

Book Guide

Building a Resilient Tomorrow

Building a Resilient Tomorrow draws on international and national examples, some revealed for the first time, to provide an interdisciplinary narrative covering a range of climate resilience solutions.

Summary

This book examines ways that communities can reduce, absorb, and recover from climate change impacts. It offers behind-the-scenes stories from the authors' experiences working at the highest levels of the U.S. government. It also presents real-world analysis of what is and isn't likely to work in the policymaking realm as well as concrete, actionable policy recommendations. Drawing on international and national examples and stories, the book offers an interdisciplinary narrative covering a range of climate resilience solutions.

The book examines systems that can drive resilience including the rules and practices that govern how and where we build, the courts, and the financial system. Turning to the tools that leaders in business and government can deploy to build resilience, it delves into money, climate data and information, and improved approaches to decision-making. The hardest challenges that climate change will hurl at us—emerging threats to human health, increasing economic and social inequality, unprecedented levels of migration, and increased risks to geopolitical stability and national security—present lessons to better prepare for associated risks and to strengthen climate resilience.

The book is suitable for high-school seniors and undergraduate and graduate students in the disciplines below:

- Architecture, design, and planning
- Business administration (Management, Governance, Risk management)
- Civil engineering
- Environmental studies
- Medicine and public health
- Social Sciences
 - Economics and finance
 - Geography
 - Law
 - o Politics / Political Science
 - International relations
 - Political economy
 - Public administration
 - Public policy

Discussion and Essay Questions

Chapter 1

- What does the term "resilience" mean as applied to climate change?
- Why is the term important in addressing climate change?
- What is its relationship to climate mitigation (cutting greenhouse gas emissions)?

Chapter 2

• What exactly is a "no-more" moment and how does it apply to the Netherlands and Florida?

- Why has it been difficult in the past to build resilience in the absence of "no more" moments?
- How can we overcome those barriers?

Chapter 3

- Why are markets important to promoting resilience at a system-wide level?
- What is preventing stock, bond, real estate, and insurance markets from reflecting climate risk?
- What market transformations would better address climate resilience?

Chapter 4

- What are "climate bailouts," and why are they a threat to a country's fiscal health?
- What are traditional ways governments pay for resilience investments?
- What are innovative ways to raise funding for resilience? Why are these methods considered untraditional?

Chapter 5

- What does "climate data revolution" refer to?
- What are ways that climate scientists and researchers can better connect data and instigate its use for policymakers?
- Who should provide weather and climate data, and what are the associated costs? Explain your answer.

Chapter 6

- How are availability bias, optimism bias, and loss aversion bias obstacles to building resilience against climate change?
- How can "nudging" techniques help promote climate resilience?
- What are the limitations of "nudging" techniques?

Chapter 7

- What threats to human health will climate change bring?
- What can the Zika virus tell us about health threats?
- How can the U.S. health care system better identify, cope, and respond to future risks?

Chapter 8

- How will climate change impacts affect poor and vulnerable communities?
- What role do savings, insurance, and mobility have in ensuring financial resiliency toward climate impacts?
- What concrete steps can governments take to ensure that resilience solutions are inclusive and do not exacerbate inequality?

Chapter 9

- What are drawbacks to the United States' buyout approach?
- What are "receiver communities," and why is it important to invest in them?
- How can can we create fruitful discussions of managed retreat in ways more likely to be well received by the public?

Chapter 10

- How are climate change impacts jeopardizing U.S. military readiness?
- What national security threats are emerging as a result of climate change?
- What steps can help U.S. policymakers take to make climate-informed decisions based on the best scientific evidence?

Supplementary Materials

General

Global Commission on Adaptation, *Adapt Now: A Global Call for Leadership on Climate Resilience* (Washington, DC: Global Commission on Adaptation, 2019).

Alice Hill et al., Ready for Tomorrow: Seven Strategies for Climate-Resilient Infrastructure, Hoover Institution, 2019.

IPCC, Global Warming of 1.5°C, [Masson-Delmotte et al. (eds.)], In Press, 2018.

McKinsey Global Institute, *Climate Risk and Response: Physical hazards and socioeconomic impacts* (New York, NY: McKinsey & Company, 2020).

Robert Meyer and Howard Kunreuther, *The Ostrich Paradox: Why We Underprepare for Disasters* (Philadelphia, PA: Wharton School Press, 2017).

Office of the Director of National Intelligence, "Implications for US National Security of Anticipated Climate Change" (Washington, DC: National Intelligence Council, 2016).

Chapter 1

Michael Kimmelman, "The Dutch Have Solutions to Rising Seas. The World Is Watching," NYTimes.com, June 15, 2017.

Christina Nunez, "As Sea Levels Rise, Are Coastal Nuclear Plants Ready?," NationalGeographic.com, December 16, 2015.

Helen Roxburgh, "China's 'Sponge Cities' Are Turning Streets Green to Combat Flooding," The Guardian.com, December 27, 2017.

Kerry Sanders, "'Dome Home' Weathers Storm," NBCNews.com, September 16, 2004.

Lauren Sommer, "As California's Population Grows, People Are Moving into More Fire-Prone Areas," *All Things Considered*, NPR, October 27, 2017.

Chapter 2

Meagan Flynn, "Federal Judge Rules Extreme Texas Prison Heat Is Cruel and Unusual Punishment," HoustonPress.com, July 20, 2017.

Jennifer Klein, "Potential Liability of Governments for Failure to Prepare for Climate Change" (New York: Sabin Center for Climate Change Law, 2015).

Robert McCoppin, Lisa Black, and Dan Hinkel, "Insurers Sue Chicago-Area Towns in Bid to Get Flood Money," Chicago Tribune.com, May 14, 2014.

Jessica Wentz, "Government Officials' Liability after Extreme Weather Events: Recent Developments in Domestic and International Case Law," *Climate Law Blog*, Columbia Law, April 9, 2015.

Chapter 3

Jenny Anderson, "Outrage as Homeowners Prepare for Substantially Higher Flood Insurance Rates," NYTimes.com, July 28, 2013.

Lael Brainard, "Why Climate Change Matters for Monetary Policy and Financial Stability," (speech, Federal Reserve Bank of San Francisco, San Francisco, CA, November 8, 2019).

Christopher Flavelle, "Rising Seas May Wipe Out Jersey Towns and Millions in AAA Bonds," Bloomberg.com, May 25, 2017.

Mary Williams Walsh, "How Wildfires Are Making Some California Homes Uninsurable," NYTimes.com, November 20, 2018.

Chapter 4

Leonardo Martinez-Diaz, "Investing in Resilience Today to Prepare for Tomorrow's Climate Change," *Bulletin of the Atomic Scientists* 74, no. 2 (2018): 66–72.

Kathleen McGrory, "Despite Criticism, Miami Mayor Tomás Regalado Maintains Support," MiamiHerald.com, January 20, 2013.

Robinson Meyer, "Will Washington State Voters Make History on Climate Change?," The Atlantic.com, August 18, 2018.

Chapter 5

"Software Can Model How a Wildfire Will Spread," *The Economist*, August 4, 2018.

Paul Reig, Tien Shiao, Roy Owens, and David Palochko, "Case Study: Aqueduct Informs Owens Corning Corporate Water Strategy" (Washington, DC: World Resources Institute, 2013).

Ashlee Vance, "The Tiny Satellites Ushering in the New Space Revolution," Bloomberg.com, June 29, 2017.

Maria Eliza Villarino, "Climate Services for Smarter Farming—What's It All About?," CIAT Blog, October 5, 2017.

Chapter 6

Zeina Afif, "Nudge Units'—Where They Came from and What They Can Do," *Let's Talk Development*, World Bank, October 25, 2017.

Robyn Dixon, "How Cape Town Found Water Savings California Never Dreamed Of," LATimes.com, April 1, 2018.

Exec. Order No. 13707, "Using Behavioral Science Insights to Better Serve the American People," 3 C.F.R. 56365 (2015).

Chapter 7

"Lessons Learned From Hurricane Sandy and Recommendations for Improved Healthcare and Public Health Response and Recovery for Future Catastrophic Events," American College of Emergency Physicians, December 22, 2015.

Alan Boyle, "How Microsoft's Project Premonition Uses Robotic Traps to Zero in on Zika Mosquitoes," GeekWire.com, February 16, 2017.

Margaret Chan, "WHO Director-General Addresses Event on Climate Change and Health" (speech, 2015 United Nations Climate Change Conference, Paris, France, December 8, 2015).

EU Science Hub, "Climate Change Promotes the Spread of Mosquito- and Tick- Borne Viruses," news release, March 16, 2018.

Anemona Hartcollis and Nina Bernstein, "At Bellevue, a Desperate Fight to Ensure the Patients' Safety," NYTimes.com, November 1, 2012.

Chapter 8

Zack Coleman and Daniel Cusick, "2 Towns, 2 Storms, and America's Imperiled Poor," EENews.net, October 1, 2018.

Pope Francis, Laudato Si' (Vatican City: Vatican Press, 2015), chap. 1.

Mary Jo Gibson and Michele Hayunga, "We Can Do Better: Lessons Learned for Protecting Older Persons in Disasters" (Washington, DC: AARP Public Policy Institute, 2006).

Eric Klinenberg, "Adaptation: How Can Cities Be 'Climate-Proofed'?," New Yorker, January 7, 2013.

Nicholas Kusnetz, "Norfolk Wants to Remake Itself as Sea Level Rises, but Who Will Be Left Behind?," InsideClimateNews.org, May 21, 2018.

David M. Perry, "America Isn't Ready for Disability Disaster Response This Hurricane Season," CityLab, June 1, 2018.

Chapter 9

Peter Grier, "The Great Katrina Migration," Christian Science Monitor, September 12, 2005.

Mathew E. Hauer, "Migration Induced by Sea-Level Rise Could Reshape the US Population Landscape," *Nature Climate Change* 7 (2017): 321, 324.

Jonathan Pearlman, "New Zealand Creates Special Refugee Visa for Pacific Islanders Affected by Climate Change," StraitsTimes.com, December 9, 2017.

Alice R. Thomas, "Resettlement in the Wake of Typhoon Haiyan in the Philippines: A Strategy to Mitigate Risk or a Risky Strategy?" (Washington, DC: Brookings Institution, 2015).

Lisa Song, Al Shaw, and Neena Satija, "After Harvey, Buyouts Won't Be the Answer for Frequent Flood Victims in Texas," TexasTribune.org, November 2, 2017.

Chapter 10

Sualiha Nazar, "Pakistan's Big Threat Isn't Terrorism—It's Climate Change," ForeignPolicy.com, March 4, 2016.

Justin Nobel, "What Happens When a Superstorm Hits D.C.?," RollingStone.com, September 21, 2017.

Barack Obama, "Memorandum on Climate Change and National Security" (Washington, DC: US Government Publishing Office, 2016).

Office of the Director of National Intelligence, "Implications for US National Security of Anticipated Climate Change" (Washington, DC: National Intelligence Council, 2016).

Dave Philipps, "Exposed by Michael: Climate Threat to Warplanes at Coastal Bases," NYTimes.com, October 17, 2018.

Supplementary Audiovisual Material

Roger Sorkin, *Tidewater* (2017; Norfolk, VA: American Resilience Project).

Judith Helfand, Cooked: Survival by Zip Code (2019; Chicago, IL: Kartemquin Films).

Rick Young, Business of Disaster (2016; Boston, MA: Frontline).

Jared P. Scott, *The Age of Consequences* (2016).

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