Chapter 6: Compound Urban Crises in Global Environmental Politics

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Introduction

As turbulence in global financial markets, social and public health systems, and ecological systems manifest as pervasive global phenomena, there is increasing recognition of the urban context as a site where these crises and shocks touch down. Cities, as centers of population, finance, industry, and within which an ever-larger share of natural resources are consumed, are portrayed as both generators and recipients of these systemic challenges. This is clearly illustrated, for example, by the vulnerability of urban areas to the impacts of climate change (Hoegh-Guldberg et al. 2018). However, cities (and their regions) have also become a source of hope; they represent sites where seemingly impenetrable national and transnational political challenges may be addressed or feasibly managed (Watts 2017).

In this chapter, we engage with a unique form of turbulence that we term "compound urban crises," which is comprised of multiple shocks and stresses that co-occur and interact. To date, such interconnected shocks have often been understood and tackled as singular crises; a perspective that involves identifying discrete solutions to answer one-off, sectoral problems (e.g., the 2008 financial crisis, the COVID-19 pandemic, particular environmental issues, poverty in localized areas). We argue that we need to understand these shocks as relationally connected and leading to mutually recursive turbulence.

Compound urban crises create new concerns for global environmental politics (GEP). On one hand, GEP scholarship is well positioned to address interlinkages of global environmental institutions and socio-environmental challenges (e.g., through the regime complex literature) (Biermann and Pattberg 2012). This scholarship is interested in issues of fragmentation and coordination among heterogeneous actors, including in research on global climate governance (Chan and Pauw 2014) and polycentricity (Stehle 2021). On the other hand, less attention is directed to complex interactions between urban politics and global dynamics. We contend that understanding the dynamics of interlinked turbulence requires approaching urban and global politics as interconnected and mutually reinforcing processes. These interconnections generate nonlinear and unpredictable dynamics that raise new questions for GEP. For example, can international organizations address contemporary crises in cities, and, if so, what support is preferable? Do international interventions exacerbate ongoing turbulence in cities? Engagement with compound urban crises is one entry point to answer such questions.

In the following paragraphs, we explain compound urban crises by introducing three boundary concepts: "unsettlement," "unevenness," and "unbounding" (Westman et al. 2022). We follow Mollinga's (2008: 25) definition of boundary concepts as "words that operate as concepts in different disciplines or perspectives, refer to the same object, phenomenon, process or quality of these, but carry (sometimes very) different meanings in those different disciplines or perspectives." Boundary concepts allow bridges between literatures with similar concerns that do not talk to each other. Our three boundary concepts draw on insights from two different but complementary scholarships: complex adaptive systems (CAS) and critical urban studies (CUS). To add real-world perspectives, we draw upon practitioner insights from an Innovative Session held by the Urban Working Group at the 2021 Earth System Governance conference, presented through case studies.

Understanding compound urban crises

Compound urban crises encompass multiple, interconnected, and co-occurring forms of disruption in urban settings. These crises are linked through their drivers, the systems in which they are embedded, and their outcomes (Westman et al. 2022). To understand these dynamics, we apply three boundary concepts: unsettlement, unevenness, and unbounding.

a) Unsettlement

Unsettlement refers to the state(s) of permanent instability in cities, in which governance processes, socio-material systems of support, and established practices of everyday life are continuously destabilized and disrupted. From the perspective of CAS, unsettlement is explained by the interconnectedness of natural and human-made entities operating in 'open' global systems (i.e., system constituents exchange information with their environment and are also influenced by it). CAS theory explains that system elements interact through nonlinear feedback loops, which create a disproportionality between inputs and outcomes (Orsini et al. 2020). Feedback effects generate unpredictable impacts, even when they originate from minor system changes. For example, the global financial crisis of 2007–2008, with roots in the financial and real estate market in the United States, resulted in far-flung and unpredictable outcomes, such as adverse effects on small- and medium-sized enterprises in Pakistan (Syed et al. 2012). Such unpredictable dynamics radiate through supply chains to affect urban life in highly dispersed parts of the world.

From the perspective of CUS, unsettlement describes the enduring urban condition of precarity produced by structural political-economic forces, including capitalism and neoliberal development (Molotch and Logan 1984). Cities are affected not only by capitalist rationalities in local decision-making, but also by being connected with a transnational economy that reproduces disruption through interconnected labor markets and finance. The global capitalist system generates regular socio-economic shocks, many of which manifest in cities in the form of recession, unemployment, and unreliable flows of finance. Capitalist economies are sustained by low-paid, unstable work, which generate constant insecurity for individuals and households in cities around the world (ILO 2018). In addition, capitalism operates according to logics of accumulation and dispossession, which leads to exclusion and poverty of urban residents (Gay et al. 2013).

By highlighting unpredictable global disruptions and permanent precarity in cities, unsettlement draws attention to new challenges for GEP. Being that interventions in one place can have unintended outcomes in that locale or elsewhere, there is a need for critical reflection on interventions promoted by international environmental organizations. Transnational networks that aim to address environmental problems present cities across the world with a variety of 'good practices.' In doing so, they tend to ignore the possible nonlinear impacts of these interventions. For example, smart transport systems and electric vehicles are widely advocated as solutions to rising levels of air pollution and carbon emissions, but there is limited attention to effects further afield. The mining of minerals

required for such technologies results in severe environmental and public health risks in some parts of the world, including exploitation of child labor and migrant workers (Sovacool et al. 2020).

Afghanistan embodies unsettlement, with instability characterizing the everyday life of millions of urban dwellers. Since the late 1970s, the country's history has been dominated by prolonged warfare, starting with the Soviet-Afghan War, followed by three consecutive civil wars that resulted in the large-scale takeover of the country by the militant Islamist faction, the Taliban. During their 1990s rule, the Taliban "presided over an international pariah state, mismanaged the economy and increased repression (particularly of women) as discontent spread" (Graham-Harrison 2021). The United States-led occupation in 2001 began a 20-year long war that concluded with the fall of Kabul in August 2021 and saw the totalitarian Taliban regime regaining control of government and declaring the country an Islamic Emirate.

The consequences of this violent and protracted period of politico-economic unsettlement have decimated the nation. Many lives have been lost or disrupted and the United Nations warns that up to 97% of Afghans could plunge into poverty by mid 2022 (UNDP 2021), particularly given that the departure of US and NATO troops has been accompanied by the cessation of foreign aid. With historically low levels of urbanization resulting in only a quarter of the population living in urban areas, this most recent unrest will only compound previous plans for economic and social development (United Nations Population Division 2018). Prior to recent political events, the National Unity Government of Afghanistan recognized the "urban agenda" as a driver of economic and social development. It was seen as "an effective instrument and driver of prosperity, stabilisation and state building," when supplied with "accurate and timely information upon which to base policy and planning decisions" (Government of the Islamic Republic of Afghanistan 2015: vi). Given this ambition, in 2014/2015, the Afghan Ministry for Urban Development Affairs, the Independent Directorate of Local Governance, and Kabul Municipality, working with the United Nations Human Settlements Programme and with financial support from the Government of Australia, undertook The State of Afghan Cities programme (Government of the Islamic Republic of Afghanistan 2015). The programme used satellite images to extract key land use and dwelling data, alongside field checks and city workshops with diverse local stakeholders, to generate the first-ever comprehensive assessment of the country's 34 Provincial Capital Cities.

The programme demonstrated how much of Afghanistan's recent urbanization has been informal, low-density sprawl, resulting in increasing socio-spatial inequalities and significant infrastructure deficiencies. The vast majority of urban Afghans live in under-serviced, informal housing with very little tenure security and very poor access to basic services such as water and sanitation (Government of the Islamic Republic of Afghanistan 2015: viii). The country has one of the youngest populations of the world (with 79% under 35 years). Across all indicators, the urban poor (nearly one third live below the official poverty line), especially women and children (suffering from institutionalized gender inequality, for example less than 1% of urban land and property is held by women), are most vulnerable to the impacts of an unstable urban environment (Government of the Islamic Republic of Afghanistan 2015: 96). Future urbanization holds uncertain prospects for the environment, with a pressing need for waste management, protection of sensitive ecosystems, and the integration of risk into urban planning to account for impacts of climate change (Government of the Islamic Republic of Afghanistan 2015). Despite this, Afghan cities were also shown to be a significant source of economic and social development, with urban communities demonstrating significant capacity to lead neighborhood upgrading and local peace-building efforts.

While instability has been part of Afghans' everyday life for decades, the US withdrawal in August 2021, leading to the Taliban's surge back to power, was a globally public display of unsettlement, which threatens future urban development and stability of the nation. This much criticized military exit illustrated how the lives of Afghan citizens continue to be deeply affected by geopolitical decisions made by the US, Europe, immediate neighbors like Pakistan, and the Islamic Republic of Iran. At the time of writing, much of the Afghan population are leaving Kabul for provincial capitals or fleeing abroad in the hope of safety and security. The current scale of unsettlement in Afghanistan will shape cities and lives for a long time and it is difficult to predict the long-term impacts. The story is still being written and many questions remain about how to break this cycle of turbulence and instability that generates perpetual precarity for the Afghan people.

Box 1. An example of unsettlement: precarity and unpredictable conditions of life in Afghan cities

b) Unevenness

In compound urban crises, unevenness refers to the differentiated impacts of turbulence across diverse societies, which links to past histories and experiences, as well as to current political-economic and material structures.

CAS theory accounts for unevenness through the concept of path dependency, which captures the reproduction of systemic inequalities and risks. Path dependency explains how a local context and early sequence of decisions affect the behavior of a given system (Dryzek 2016). In cities, both material (e.g., infrastructure and physical urban form) and institutional path dependencies (e.g., particular policy routes or institutional arrangements) can reinforce inequalities and vulnerabilities. For example, climate responses in cities are affected by the inertia built into certain infrastructures, technologies, institutions, and societal practices, such as natural gas-fuelled heating systems. Historical infrastructural and energy supply decisions can create path dependencies and 'carbon lock-ins' that limit effective adaptation and mitigation actions (Decarb City Pipes 2050). For instance, in the late 19th Century, the interests of one individual—Samuel Insull, operating within the company Edison General Electric—disproportionately shaped development of the US electricity grid as he sought to make profit by generating electricity in one location for multiple users (Bakke 2016). This led to the formation of a monopolistic system that, today, is extremely hard to reform and acts as a barrier to the full development of a renewable energy system in one of the largest contributor countries of global CO_2 emissions.

The CUS scholarship underlines histories that have created and reproduced patterns of social inequality, particularly related to legacies of colonization. For example, the construction of urban centers in societies under colonial rule in Africa followed strategies of racial segregation (Njoh 2008), which directly link to contemporary patterns of exclusion, housing inequalities, and informality in African cities (Pérez et al. 2015). However, discrimination based on social categories of difference creates inequality and deprivation in cities in all parts of the world. For example, this is apparent in the segregation of Romani people in urban Europe (Picker 2017) and in communities of color in the United States that reside in underserviced neighborhoods with decaying infrastructures (Silver 2021).

Unevenness raises new questions for GEP. A difficult aspect, which relates to both path dependencies and histories of social injustice, is to understand if and how global environmental policy reinforces vulnerabilities when implemented in the urban context. Climate adaptation programs are a prominent example of this. When applied without consideration of the history of a given city, investments in new or refurbished urban infrastructures may exacerbate socio-economic inequalities. For example, investment into green infrastructure in urban areas has been shown to contribute to population displacements, land grabs, and evictions; and infrastructure upgrades contribute to inflated property prices and gentrification (Anguelovski et al. 2016; Shokry et al. 2020). An underlying challenge in these cases is that policy solutions are implemented under conditions where urban elites (political and economic) dominate decision-making. This aligns with established knowledge on how mainstream planning approaches (e.g., master planning) frequently overlook the priorities of the urban poor and impose utopian dreams that can destabilize fragile livelihoods (Watson 2014). For GEP, this insight carries lessons in terms of the risks of designing any urban intervention without sustained engagement with residents.

c) Unbounding

Unbounding refers to indeterminate problem boundaries where cause and effect relations cannot clearly be identified. Compound urban crises create unpredictable dynamics that cannot easily be understood using traditional conceptual problem frames or sectoral categories.

In this context, the CAS scholarship highlights "emergence," which describes how interactions between elements of a system produce completely new phenomena, whose origins cannot be traced back to constituent components (Railsback 2001). Emergent properties arise from self-organization, illustrating the notion that "the whole is different from […] the sum of the parts" (Jervis 1997: 13–14). Within policy studies, emergence explains the mechanisms that drive the contemporary democratic decline and the increasing trend toward right-wing populism (from Trump in the US, to Bolsonaro in Brazil and the rise of autocratic regimes in Poland and Hungary) (Wiesner et al. 2019). For example, the reinforcement of 'fake news' or extremist views by social media are generated through self-reinforcing processes that evade individual control and produce unintended consequences.

The CUS literature highlights how urban crises are produced through social construction and contestation. For example, advocates of the Black Lives Matters movement have argued that many black communities experience violence as an ongoing state of emergency (Anderson 2017). Naming systemic racism and everyday experiences of state oppression as a crisis builds recognition of an emergency that has long been systematically ignored. Likewise, the CUS literature draws attention to the constantly shifting framing of narratives around crises. For example, whereas policies to promote urban resilience are often portrayed as consensual, Borie et al. (2019) demonstrate how a range of conflicting narratives shape perceptions of resilience in Manila, Nairobi, and Cape Town.

Considering the concept of unbounding raises another set of challenges for GEP. What is a crisis? Who determines when there is a crisis and how to respond? International organizations play a key role in setting these norms (Finnemore and Sikkink 1998); however, it is difficult to ascertain whether they focus on the appropriate forms of disruption. For example, over the past two years, the world's attention has focused on the COVID-19 pandemic. Globally, an additional 97 million people are living on less than $1.90 per day due to the pandemic, representing the loss of three to four years of progress toward ending extreme poverty (Sánchez-Páramo et al. 2021). At the same time, lockdown measures have produced enormous negative impacts on livelihoods and health of workers in informal sectors (Kesar et al. 2021), thus questioning assumptions about who exactly is protected by such responses. There are no easy answers to the challenges of unbounding, but, fundamentally, the question of what counts as a crisis must be determined by communities experiencing threats to their safety and lives.

Port Harcourt is the capital of Rivers State and a major city in the Niger Delta region of Nigeria, with an estimated population of over 1.8 million (OECD/SWAC 2020). As the oil and gas hub of Nigeria, it has experienced growth driven by rapid urbanization, leading to the proliferation of informal settlements in the waterfront areas that fringe the city. These waterfront communities have been propagated by informal infilling of the swampy land with solid waste and thick fibrous mud, called chicoco mud, cut from the mangroves. The vulnerability of Port Harcourt's waterfront communities and the inability of local authorities to consider their concerns illustrate both unevenness and unbounding.

The conditions of these communities illustrate unevenness, through the reproduction of historical forms of exploitation and marginalization. These communities, housing over 480,000 people, have been hard-hit by the environmental damage caused by decades of regional hydrocarbon extraction (Theis et al. 2009). As the ownership of these waterfront areas is heavily contested, these communities also regularly face the threat of forced evictions, with several large-scale demolitions taking place in 2009, 2012, 2016, and 2022. These communities carry out infrastructure improvements, including upgrading of electrical poles, roads, and drainage, mostly without government support or interventions. But they struggle to address citywide systematic issues such as sanitation and flooding. Communities have no choice but to address flooding issues largely at the individual or household level. Communities sometimes undertake collective adaptation actions, such as community gutter cleaning efforts or managing flooding issues with berms and nets (Greenwalt et al. 2020). But, flooding, like many other impacts of climate change, requires a systematic approach, considering enduring inequalities and experiences of unheard voices. These impacts of climate change, if not addressed, will lead to more extreme conditions affecting even more strongly an already vulnerable and marginalized population.

Through contestation of knowledge and struggle to claim narratives of risk, the communities of Port Hartcourt also demonstrate the challenge of unbounding. The Chicoco Collective, a youth-led volunteer platform for community voices, supports waterfront communities. It involves participatory urban development to create sustainable, community-driven media, advocacy, and human rights education programs via radio (Chicoco Radio), mapping, cinema, and music. Chicoco's work focuses on empowering marginalized community members to take hold of the narrative of their neighborhoods and challenge uneven development patterns. In a 2020 Chicoco study conducted in several waterfront communities, community members highlighted shared experiences attributed to climate change and the sense that its impacts are felt citywide, increasing in intensity and frequency, including challenges such as flooding. These challenges are well-documented through the community mapping team's household surveying and profiling efforts in waterfront communities. In several focus groups in the Igbisikalama waterfront community, residents emphasized that they had experienced worsening flooding issues after upland roads were paved and drainage was channeled into their community. Many communities have stressed that they have tried to reach out to the government or relevant stakeholders to address these issues, but have not received any support. In response, the Chicoco Mapping team has led "Encounter and Exchange" programs, which bring together community members, civil society organizations, and government representatives in a solution-focused discussion around mapping data. These discussions are important because they uniquely gather entities with historically antagonistic relationships and engage them on an even platform in the communities of interest. Yet, despite their initial success, follow-ups from appropriate government agents and policymakers remain limited.

Box 2: An example of unevenness and unbounding: waterfront communities in Port Harcourt

Implications of compound urban crises for GEP

In this chapter, we use the term "compound urban crises" to highlight how escalating ecological crises and contemporary socio-political disruption are being acutely experienced at the city level. These turbulences are not simply conceptual; they are already dramatically affecting the everyday lives of citizens and their destabilizing impacts are layered upon embedded inequalities and precarity. The complexity and ethical concerns of these interconnected crises unfolding across temporal, scalar, and sectoral dimensions create difficulties in apprehending the nature of urban challenges and designing appropriate responses. However, through our analysis, we have begun to formulate a research agenda for GEP related to the three governance challenges of unsettlement, unevenness and unbounding. This highlights: (a) the interconnections between global dynamics and the politics of urban precarity; (b) the reproduction of structural injustice in cities; (c) and the need for critical interrogation of

problem framings and paradigms of urban governance promoted by international organizations, to highlight potential areas of necessary reform.

Further, we suggest that a dialogue between CAS and CUS underscores three principles for rethinking assumptions in GEP. **First, CUS perspectives help to recognize political dimensions of systems analyses.** Complexity theory and other systems studies that inspire GEP have been treated rather instrumentally. Some see complexity approaches as a set of common principles (Mitchell 2009; Boulton, Allen, and Bowman 2015), while others characterize them as a method to encourage pragmatism (Le Prestre 2017). The encounter with CUS makes it clear that systems dynamics are intricately related to sociopolitical concerns. Just as the personal is political, and as knowledge is political, we suggest that complexity needs also to be understood as political, replete with contextual diversities, tensions, and contestations.

Second, engagement with CAS entails the principles of humility, precaution, and openness (Cudworth and Hobden 2011). The control of systems is always an illusion (Meadows 2008). We may study systems and learn from them, but we can never predict or manage them. However, in the context of a global climate and biodiversity crisis, unpredictability cannot lead to action paralysis. Instead, the international policy community needs to consider strategies through which uncertainty *informs* action. This means that scholars and policymakers need to accept and embrace uncertainty when designing and implementing urban interventions. To change paths when unintended consequences occur, flexibility, adaptability, and learning may be embedded in the design of interventions promoted by international organizations (Young 2017). An experimental governance approach, using pilot projects and monitoring that allow for mid-course corrections, could deliver higher levels of flexibility or adaptability. Thinking in terms of pathways or trajectories calls for reflexive policymaking, but also recognition of the experiential as a site of expertise.

Third, in a globalized world in which political, social, and economic processes are linked, compound urban crises remind us that local contexts, experiences, and knowledge matter (Le Prestre 2017). We therefore advocate **forms of urban governance that privilege, and are themselves grounded in, knowledge pluralism and coproduction processes**. Acknowledging the complexity of implementing effective participatory processes raises the question: are such forms of governance an illusory solution, especially for resource-strapped local governments? To the question "how can we include marginalized communities in participatory urban decision-making processes?", we counter with the question "how can we not?" The challenges generated by compound urban crises require a range of governance responses that take into account the experiences of citizens affected by turbulence. There is no alternative, and the stakes are high.

References

Anderson, Ben. 2017. Emergency Futures: Exception, Urgency, Interval, Hope. *The Sociological Review* 65 (3): 463–477.

Anguelovski, Isabelle, Linda Shi, Eric Chu, Daniel Gallagher, Kian Goh, Zachary Lamb, Kara Reeve, and Hannah Teicher. 2016. Equity Impacts of Urban Land Use Planning for Climate Adaptation: Critical Perspectives from the Global North and South. *Journal of Planning Education and Research* 36 (3): 333–348.

Bakke, Gretchen. 2016. *The Grid: The Fraying Wires Between Americans and Our Energy Future*. New York and London: Bloomsbury.

Biermann, Frank, and Philipp Pattberg, eds. 2012. *Global Environmental Governance Reconsidered*. Cambridge, MA: The MIT Press.

Borie, Maud, Mark Pelling, Gina Ziervogel, and Keith Hyams. 2019. Mapping Narratives of Urban Resilience in the Global South. *Global Environmental Change* 54: 203–213.

Boulton, Jean G., Peter M. Allen, and Cliff Bowman. 2015. *Embracing Complexity: Strategic Perspectives for an Age of Turbulence*. New York: Oxford University Press.

Chan, Sander, and Pieter Pauw. 2014. *A Global Framework for Climate Action: Orchestrating Non-State and Subnational Initiatives for More Effective Global Climate Governance*: Discussion Paper.

Cudworth, Erika, and Stephen Hobden. 2011. *Posthuman International Relations: Complexity, Ecologism and Global Politics*. London: Zed.

Decarb City Pipes 2050. EU Horizon 2020 research project, accessed January 6, 2022. https://decarbcitypipes2050.eu/.

Dryzek, John S. 2016. Institutions for the Anthropocene: Governance in a Changing Earth System. *British Journal of Political Science* 46 (4): 937–956.

Finnemore, Martha, and Kathryn Sikkink. 1998. International Norm Dynamics and Political Change. *International Organization* 52 (4): 887–917.

Gay, Robert, Caroline Moser, Janice Perlman, Asef Bayat, Jo Beall, Mariano Aguirre, Owen Crankshaw, and Susan Parnell. 2013. *Megacities: The Politics of Urban Exclusion and Violence in the Global South*. London: Zed.

Government of the Islamic Republic of Afghanistan. 2015. The State of Afghan Cities 2015. Kabul: GoIRA.

Graham-Harrison, Emma. 2021. Afghanistan: With the US Gone, How Soon Will the Taliban Show Their True Colours? *The Guardian*. https://www.theguardian.com/world/2021/aug/28/afghanistan-with-the-us-gone-how-soon-will-the-taliban-show-their-true-colours.

Greenwalt, Julie, Michael Dede, Ibinabo Johnson, Prince Nosa, Abi Precious, and Barbara Summers. 2020. Climate Change Adaptation and Community Development in Port Harcourt, Nigeria. In *African Handbook of Climate Change Adaptation*, edited by Leal Filho, Walter, Nicholas Oguge, Desalegn Ayal, Lydia Adeleke, and Izael Da Silva. Cham: Springer.

Hoegh-Guldberg, Ove, Daniela Jacob, Michael Taylor, Marco Bindi, Sally Brown, Ines Camilloni, Arona Diedhiou, Riyanti Djalante, Kristie L. Ebi, Francois Engelbrecht, Joel Guiot, Yusuaki Hijioka, Shagun Mehrotra, Antony Payne, Sonia I. Seneviratne, Adelle Thomas, Rachel Warren, and Guangsheng Zhou. 2018. Impacts of 1.5ºC Global Warming on Natural and Human Systems. In *Global Warming of 1.5°C*. An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty. Intergovernmental Panel on Climate Change.

ILO (International Labour Organization). 2018. *Women and Men in the Informal Economy: A Statistical Picture* (third edition). Geneva: International Labour Office.

Jervis, Robert. 1997. *System Effects: Complexity in Political and Social Life*. Princeton: Princeton University Press.

Kesar, Surbhi, Rosa Abraham, Rahul Lahoti, Paaritosh Nath, and Amit Basole. 2021. Pandemic, Informality, and Vulnerability: Impact of COVID-19 on Livelihoods in India. *Canadian Journal of Development Studies/Revue canadienne d'études du développement* 42 (1–2): 145–164.

Le Prestre, Philippe. 2017. *Global Ecopolitics Revisited: Towards a Complex Governance of Global Environmental Problems*. New York: Routledge.

Meadows, Donella H. 2008. *Thinking in Systems: A Primer*. White River Junction: Chelsea Green Publishing.

Mitchell, Melanie. 2009. *Complexity : A Guided Tour*. New York: Oxford University Press.
Mollinga, Peter P. 2008. The Rational Organisation of Dissent: Boundary Concepts, Boundary Objects and Boundary Settings in the Interdisciplinary Study of Natural Resources Management. *ZEF Working Paper Series*. Bonn: University of Bonn.
Molotch, Harvey, and John Logan. 1984. Tensions in the Growth Machine: Overcoming Resistance to Value-Free Development. *Social Problems* 31 (5): 483–499.
Njoh, Ambe J. 2008. Colonial Philosophies, Urban Space, and Racial Segregation in British and French Colonial Africa. *Journal of Black Studies* 38 (4): 579–599.
OECD/SWAC. 2020. Africapolis. Accessed February 11, 2020. www.africapolis.org.
Orsini, Amandine, Philippe Le Prestre, Peter M. Haas, Malte Brosig, Philipp Pattberg, Oscar Widerberg, Laura Gomez-Mera, Jean-Frédéric Morin, Neil E. Harrison, Robert Geyer, and David Chandler. 2020. Forum: Complex Systems and International Governance. *International Studies Review* 22 (4):1–31.
Pérez, María Carrascal, Plácido González Martínez, Laida Memba Ikuga, Alejandro Muchada Suárez, Pablo Rabasco Pozuelo, and Pablo Sendra Fernández. 2015. Crossed Colonization. Houding Development in Urban Peripheries. In Carlos Nunes Silva, ed., *Urban Planning in Sub-Saharan Africa: Colonial and Post-Colonial Planning Cultures*. New York: Routledge: 180–200.
Picker, Giovanni. 2017. *Racial Cities: Governance and the Segregation of Romani people in Urban Europe*. New York: Routledge.
Railsback, Steven F. 2001. Concepts from Complex Adaptive Systems as a Framework for Individual-based Modelling. *Ecological modelling* 139 (1): 47–62.
Sánchez-Páramo, Carolina, Ruth Hill, Daniel Gerszon Mahler, Ambar Narayan, and Nishant Yonzan. 2021. COVID-19 Leaves a Legacy of Rising Poverty and Widening Inequality. October 07. https://blogs.worldbank.org/developmenttalk/covid-19-leaves-legacy-rising-poverty-and-widening-inequality.
Shokry, Galia, James J. T. Connolly, and Isabelle Anguelovski. 2020. Understanding Climate Gentrification and Shifting Landscapes of Protection and Vulnerability in Green Resilient Philadelphia. *Urban Climate* 31: 100539.
Silver, Jonathan. 2021. Decaying Infrastructures in the Post-Industrial City: An Urban Political Ecology of the US Pipeline Crisis. *Environment and Planning E: Nature and Space* 4 (3): 756–777.
Sovacool, Benjamin K, Andrew Hook, Mari Martiskainen, Andrea Brock, and Bruno Turnheim. 2020. The Decarbonisation Divide: Contextualizing Landscapes of Low-Carbon Exploitation and Toxicity in Africa. *Global Environmental Change* 60: 102028.
Stehle, Fee. 2021. Governing Climate Change: Polycentricity in Action? *Global Environmental Politics* 21 (1): 157–159.
Syed, Anwar Ali Shah G, Muhammad Aslam Memon, Ali Hassan Halepoto, and Faiz M Shaikh. 2012. Global Financial Crisis in South Asia and its Impact on Pakistan's SMEs Sector by Using CGE Model. *Journal of Asian Business Strategy* 2 (4): 84–88.
Theis, Mike, Tony Lloyd-Jones, Samuel Adenekan, Simon Gusah, Malcolm Moor, Dominic Gusah, and Budhi Mulyawan. 2009. *Port Harcourt Waterfront Urban Regeneration: Scoping Study*. London: Max Lock Centre, University of Westminster.
UNDP (United Nations Development Programme). 2021. 97 Percent of Afghans Could Plunge into Poverty by mid 2022, Says UNDP.
United Nations Population Division. 2018. Urban Population (% of Total Population)—Afghanistan. World Urbanization Prospects. 2018 Revision.
Watson, Vanessa. 2014. African Urban Fantasies: Dreams or Nightmares? *Environment and Urbanization* 26 (1): 215–231.
Watts, Mark. 2017. Cities Spearhead Climate Action. *Nature Climate Change* 7 (8): 537–538.

Westman, Linda, James Patterson, Rachel Macrorie, Christopher J. Orr, Catherine M. Ashcraft, Vanesa Castán Broto, Dana Dolan, Mukesh Gupta, Jeroen van der Heijden, Thomas Hickmann, Robert Hobbins, Marielle Papin, Enora Robin, Christina Rosan, Jonas Torrens, and Robert Webb. 2022. Compound Urban Crises. *Ambio* 51: 1402–1415.

Wiesner, K., A. Birdi, T. Eliassi-Rad, H. Farrell, D. Garcia, S. Lewandowsky, P. Palacios, D. Ross, D. Sornette, and K. Thébault. 2019. Stability of Democracies: A Complex Systems Perspective. *European Journal of Physics* 40: 014002.

Young, Oran R. 2017. *Governing Complex Systems: Social Capital for the Anthropocene*. Cambridge, MA: The MIT Press.