or are likely to play a role in the future based

on their involvement with the vulnerable communities in question. From the typology of 7 organizational types, researchers developed a list of over 65 national and local organizations or individuals that are operationally active. This list was culled from various sources, including public and philanthropic grantee lists, references in public and scholarly documents, professional association memberships, and the researchers' identification of known leading stakeholders for each type. These lists were supplemented during the data collection process through "snowballing," or the direct and indirect identification of additional possible respondents during respondent interviews.

Organizations that have conducted public activities with regard to climate change's effects within each type were especially recruited. Program officers from engaged philanthropy and scholars focused on climate vulnerable communities were also interviewed. On the whole, the executive directors, presidents, or equivalent position holders in each group were solicited first via email, then through telephone recruitment. In the cases of vary large organizations, the staff member charged with focusing on either climate change programs or policy (or general environmental policy or programs) or on vulnerable communities was contacted first. The researchers completed hour-long interviews with almost 30 responsive recruits or their designated representatives across all 7 organizational types from October 2015 to January 2016.

Documentation and Confidentiality

Staff took written notes during all interviews and recorded the conversations with the interviewees' consent to confirm responses. Both recruitment messaging and the introductory statements of interviews included: (1) a general description of the project, the interviewing organization, and the project's funding; (2) more detailed descriptions for likely questions; and (3) confirmation of the voluntary nature of the respondents' participation and non-attribution of the their responses in any analysis or publically-available documents based on the interviews.

Structured Interview Protocol

The structured interviews used an identical protocol focused first on the respondent's depiction of her or his organization's mission in relation to specific environmental conditions, to specific demographic groups, or both, if any.[69] Interviewers

[69] Exceptions were made for additional background interviews held with scholars of environmental justice and climate adaptation efforts. Because these individuals were not the focus of the study, a condensed version of the standard protocol was used to identify the respondents' familiarity with any climate vulnerability efforts across all of the subject-matter fields.

asked additional questions to identify the history, mission evolution and general structure of the respondents' organizations as well. Respondents then also provided exhaustive information regarding their primary activities across three categories: awareness and education; service delivery; and policy or political advocacy. Interviewers exhaustively asked about the history of activity, partnerships, achievements, and challenges in each of these categories to ensure that any activity related to environmental and social vulnerability would be revealed.

Then, interviewers asked one of two parallel series of questions regarding current activities that may bridge environmental and social objectives. One series, directed at self-identified environmental organizations, focused on their partnerships with non-environmental groups and the significance of vulnerability and vulnerable communities to their environmental mission. The other series asked self-identified non-environmental organizations about partnerships they may have had with environmental organizations and the significance of environmental concerns to their core social missions.

Finally, interviewers asked all respondents about climate change issues in general, and about climate adaptation policy and programs in particular. Respondents were asked to describe the placement of climate change in their environmental or social missions, their knowledge about the distinction between climate change mitigation and adaptation, and any activities that they may have undertaken in the past, or are currently undertaking, or are planning to undertake in the future. Probes attempted to uncover any policy or program work that the respondent may not immediately identify as climate adaptation-related, and were based on the literature regarding global adaptation activities, such as property insurance access, infrastructure planning, emergency preparedness training, or hazard mitigation plan commentary. Regardless of their organizations' level of activity or awareness, respondents also answered questions attempting to gauge their perception of the opportunities and challenges with regard to climate change policy and programming. These open-ended questions referred to both internal determinants of future adaptation activity (such as staffing, leadership commitment, and fidelity to mission) as well as external ones (e.g., perceptions or capacity of their constituents, resources, strategic initiatives).

The protocol was pilot-tested twice among a social service provider as well as an EJ consultant prior to conducting any interviews.

Findings

The researchers analyzed responses within each organizational type and across all interviews to produce the themes noted in the findings below. In total, eight key themes emerged: the first corroborates the general estimation about the low level of program activity around vulnerable communities and environmental and emergency hazards. The other seven, however, are substantive themes that illuminate the challenges and opportunities for further activity. All themes were noted by a significant proportion of respondents, with quotes taken directly from them.

Nascent Field

The primary finding is that, at the time of the study, there was little to no program activity around climate adaptation or hazard mitigation and preparation for vulnerable populations across all three activity categories—awareness and education, service delivery, and advocacy or policy-making. Common statements made included: "It comes up, but not in a big way;" "It's been brought up before, but we don't have a solid plan…;" and "We are trying to let the communities take that lead." In some cases, respondents even noted having had the conversation about whether they should be doing something, and decided to table the conversation indefinitely.

This sentiment was consistent across most group types, including the national environmental advocacy groups who noted a purposive focus on climate mitigation. In all cases, the vast majority of respondents placed climate change adaptation—and, in some cases, climate change in general—as a relevant but not the most critical issue in their groups' missions or current agendas. Non-environmental groups described the environment in general as relevant or important but less critical. Most of the national civil rights and fair housing organizations interviewed described environmental concerns as lying just beyond their current scopes despite their interest in the disparate impacts of environmental hazards and other emergencies on their communities of interest.

The exception to this rule included a few local EJ organizations, one national civil rights organization that has significant local programming and works with local EJ groups, and the national and local public health community at large. These groups cited a few preliminary needs assessments and research projects undertaken in the last 2–4 years. The subjects of these adaptation-related projects include:

- Grassroots awareness-building and public messaging regarding resilience as "resistance"
- Neighborhood-level emergency preparedness scenario modeling, outreach, and planning
- Listening tours of coastal communities likely to be affected by sea-level rise
- Frameworks for monitoring emergency management outcomes before and after climate-related disasters
- Cooling station access and design for heat waves, and
- Projections of vector-borne disease, asthma, and pest infestation rates from global warming.

Yet, even in this grouping—that is, organizations with varying missions but some early adaptation or hazard mitigation activity, there is a general consensus that much of this work is recent: "Ten years ago probably, there was no awareness." The aftermath of Hurricanes Katrina and Sandy and their impacts on specific low-income households and communities of color were commonly cited as catalysts for beginning the conversation. All respondents that are familiar with adaptation policies noted that equity has only recently entered into the national discussion, though a few mentioned attempts at gaining traction for the idea up 8 years ago. In several

groups, however, the subject is "on the agenda," as a senior representative from a large environmental organization reported.[70]

Political Context

All respondents noted that any discussions about future environmental hazards or disasters—especially around climate change mitigation or adaptation—must be contextualized against the current political backdrop in the U.S. In particular, they noted the Republican Party's refusal to accept climate science's evidence of global warming and its causes within its formal platform, and its leadership's proposals to rein in the EPA. Several respondents linked this political context to the continued obfuscation of climate change in particular in political messaging which, in turn, was viewed as contributing to a persistent confusion or "lack of understanding of the magnitude of threat" from climate change in the general public (as articulated by one environmental funder).

In some cases, respondents linked "climate denial" to a general muddying of the popular awareness around environmentally-related science, regulations, and overall policy. A handful of interviewees from EJ and green economy organizations particularly noted the attempts by politically conservative groups, advocates, and funders to appropriate civil rights language through the funding of proxy groups and studies depicting the financial costs to households in marginalized communities of greenhouse gas or related environmental regulation.[71] For a few local EJ groups and community organizers in urban areas, further, the political rhetoric is particularly disturbing since it preys on perceptions in low-income and racial minority communities that environmental policies have historically benefitted wealthier and white communities and bestowed them with environmental amenities and economic advantages at the expense of other communities.

Respondents from within the larger environmental groups also noted a bifurcation of internal advocacy strategies, with some advocates arguing for engagement and negotiation with the political right for short-term wins while others actively promote alignment with "like-minded" organizations for the longer term. Some of the groups that have performed the early adaptation activities described earlier were quick to point out that they work in regions, states, or municipalities in which the use of the terms "climate change" and its corollary phenomena (e.g., "global warming") are either explicitly banned in public policy discussions or implicitly unacceptable. Emergency management experts and public health officials that were

[70] Only two respondent noted purposely not supporting or at least being wary of supporting climate adaptation or hazard mitigation activities for reasons other than capacity or timing. These respondents argued that adaptation discussions were "being abused" by the fossil fuel industry presumably to divert attention from climate mitigation.

[71] These responses corroborate the documents found during the policy review regarding alternative depictions of climate policy from civil rights groups. See Note 81.

interviewed described adopting terms like "climate trends" or "weather events" in their outreach and research activities, and label activities in reference to specific climate change effects—e.g., "dengue fever project" or "heat wave preparedness." In these cases, the respondents noted being able to affect the desired changes in policy or programming without generating a political backlash or confrontation.

The theme of contemporary politics also spills into other contextual themes that surfaced from the interviews. In particular, respondents noted that the persistence of climate science obfuscation has forced the large environmental organizations to strategize around policies that focus on the basics of climate change's core causes. It has also jeopardized federal funding and the institutionalization of governmental programs, policies, and cross-departmental collaboration that could better address environmental crises of all kinds, especially slow-moving ones like global warming. In turn, resources for local activity are described as inadequate. A few respondents noted that some national non-environmental organizations may be reluctant to take on environmental issues because they may be receiving support from "fossil fuel interests" for their current activities.

Ultimately, however, all respondents pointed to the broader political fights occurring over environmental issues in general—and especially over climate change-related policy—as a critical contextual theme underlying their work. In other words, the lack of robust adaptation activity should not be viewed as silence on their part as much as the microphone being moved away.

Policy Context

The political tensions produced the loudest cacophony during the 2009–2010 cap-and-trade bill debates in the U.S. Congress, a legislative failure whose voices echo in the contemporary CPP debates. For organizations that work with the most environmentally-vulnerable populations, the last decade of advocacy, and programming around climate adaptation have been highly shaped by a key policy strategy: the almost exclusive focus on addressing climate change's causes (namely, reducing greenhouse gas emissions) rather than its effects.

Respondents described the focus on climate mitigation (reducing greenhouse gases to impede climate change) over climate adaptation (reacting to climate change's effects) as being logical from both scientific and policymaking perspectives, and the interviewed groups working in environmental or climate arenas invariably described their extensive climate mitigation activities over the last 10–15 years. These projects generally focused on the reduction of fossil-fuel burning energy plants, energy efficiency and renewable energy programs, "smart growth" planning promotion, and the creation of green jobs as a consequence. The original activities or variations of them continue through the present.

Several respondents referred to the cap-and-trade bill failure as a significant milestone in the general discussion around the environment and marginalized communities. Prior to this, during what one respondent referred to as the "first green

cycle," national environmental and green economy groups worked jointly on several fronts, including: green job campaigns, the implementation of the American Recovery and Reinvestment Act, and the development of climate mitigation legislation. This broad coalition expanded to include a wide set of stakeholders that splintered during and after the time that the legislation failed. For example, the EJ community's departed publicly from large environmental groups on cap-and-trade strategies during the final legislative push. Three years later, organized labor's rift with Big Green on energy infrastructure funds such as the Keystone Pipeline caused an additional rift that left the environmental community looking for new allies.[72]

The "second green cycle" that continues to the present has focused on renewed coalition-building but still with an eye on climate mitigation policy, including support of the CPP. For many respondents, this cycle involves the national environmental organizations' outreach to different, traditionally non-allied constituencies like communities of color, to engage in the discourse on climate change policy in particular, but also the environment more broadly. The reasoning for this was described by respondents as both simple (with these groups "coming up as a huge part of the electorate in next few decades") and more nuanced.

Respondents described the engagement of a broader constituency on environmental issues as one that would inherently require engaging in different policy discussions and forming more robust alliances. Where the first policy cycle focused on "just communications," the second involves "partnerships" (as one respondent in a national environmental organization involved in both noted). These partnerships involve focusing on policy arenas—and with constituents—that are not in the environmental organizations' traditional scope. As one environmental group respondent noted: "we need to do a better job rallying them [non-traditional environmental communities], elevating their concerns related to climate change, and making those voices heard."

A handful of respondents offered a more nuanced take on the evolution of this partnering beyond increasing support and its effects on climate adaptation policy, or the lack thereof. For example, several respondents noted that climate mitigation policies are regulatory, allowing for legal action when a regulation is violated. Climate adaptation and disaster mitigation, in sharp contrast, involves predicting negative scenarios and their potentially disparate impacts and benefits. Historically, most environmental policy in the U.S. takes the former structure, leaving national environmental groups with gaps in their skill sets: "…our legal wheelhouse is better at stopping stuff rather than promoting the right investments… In terms of really helping vulnerable communities from the effects of climate change, I don't think we're there yet."

[72] Though most EJ coalitions decried cap-and-trade policies at the national level, the debate was most heated in California between 2008 and 2012 where a cap-and-trade bill successfully passed after the EJ community's protests: K. Sheppard (2008), "Environmental Justice V. Cap-And-Trade" *American Prospect* (February 28) and T. Schatzki and R. Stavins (2009), "Addressing Environmental Justice Concerns in the Design of California's Climate Policy" Analysis Group, Inc.

By focusing on climate mitigation policy, other respondents argued, many national environmental groups could avoid dealing with the complexities of crisis and disaster vulnerabilities—and avoid having the difficult conversations about adaptation and disaster mitigation policy solutions like relocation—with communities in which they had little experience or knowledge. A comprehensive look at climate adaptation policy would require addressing these vulnerable communities individually, with granular scientific evidence and with the appropriate sensitivity. A prominent environmental justice spokesperson noted when asked about the policy focus on climate mitigation: "There's a reason why there is a dearth of adaptation projects. It's the most difficult."

Governmental Context

A third contextual theme that emerged from the responses involved the lack of coordination between different governmental entities both across the federal government and between the federal, state, and local levels. This issue was notable in that it is both (1) a product of the context in which climate mitigation and adaptation are viewed as distinct policy areas requiring different sources of governmental attention; and (2) produces a program and funding disparity for local governments and advocacy groups between the two.

This theme was reported only by respondents with knowledge of climate adaptation or disaster mitigation policy. Specific agencies were mentioned as not coordinating on climate adaptation—namely, EPA, FEMA/Homeland Security, HUD, and the Army Corps of Engineers given their relevance to climate policy, disaster management, and infrastructure. In contrast, respondents who were only familiar with climate mitigation policy or could not distinguish did not mention any emergency- or infrastructure-related governmental departments when asked about agencies with which they work, receive funding, or monitor.

Among the few respondents familiar with the broader governmental roles and functions, many also noted historical disparities in how agencies approach marginalized communities and interact with the groups that advocate on those communities' behalf. For example, HUD has been historically familiar with local community organizing and development groups based on its legal, program, and resource mandates; the Fair Housing Act is a driving factor in promoting equity there. EPA's funding and programming around EJ and the actions of its Office of Civil Rights have also arguably bridged its technical regulatory mandate with its obligations under Civil Rights Act's Title VI. In contrast, a few respondents noted the consideration of disparate vulnerability and equity is "very new to FEMA." One national EJ stakeholder equated the federal government to the national environmental organizations: "I know how we struggled to make sure that EJ was infiltrated throughout."

In turn, these distinctions were described as having similarly bifurcating effects on state and local governments and their interactions with vulnerable communities and advocacy groups. These effects include gaps in the professional understanding

of public servants about the communities they serve. In the FEMA example, for instance, one respondent noted that in turn: "you have traditional disaster managers that will need to get up to speed on what you're talking about, what this means." Another respondent speculated that decreasing technical sophistication, policy capacity, and financial resources in government from the national to the local levels suggests lots of opportunities for problems between local public agencies and their most vulnerable constituents, challenging local advocacy groups' efforts. However, a handful of respondents noted that recent engagement opportunities between advocacy groups and government at all jurisdictions levels—including for disaster management and local community planning—as positive signs that need "more robust" substance.

Besides local government, one respondent noted that the divergent funding and compartmentalization of governmental programs had an effect on local advocacy groups as well. Information and knowledge were also bounded. Organizations attempting to link vulnerable communities with climate- or disaster-related action are similarly restricted in their capacity beyond what they know through their existing funding, program, and policy channels. The respondent referenced the specific example of local environmental justice communities and their absence from local emergency planning activities.

Resource Constraints

Regardless of which governmental agency or philanthropic funder provides financial resources and technical assistance to local advocacy groups, however, all respondents noted that the current pot is simply too small. Aside from purposive policy strategies (i.e., climate mitigation versus adaptation) or functional limitations (e.g., *ex post* legal defense versus *ex ante* planning), the lack of funding and bandwidth limits organizations of all sizes and constituent types. Funds to hire qualified planning consultants or for local training and awareness campaigns are non-existent, let alone for major infrastructure construction or retrofit. One emergency management professional noted that resource constraints play out in even the most mundane ways, for example the lack of formal meeting spaces in rural, low-income, or tribal communities perpetuating marginalization in the very engagement process that is meant to include these groups.

Every respondent mentioned funding regardless of whether they faced current gaps or the degree to which they currently work, or want to work, on environmental hazards. Among all of the organizations, the ability to identify and successfully acquire funds that would allow for the dedication of explicit staff and materials was described as a key cause of their current limited work in adaptation. Even those organizations that are often local public entities, like public health agencies or emergency management offices, reported significant resource constraints though these are primarily due to public budget cuts than to funder interest or lack of competitive funding opportunities. A few organizational representatives noted the role of spe-

cific foundations in bridging this gap, while others added that the funding community is only now breaking the silos between social equity issues and the "different world" of environmental concerns.

EJ groups face a particularly challenging funding pool because of their commitment to remaining grassroots, locally-focused organizations.[73] This scale often leads them to compete for funding against other local advocacy groups that may work in either non-environmental or environmentally-related areas. In some cases, further, local EJ groups also have not undergone non-profit incorporation, and are legally limited in their ability to access funds. According to these groups, the more endowed national environmental organizations are also reluctant to sub-grant, divert, or share their program funds or donation revenue with others locally given their broader geographic and policy scope. As a consequence, as one respondent noted, this scenario has led to a "mismatch" between "what's going on in those communities and who's doing the work."

Respondents familiar with local groups further elaborated that activities related to future environmental scenarios, community and infrastructure development, and other climate adaptation and disaster mitigation planning (as opposed to organizing around an already transpired crisis or taking legal action) are even more difficult to fund, though the groups are still expected to be at the table. One national EJ leader noted: "The best disaster response is addressing vulnerabilities beforehand. But, where is the money going for disaster preparedness? Not to EJ groups or any groups representing or constituted by vulnerable citizens."

In addition to the overall funding constraints, several respondents reported that past and currently available funding tied to specific policy strategies, governmental silos, and funders' interests further restricts organizations: groups must "follow the money." In most cases, that involves focusing on climate mitigation activities over adaptation because national resources steer it.[74] As a consequence, funding availability and requirements are contributing factors for the possible gaps in adaptation, environmental vulnerability, and crisis planning.

Knowledge and Capacity Constraints

Respondents also noted technical capacity and access to adequate and appropriate knowledge sources as a significant constraint to their work in general, and to their ability to further programming focused on environmental vulnerabilities. In some cases, particularly related to specific technical subjects (such as climate change models) or demographic data (as explained by one respondent, for example, the size

[73] One respondent quoted a statistic with unidentified source that 4.5% of foundation funds in 2002 went to EJ causes, and that this went up to 15% by 2012.

[74] A few national and local groups did note the recent role of specific private foundations in providing funds for broader climate activities that include adaptation, and the EPA's inclusion of climate preparedness and resilience in its 2015 Environmental Justice Small Grants Program.

of rural disabled populations in specific regions), the information is either complex or difficult to obtain in general. Though related to the funding constraints they all face, respondents speaking from within smaller local groups noted this in particular. Among a few respondents from national organizations, only a handful of local environmental organizing groups were repeatedly brought up as having some technical capacity and partnering with larger groups.

On the whole, however, these smaller groups with the most familiarity with local communities' social and economic needs—and the best position to communicate issues within communities—often have limited access to environmental science or data, particularly those as complicated as detailed local climate models or disaster scenarios that often do not exist and might require funding of entirely new research. In some cases, small EJ groups have been able to gain allies in local universities that can provide modeling, laboratory testing, and health assessments at a nominal cost or pro bono. Most, however, cannot afford the costs for granular analyses related to the geographic neighborhoods or demographic communities described in their missions even after negative impacts have been identified—let alone pro-actively in planning processes before they can arise.

In the cases of early adaptation projects, the smaller organizations often had to hire outside expertise or consultants despite having limited funds with which to do so. In fact, several respondents from smaller EJ and green economic groups were unable to make technical distinctions between environmental phenomena when asked detailed questions about environmental issues, such as climate mitigation versus adaptation activities. In some cases, respondents in social service and civil rights organizations were more familiar with the current scientific and policy terminology.

Some respondents noted that the purposeful strategy among EJ groups to remain locally-grounded and accountable to a grassroots base has challenged their ability to have the capacity to access and use the kinds of information available to larger national groups, though the increase of electronically available resources and datasets has helped. Another strategy that smaller groups have employed is the formation of coalitions on specific program activities with other like-minded small groups, with another local non-environmental community organization, or larger environmental organizations from which to access information resources though, as noted previously, this approach occasionally yields competition for funding and "turf."[75] Local non-environmental organizations, for example, reported having contact with environmentally-focused colleagues within their same community organizing worlds.

Ultimately, however, technical knowledge about which scientific evidence is needed and how to acquire it is critical in this arena. A respondent familiar with local climate adaptation planning activities across the country reported how often "local officials didn't analyze disproportionate impact on communities." The importance of technical capacity for understanding scientific information and pol-

[75] Coalitions pertinent to adaptation that were frequently mentioned in the interviews included the Climate Justice Alliance, the Environmental Justice Leadership Forum on Climate Change.

icy analysis and program requirements among these communities' organizers and representatives is therefore especially critical for climate adaptation and mitigation activities regarding any environmental disasters. Several respondents at both the national and local levels reported coming to the issue of environmentally-vulnerable populations and environmental policy as community organizers and not necessarily as "experts on the issues," as one organizer for a national environmental organization noted: "…we're aware of a big problem about our capacity to do research. We have a lot of people, but we're limited." The capacity gaps in some smaller, local groups, then, are even more apparent. Further, they impede the ability of some organizations to explain environmental problems and translate solutions to their constituents who are likely to be less familiar with the technical information than they are.

Persistence of Marginalization and Lack of Diversity

The lack of demographic diversity among the more powerful and nationally-focused environmental organization persists according to interviews—particularly racial and ethnic diversity, but also diversity in income backgrounds. A similar concern was noted with regard to the community of emergency management and climate adaptation professionals by the handful of respondents familiar with these individuals and organizations. Despite the acknowledgement from the broader environmental advocacy sphere of this problem over the last decade (and especially after the failed 2009 cap-and-trade legislation), virtually all respondents mentioned this continuing underlying gap; one respondent working with a large national environmental group laughed: "For a movement that supports biodiversity as one of its bases and protection of every creature, we haven't done a good job in being diverse in our ranks and valuing that diversity in our ranks."

Two distinct nuances are important in the depiction of this representativeness gap that we provided in the background policy and program review. First, multiple informants noted the implications of this exclusion on the funding and capacity-building gaps between the large groups (composed of the "usual suspects" that were typically described as funded and managed predominately by Whites) and the smaller local groups, especially EJ organizations (broadly described as African-American, Latino, Native American, and Asian-American). Given the EJ groups' principles of grassroots activism at the local scale, the question of diversity had organizational repercussions: "how big do the green groups need to be?"

A few interviewees also added that some larger organizations have rushed to window-dressing by integrating staff of color or having spokespeople of color that ultimately are not empowered or have limited technical or policy knowledge in environmental or hazard areas. One respondent referred to this as "diversity versus tokenism." For their part, most of the representatives from community organizations that are not or minimally working on environmental issues that were interviewed were conscious of the racial representation concerns among environmental organi-

zations, but did not necessarily link that to their decisions to not work on the subject or to any of their resource constraints.

Secondly, there was repeated concern among respondents that the large organizations continue to prioritize overarching environmental outcomes without considering their interplay with community concerns and place-based social or economic outcomes—that is, that the lack of staffing diversity perpetuates a gap in mission and program. For many interviewees, particularly those in the EJ community, the connection between being socially or economically vulnerable communities and their environmental and climate vulnerabilities is readily understood by the communities themselves. However, members of these communities do not or may not "necessarily identify as environmentalists." From a wide representation of the groups included in this study, then, comments regarding the importance of having people "that can relate to communities" or who can "translate" environmental information at the grassroots level were repeated: "Equity issues are not just about who is affected by climate change effects and how, but also regarding who gets to work on policies and activities for building resilience." For several respondents, the link between staff diversity (particularly racial) and program inclusion (especially of communities of color) was clear.

In parallel to the comments about window-dressing of staff, a few respondents noted similar window-dressing of policy and program strategies, or, "equity washing" according to one interviewee. This "disconnect" or "disengagement" between the environmental movement and the people impacted by environmental crises was articulated by one informant, for example: "When the environmental movement advocates for environmental improvement, they will use the impact on vulnerable communities. The problem is that it's not clear that they advocate for the environmental benefit to truly go back to those vulnerable populations." To corroborate that sentiment, many representatives from the larger groups themselves noted that the issues of vulnerable communities consistently ranked as moderately but not significantly or critically important to their groups' work—including representatives working exclusively on EJ issues or outreach and awareness building to underrepresented racial and ethnic communities. For these groups, the environment is the focus, and the nation or planet is the scope. Local, vulnerable human communities are a departure from their traditional practice in addition to the need to acquire different skills necessary for working in those communities. One informant put it in simply: "We have a long way to go."

Vulnerable Communities Context

A final theme that emerged in the interviews is less straightforward than the others, but described as just as critical to understanding the state of environmental and natural hazard preparations: the various ways in which environmental conditions interrelate or intersect with other issues in the lived experiences of individuals and

households in vulnerable communities. Variously termed "intersectionality" or "equitable development," several respondents among both social and environmental groups emphasized how these policies and programs need to be placed within the greater social context within these communities. By definition, the most climate vulnerable populations in the U.S. are also those that suffer from disinvestment, persistent social, political, and economic disadvantages, and "preexisting deficits of both a physical and social nature." As one EJ respondent noted:

> Trying to disentangle those institutions, practices, policies that place communities at a disadvantage is hard during normal times… Before we even get to resilience, we have to deal with moving beyond survival mode. We work in a lot of communities… and people wonder how your community can be resilient if it doesn't have the basic necessities of life, wellbeing, healthy, sustainable, livable, etc.?

This was particularly noted with regard to perceived distinctions between climate mitigation and adaptation in particular and between climate change and general environmental conditions, despite polling showing how climate change is prioritized highly in some of these communities. These distinctions were portrayed as ultimately being moot in the eyes of residents that deal with a myriad of social and economic challenges (from racial profiling to persistent poverty, as noted by social groups) to "legacy" environmental problems (such as air and water quality hazards and utility costs by EJ and environmental groups).

Respondents took pains to note that this did not mean that members of communities were not interested or worried about environmental crises. Rather, those crises needed to be contextualized among multiple community concerns and, in turn, appropriately messaged to communities:

> [Communities] may or may not understand or care about carbon emissions initially, but they may understand there's a hierarchy of needs. They may have a need for jobs. They may have a need for a manageable utility bill. They may have a need for understanding about asthma or heath concerns.

Several respondents, for example, noted how race as a topic for public discourse and grassroots activism has been elevated in the past decade. In this light, communities view environmental and hazard vulnerabilities as another layer in a historical pattern of intentional disparity. Even positive environmental advocacy or actual changes in communities are occasionally viewed with suspicion, since environmental amenities have often been associated with a lack of access or with gentrification of lower-income communities. For example, one respondent in the Gulf Coast area noted suspicions against "resilience" planning in the New Orleans area given the massive volume of resources and assistance brought to bear after Hurricane Katrina at the same time that the city's African American population continued to be depleted.

When asked about the importance of the environment for programming and other activities, coincidentally, no non-EJ community groups and national civil rights organizations interviewed ranked the issue higher than "important, but not critical." However, one respondent noted that rankings of any kind were problem-

atic given the multiplicity and interconnectedness of concerns in these communities. A consequence of this has been a backlash against some of the terminology used by environmental advocates to integrate environmental considerations within these communities' perspectives and goals; the most telling example of this reaction was the conscious appropriation and substitution of the term "resilience" with "resistance" among post-Katrina community advocates in the Gulf region.

In this context, most of the respondents in both national and local environmental organizations working in these communities stressed the importance of holistic planning and programming. Even though respondents from these groups ranked environment in general and climate adaptation in particular as highly significant or critical priorities for their missions, EJ groups recognized that their activities are defined by whether and how community members frame their needs. One informant with an EJ background in a large environmental organization noted: "If the community is not interested [in an environmental hazard], you can't force it and we need to respect that."

For these groups, further, polices or programs that can have benefits across multiple outcome areas for community members are the only viable ways in which environmental concerns can be addressed. Their primary task as organizations in these communities is "to help them make a connection with the environmental issue after that understanding [about the issue's effects on them] is made." As multiple respondents noted, some of these interventions ultimately may not be specific to pressing climate vulnerabilities or even environmental hazards in general. Even among groups that try to address multiple disparities including the environment and not selectively prioritize between them admit that: "Some issues get more attention, like criminal justice issues, because [they're] so 'dramatic'."

Beyond the urgency of any specific issue, though, most respondents described trying "to get out [of] the silo approach." Both because of the array of issues that vulnerable communities face as well as the intersection of environmental vulnerabilities with them, EJ respondents in particular noted that there is "no way you can work in a community and only focus on one issue." The consequences of acknowledging and addressing this context appropriately and ethically, however, has led to prioritizing the most impending crisis with whatever resources are available. Future natural hazards and environmental emergencies, then, are not necessarily on the immediate horizon.

Conclusion

This exploratory study corroborates the observations from literature and policy reviews that there are persistent gaps in recent and current programming around future environmental crises and natural hazards among U.S. civil-sector organizations at the national and local levels. Seven primary reasons were noted for this "silence:"

1. The obfuscation regarding climate change's causes that continues to confuse public perceptions in the U.S. and impede either mitigation or adaptation action overall;
2. The current policy focus on climate change mitigation activities over adaptation;
3. The lack of coordination between governmental entities and other funders charged with chronic environmental impacts and the management of acute disasters
4. The under-resourcing of the advocacy groups that are most familiar with the issues and challenges—especially, EJ organizations;
5. The lack of specific and local climate change impact data or information from which to anticipate vulnerability and create actionable programming as well as the capacity of local groups to understand and "translate" environmental and emergency planning data to local communities;
6. The persistent omission of traditionally marginalized populations from the prioritization and decision-making process in environmental politics, especially in the larger, nationally-focused environmental organizations; and
7. The challenge of positioning environmental issues in general—and climate adaptation or emergency planning in particular—within the complex environmental, social, economic, and political context of the vulnerable communities in question.

All respondents noted a combination of these factors as contributors to the current state of educational and awareness campaigns, program activity, and policy advocacy in their organizations during interviews.

However, several respondents also noted a few rays of light among these clouds. With regard to the general political context, respondents noted the increasing polling of U.S. citizens in general—and of disenfranchised communities of color in particular—that suggest an increasing awareness of climate change, its causes and likely effects, and its influence on broader familiarity with the natural environment. Lessons from Hurricanes Katrina and Sandy were also brought up as signs of increased attention to climate adaptation measures, as well as improving linkages between community development, environmental, and emergency management policies federally; one respondent working on emergency management planning noted the "move beyond hazard mitigation and [looking] at long-term solutions" that are both social and physical.

Even in the area of diversity gaps in the environmental communities' staffing and program focus, respondents were clear to mention that "there has been some progress over the last 20–30 years." Several respondents invoked the broader public discussion about social exclusion, structural racism, and civil injustices over the last 4 years—and the environmental movement's acknowledgement of its internal failings—as signs of a broader societal exploration of vulnerability of all kinds, including environmental ones. Some EJ and national civil rights respondents pointed out that many of the key activists in these cultural and political discourses are young adults—suggesting a not-so-distant opportunity for additional attention and activity in addressing needs in environmentally-vulnerable communities and reinvigorating and redefining the population of organizations that work in them.

As such, the respondents collectively did not suggest that the current state of affairs portends future doom and gloom.

Policy Recommendations

In fact, the only contributing factors for which there was not much stated overt optimism were the organizational and resource constraints that face the community organizations working at the local levels. Four categories of recommendations can be gleaned from the study's findings as well as the literature review about environmentally-vulnerable communities and the current policy scenario.

The first intervention for overcoming the challenges posed by these factors focused on increasing the demographic diversity among staff of the national environmental groups, or expanding the resources and support from leadership in the national groups for internal staff that deal with vulnerable communities (typically, the large organizations' EJ or community initiative offices). The findings from this study would seem to support further diversification within the organized environmental movement's ranks and within its programmatic scope in order to better identify and serve these communities. Likewise, expanding the attention of those community organizers, social advocates, and civil rights organizations that traditionally have not focused on the potential of future environmental crises to affect their constituents is also a likely trend that should be supported by philanthropy and public program funds where active, local groups do not exist. Virtually all respondents stated that meeting these objectives is necessary and feasible in order to bridge the gaps between the two advocacy and service worlds of the environment and social equity.

Increased funding for environmental community groups is a second, and obvious, recommendation. More than a few respondents also noted the opportunities for increased funding opportunities from federal sources, including obvious ones like the EPA's EJ grant program. For climate adaptation in particular, however, other, less obvious sources could also be harnessed. FEMA's mitigation grant programs have typically focused on physical mitigation strategies rather than comprehensive planning that accounts for and involves vulnerable communities. These programs have also received appropriations at levels incompatible with the costs of post-emergency cleanup and recovery.

Beyond money, the federal enforcement of EJ executive orders and civil rights laws in relation to protected classes that typically overlap with environmentally-vulnerable communities has typically been weak and underfunded as well, particularly with regard to requirements to: (1) fully engage all affected parties during the planning for programs and infrastructure; and (2) in considering the unequal treatment or exacerbating of vulnerabilities that are occurring directly as the observed consequences of a program or infrastructure project—and that might occur from it in the future. The support of recent legal rulings with regard to disparate impacts suggests a third potential area for policy intervention and organizational advocacy:

moving beyond ex post legal action after a population's vulnerability has been confirmed to ex ante planning and community engagement for identifying and mitigating vulnerabilities early. FEMA's expanded requirements on states' hazard mitigation plans constitute one ideal channel for this attention. The role of local community groups in planning and larger environmental organizations in litigation in these policy shifts would be critical in this and other place-based plans and infrastructure developments.

To accomplish those activities, however, current groups need more than just funding. The internal capacity issues in organizations, particularly the technical knowledge of grassroots organizations, must also be expanded. As noted by the groups themselves, they typically have to contract out health surveys, soil and water tests, and land use studies, often without the requisite skill to know what to request or how to interpret results. For these smaller community groups, potentially those in the long-serving EJ movement, a dramatically expanded volume of technical resources is required. The fourth category of recommendation, then, revolves around expectations for organizing and program activity that is cognizant of environmental science. In short, an expanded type of environmental community group or environmental community professional is needed.

A "community environmental translator" could bridge technical data, local contexts, and policy savvy in ways that can mitigate future environmental crises, reduce current environmental vulnerabilities, and right past environmental wrongs. The organizations in which they would be housed would need commensurate access to funds to hire technically-proficient and community-sensitive experts, acquire appropriate and relevant scientific information, and draw links between the different planning and policy streams that traditionally perpetuate their constituent communities' vulnerabilities. Some of the respondents noted the existence of a few high-capacity EJ groups, for example, that are already attempting to move in this direction by having experienced science, engineering, and policy analysis staff in-house.

With regard to climate adaptation especially, these currently strapped organizations could then not only identify vulnerabilities, but also begin to pilot program and service delivery in the areas of property insurance, infrastructure upgrades, relocations, water and utility planning, urban and disaster planning—the actions that are notably missing now but desperately needed given environmental legacies and futures. Ultimately, as this exploratory study suggests, the current gaps in the organizations' activities with regard to future environmental crises is not intentional. Regardless, that silence is still deafening.

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