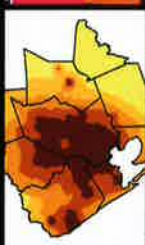
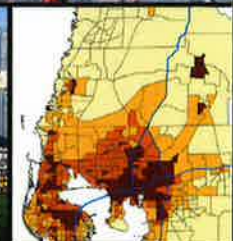
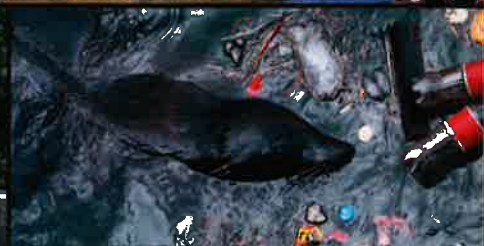


ROUTLEDGE

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HANDBOOKS



The Routledge Handbook of Environmental Justice

Edited by Ryan Holifield, Jayajit Chakraborty
and Gordon Walker

THE ROUTLEDGE HANDBOOK OF ENVIRONMENTAL JUSTICE

The Routledge Handbook of Environmental Justice presents an extensive and cutting-edge introduction to the diverse, rapidly growing body of research on pressing issues of environmental justice and injustice. With wide-ranging discussion of current debates, controversies, and questions in the history, theory, and methods of environmental justice research, contributed by over 90 leading social scientists, natural scientists, humanists, and scholars from professional disciplines from six continents, it is an essential resource both for newcomers to this research and for experienced scholars and practitioners.

The chapters of this volume examine the roots of environmental justice activism, lay out and assess key theories and approaches, and consider the many different substantive issues that have been the subject of activism, empirical research, and policy development throughout the world. The *Handbook* features critical reviews of quantitative, qualitative, and mixed methodological approaches and explicitly addresses interdisciplinarity, transdisciplinarity, and engaged research. Instead of adopting a narrow regional focus, it tackles substantive issues and presents perspectives from political and cultural systems across the world, as well as addressing activism for environmental justice at the global scale. Its chapters do not simply review the state of the art, but also propose new conceptual frameworks and directions for research, policy, and practice.

Providing detailed but accessible overviews of the complex, varied dimensions of environmental justice and injustice, the *Handbook* is an essential guide and reference not only for researchers engaged with environmental justice, but also for undergraduate and graduate teaching and for policymakers and activists.

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1

INTRODUCTION

The worlds of environmental justice

Ryan Holifield, Jayajit Chakraborty and Gordon Walker

Introduction

Although some three decades have passed since the term *environmental justice* began mobilizing activists and making headlines – along with related terms like *environmental racism*, *environmental equity*, and *environmental inequality* – the conditions it names remain just as relevant today. During the period of time when we were compiling the chapters for this handbook, the US city of Flint, Michigan attracted international media attention for its lead-contaminated drinking water (also see the special issue of *Environmental Justice*, volume 9, issue 4). If the concepts of environmental justice and environmental racism had faded somewhat from North American public discourse and consciousness in recent years, the Flint water crisis brought them decidedly – and distressingly – back in. Flint has a majority African American population and a notoriously high rate of poverty, and the toxic burden of the lead pollution fell disproportionately on low-income African American children and their families. This distributive injustice was compounded by egregious procedural injustice, as residents' concerns about the highly corrosive water were repeatedly dismissed by state officials, several of whom subsequently received indictments for misconduct in office, tampering with evidence, and other criminal offences. Moreover, the Flint water crisis is by no means an isolated incident or an anomaly. As this book goes to press, the rallying cry of environmental justice can be heard in protests of the Dakota Access Pipeline in the Standing Rock Sioux Reservation (North Dakota, US), in the closure of London's City Airport by activists from Black Lives Matter UK, in the Ecuadorean president's call to institute an international court of environmental justice, and in countless lower-profile community struggles throughout the world.

Environmental problems, from water and pollution to biodiversity loss and global warming, have the capacity to affect all of us. However, as the Flint water crisis and other contemporary struggles so starkly remind us, they do not affect us all equally, or in the same ways. Nor do we have equal power to decide solutions to these problems, or to take the necessary action to solve them. This unequal and differentiated positioning, which typically places the heaviest environmental burdens upon marginalized, disadvantaged, and less powerful populations, forms the central premise of the problem of environmental injustice and the hope for environmental justice as its solution.

The aim of this handbook is to present a broad overview of the diverse, rapidly growing body of research on issues of environmental justice and injustice, both to introduce new

scholars to the field and to help orient the agendas of experienced researchers. From its origins in grassroots activism and engaged sociological scholarship, primarily in the US, environmental justice (EJ) research has generated what is now a vast, multi-disciplinary literature encompassing a wide range of issues and politics in countries throughout the world. Initially focused on environmental hazards and pollution, the scope of EJ activism and research has now expanded to encompass almost everything that is unsustainable about the world, including rampant industrialization, resource depletion, energy use, consumption patterns, food systems, access to environmental amenities, and public policies that adversely affect minority, Indigenous, and low-income communities, other vulnerable groups such as disabled, immigrant, and linguistically isolated populations, as well as future generations.

Although this handbook is intended for a wide variety of audiences, from academics and students to practitioners, policymakers, and activists, we need to be clear from the outset that it is not a handbook of political tactics, community-organizing strategies, legal solutions, or best practices for public policy. These topics would no doubt require handbooks of their own, with a rather different set of authors. The purpose here, in keeping with the objectives of the Routledge handbook series, is more modest and narrowly focused: to present an introduction, guide, and reference to current debates, controversies, and questions in academic EJ research.

Of course, as EJ scholarship has spread to countries and regions throughout the world (Walker & Bulkeley 2006; Carmin & Agyeman 2011; Schroeder et al. 2008; Reed & George 2011), this academic literature has now become so large and diverse that no single handbook could cover it in its entirety. Although we have sought to present the topic with as much breadth as feasible, constraints of space and time make it impossible to be exhaustive and comprehensive. In addition, EJ continues to evolve as a concept and as a research agenda, and to some extent this handbook will inevitably be limited to presenting a snapshot of the field at one particular point in time. As we have put the handbook together new papers have appeared that seek to challenge received wisdoms in EJ research and push in new directions – see, for example, Velicu and Kaika (2015); Jamal and Hales (2016); and Mennis et al. (2016). However, despite these limitations, we challenged our authors not only to introduce and critically assess the current state of the art, but also to set an agenda for the future. In our view, the *Handbook* also makes it clear that the present moment is particularly rich and important for EJ research. For one thing, it is no longer a new field; it has had time to develop and evolve, in multiple contexts and directions. EJ scholarship now engages with and contributes to a wide array of social, political, legal, ethical, and geographical theories. It draws on and helps advance an increasingly sophisticated and diverse collection of methodological approaches. Finally, it addresses a growing variety of substantive issues in an expanding range of geographic settings.

The objective of the *Handbook* is to provide a critical introduction to these theories, approaches, issues and contexts, with a focus on what makes each distinctive. For example, quantitative, qualitative and mixed methodological approaches of various kinds, as well as different disciplinary or transdisciplinary perspectives, allow us to ask and answer distinctive questions and provide different insights about EJ. The same goes for different substantive issues; for instance, such problems as toxic waste, air pollution, depletion or degradation of water resources or threats to biodiversity – each present distinctive injustices, and for each the meaning of EJ may look slightly different. Moreover, as much prior work has now shown, the meanings and dimensions of EJ have undergone changes as the concept has travelled to different places. Theorists have argued that among the key distinguishing features of EJ are its plurality and multivalence (Schlosberg 2007; Walker 2012), and we have sought in the *Handbook* to emphasize and elaborate this remarkable pluralism. This extends to our roster of contributing authors, which includes social scientists, natural scientists, humanists

and academics from law, public health, planning and other professional disciplines, recruited from almost every continent.

In the remainder of this chapter, we begin by briefly situating EJ research with respect to its historical origins and key premises. We follow this with an introduction to the structure and themes of the volume, closing with a call for renewed commitment to research dedicated to both critically engaging with environmental injustice, and advancing its eradication.

Situating environmental justice research

Origins

In the US, the most widely recognized landmarks of the pioneering stage of environmental justice research were published during the 1980s, prompted by instances of grassroots activism. These include sociologist Robert Bullard's (1983) classic study of the distribution of solid waste sites among communities of colour in Houston, Texas, as well as a regional study by the US General Accounting Office (1983) to follow up on issues raised in historic protests against the siting of a hazardous waste dump in Warren County, North Carolina. Such work set the stage for a national-scale investigation by the United Church of Christ's (UCC) Commission on Racial Justice (1987), which found the presence of hazardous waste facilities and toxic waste sites to be significantly associated not only with lower household income and housing values, but above all with higher percentages of people of colour. The UCC analysis both inspired new studies – some of which challenged its findings and others which supported them – and helped bring environmental racism and injustice to the federal agenda by the early 1990s (see, e.g., Bryant & Mohai 1992).

Since that time, the research literature on EJ has grown and diversified tremendously, and it has become the central focus of entire journals, such as *Environmental Justice* and *Local Environment*. Within the academy, EJ research has never been confined to a single discipline, and as a result it has invited diverse methodological and theoretical approaches and perspectives. In the US, sociologists such as Robert Bullard, Bunyan Bryant, Paul Mohai, and Beverly Wright played central roles both in setting the research agenda and applying this research to influence public policy (Cable et al. 2005). A crucial part of this agenda – to which geographers, economists, legal scholars, political scientists, historians, public health scientists, urban and regional planners, ecologists and others have also made key contributions – has always been the quantitative and spatial analysis of distributive EJ. Other sociologists, later joined by anthropologists, environmental historians, geographers, political scientists, and scholars from fields such as communication, rhetoric, literature, women's studies and gender and sexuality studies, ethnic studies, and American studies, produced some of the pioneering studies of EJ as a social movement and discourse (e.g. Čapek 1993; Taylor 2000). Qualitative approaches to research, including ethnographic, archival, and cultural studies methods, have been particularly prominent in this tradition. Interdisciplinary and transdisciplinary projects have also become increasingly important, involving collaborations both among academic disciplines and between academics and non-academics. Accompanying this methodological pluralism has been a remarkable geographic diffusion of EJ research, which, as this *Handbook* makes evident, has now become common in countries throughout the world.

The meanings of environmental justice

The terms *environmental justice* and *environmental injustice* have always resisted straightforward definition (Holifield 2001; Schlosberg 2007; Phillips & Sexton 1999; Sze & London 2008).

This is in part because they serve a variety of functions; for example, they can serve as descriptive terms for observable or measurable states of affairs, as normative terms condemning present conditions and naming desired outcomes for the future, or as political terms deployed to name substantive problems and antagonists, mobilize activism, and justify advocacy for particular policies and laws (Walker 2012). Initially associated most prominently with inequitable distributions of waste and pollution, the terms have also come to encompass a wide variety of substantive problems, struggles and aspirations. The classic document *Principles of Environmental Justice*, a product of the 1991 First National People of Colour Environmental Leadership Summit in Washington, DC, exemplifies this broad scope, addressing issues ranging from protection from hazardous waste and nuclear testing to self-determination and opposition to military occupation. As EJ terminology has spread spatially and evolved temporally, it has taken on new political meanings, embracing still more issues and aspirations depending on the particular contexts (Walker 2009; Schroeder et al. 2008; Sikor 2013). With this expansion of meaning, the question of “justice for whom” has also become more complicated. In some settings, such as politics and policy in the US, the language of EJ has traditionally focused on racialized minority groups and low-income populations. But the term’s diffusion in other settings has raised questions about whether other groups of people might also be considered victims of environmental injustice – and indeed, whether EJ and injustice are also terms that should be extended to nonhumans (see, e.g., Schlosberg 2007).

In addition to engaging with its multiple definitions, scholars have increasingly addressed and theorized the multidimensionality of the justice in environmental justice. In addition to *distributive* justice, which remains a key focus of much quantitative and spatial analysis, a growing body of literature now attends to *procedural* and participatory justice, justice as *recognition*, and justice as *capabilities*, as well as the interrelations among these dimensions (Schlosberg 2007; Walker 2012).

Structure and rationale of the volume

The process of editing this handbook reminded us that it is impossible, even in a large volume, to do full justice to environmental justice. We had neither an infinite word count nor an infinite timeline to work with, and the authors we invited or considered had constraints of their own. We sought to capture as much of the breadth of the field as possible, but we realized early in the process that there would inevitably be omissions. One reviewer of the book proposal, for example, suggested that the volume include the following, whether as chapters or as topics: “weapons production and war, biotechnology, nanotechnology, nuclear power, green energy and biofuels, peak oil and oil vulnerability, green infrastructure, mining, farm chemicals, obesity and food deserts, natural hazards (e.g. earthquakes), urban agriculture and community gardens, industrial ecology, asbestos, medical technology, bio-prospecting and coal seam gas/shale oil.” Some of these issues feature in the book; others unfortunately do not. All of these topics are worthwhile and important, but some of them are still emerging as EJ issues – perhaps in a few years they will be essential to a new volume or edition.

The same goes for regions of the world. As hard as we tried to represent every corner of the globe, there was not enough room to include all of the places in which EJ activism and scholarship are taking place. In addition, in some locations – above all, the US – EJ is a well-established field with numerous active scholars, while in others it is still in its infancy. We regretted, for example, that we could not include chapters devoted to Pacific Island states – facing unique threats to their existence in climate change – to the former Soviet states of northern Asia, or to the countries of northern Africa, the Middle East, and western Asia

(see, e.g., Kuletz 2002; Omer & Or 2005; Agyeman & Ogneva-Himmelberger 2009). Even within continents or regions represented in the *Handbook*, we had to exclude far more than we wanted; sub-Saharan Africa, for example, has seen a blossoming of EJ scholarship in recent years to which this volume unfortunately cannot do justice (see, e.g., Myers 2008; Tschakert 2009; Margai & Barry 2011; Makene et al. 2012; Martin et al. 2014; Kubanza & Simatele 2016). In other cases, such as Latin America and South Africa, excellent book-length collections have already been produced (McDonald 2002; Carruthers 2008). For these reasons, readers should view the sections and chapters as representative rather than comprehensive.

The volume consists of four main parts. Part I begins with a chapter by Laura Pulido, who combines a reflection on her personal history with EJ with an argument for increased attention to the implications of changing racial formations for the efficacy and potential of the movement. It then works through key theories and approaches informing EJ scholarship, covering different perspectives on the dimensions of EJ, theories that bring specific insights into the production of injustice, and analytical frameworks that have been applied to revealing the tactics and strategies of activist work.

The first section within Part I presents discussions of a range of theories relevant to the analysis of EJ as a movement and phenomenon. Two chapters focus on dimensions of *social movement theory*, as applied to analysis of EJ movements. Dianne Sicotte and Robert Brulle present a broad overview of the different varieties of social movement theory that have informed EJ scholarship, from the field's origins to the more recent emergence of transnational and climate justice movements. David Pellow then focuses on one framework within social movement theory, arguing for a model of *political opportunity structures* more attentive to race and gender, the role of the nonhuman, and opportunities beyond the state. The following subsection introduces a set of contrasting approaches to explaining and addressing environmental injustices. William Bowen assesses the prospects of *rational choice theory*, an approach prominent in economics and related disciplines, arguing that formal approaches to rationality focused on utility maximization must be replaced in EJ analysis by explicitly normative approaches more attentive to the complexity of human behaviour. Daniel Faber presents an analysis of EJ based in *radical political economic theory*, which undergirds much EJ research in other social science disciplines, focusing on the ways in which capitalism constrains the mobility of disempowered populations in ways that make them the most vulnerable to ecological hazards. Greta Gaard considers the wide-ranging contributions of *feminist theory* to EJ analysis and practice, from the under-recognized importance of women's movements in the history of environmentalism to the present-day need within the climate justice movement to identify vulnerabilities associated with multiple, intersecting axes of difference – gender, sexuality, race and ethnicity, age, ability, and others. Gwen Ottinger then introduces *science and technology studies* (STS) approaches to EJ; these not only reveal ways that practices and infrastructures of conventional scientific knowledge production condition and constrain efforts to attain EJ, but also illuminate the potential of alternatives, such as community-based science and scientist-activism, to address environmental injustices more comprehensively and democratically.

The second half of Part I focuses on different dimensions of EJ as a normative concept in theory and practice, building and expanding on David Schlosberg's (2007) framework and considering how these dimensions relate to each other. Derek Bell and Jayne Carrick begin with an analysis of the complexities of *procedural EJ* in both theory and professional practice, proposing a framework for "assessing the relative injustice of actual environmental institutions". Kyle Whyte follows with a chapter devoted to *recognition* as a dimension of EJ, arguing that it calls for deeper consideration of resilience as a criterion for justice. An understanding of

justice that has received less attention in EJ scholarship to this point is the *capabilities approach* (as developed by Amartya Sen and Martha Nussbaum), and Rosie Day argues that this can provide a rich framework for making explicit links between environmental issues and multi-dimensional human wellbeing. Next, Sheila Foster considers how equality in environmental decision-making – which in the US neither antidiscrimination law nor environmental regulation has adequately addressed – might be better served by analysis of *vulnerability*. As Kerri Woods contends in the subsequent chapter, the rising prominence of environmental issues in the theory and practice of human *rights* is also transforming our understanding of relationships between human and nonhuman nature with important implications for EJ. The final chapter in the section, by Ulrika Gunnarsson-Östling and Åsa Svenfelt, considers how justice figures in different sustainability discourses, and how the just sustainability framework provides one way to integrate EJ and sustainability.

Questions of method and methodology – the broad range of considerations about how to collect, analyse, interpret and apply data – have been central to EJ research throughout its history, and these constitute the focus of Part II. The chapters in this section consider quantitative, qualitative and mixed methods, and collectively they address many of the greatest challenges for conducting quantitative EJ research: addressing the distinctive statistical complexities associated with spatial data, disentangling causal processes underlying patterns of injustice, characterizing relationships between environmental hazards or amenities and their human health impacts, establishing appropriate relationships between researchers and communities, and implementing transdisciplinary partnerships. The first three focus on spatial and statistical methods for analysing geographic distributions of people and environmental risks. Jayajit Chakraborty begins the section by tracing the evolution of quantitative approaches to assessing environmental exposure and risk, highlighting both their increasing sophistication and the key challenges that remain. One of the persistent challenges in quantitative EJ analysis is estimating population counts and demographic characteristics in environmentally burdened or deprived areas, and the next chapter by Juliana Maantay and Andrew Maroko describes and compares the strengths and limitations of the most prominent estimation techniques. Another methodological challenge is that spatial data violate the assumptions of conventional statistical techniques; this has required the development and application of an array of distinctive spatial statistical methods in EJ research, reviewed and assessed in the subsequent chapter by Jeremy Mennis and Megan Heckert.

Other questions in EJ research have lent themselves to qualitative or mixed methods, the focus of the next four chapters in Part II. To address questions about the processes underlying present-day patterns of environmental inequality, EJ researchers have turned to archival, ethnographic, or longitudinal methods of historical analysis, critically evaluated by Christopher Boone and Geoffrey Buckley. With respect to the experience and politics of environmental injustice, Catalina de Onís and Phaedra C. Pezzullo contend that ethnographic methods have been of particular importance, because of both their ethical commitment to dialogue between researchers and participants and their attention to embodiment and experiential knowledge. Donna Houston and Pavithra Vasudevan introduce approaches to EJ grounded in cultural studies, focusing on the analysis of storytelling as a central practice in EJ activism and scholarship. The challenges of using mixed methods are perhaps at their most acute in interdisciplinary and transdisciplinary EJ research, as Jonathan London, Julie Sze and Mary Cadenasso demonstrate in their critical reflection on the strengths and difficulties associated with different approaches to collaboration across disciplines.

The last three chapters in Part II review innovations in some of the most important methods for assessing and helping to address health risks and other burdens facing disproportionately

affected communities. One such method is cumulative risk assessment (CRA); as Ken Sexton and Stephen Linder show, CRA carries much promise for providing a more rigorous basis for policy decisions than traditional risk assessment, but it remains a framework very much in development. Other methods aim explicitly to transfer greater control over the research process to affected communities themselves, and the chapter by Sacoby Wilson, Aaron Aber, Lindsey Wright and Vivek Ravichandran assesses the potentials and pitfalls of a range of models for community-based participatory research. To close out the section, Muki Haklay and Louise Francis examine how two of these models – participatory geographic information systems (GIS) and citizen science – can be combined and applied in addressing community concerns about environmental justice and sustainability.

Part III shifts the focus to the many different substantive issues that have been the subject of EJ activism, empirical research, and policy development. Although all of these chapters deal with cross-cutting themes, we have arranged them loosely into three groups. The first group of chapters addresses some of the key environmental problems at the heart of concerns about environmental injustice, also considering their relationships with policy and practice. Troy Abel and Mark Stephan begin by introducing a framework that relates waves of research on toxic and hazardous waste disparities with the development of public policy in the US. Michael Buzzelli follows with a discussion of air pollution as an EJ issue, reflecting on the complications associated with both research design and the development of appropriate policy. Leila Harris, Scott McKenzie, Lucy Rodina, Sameer Shah, and Nicole Wilson provide a wide-ranging review of approaches to EJ concerns surrounding freshwater, considering disparities in water quality and access along the axes of gender and indigeneity, as well as the intersections of race, income, and other categories. In the next chapter, Timothy Collins and Sara Grineski find that flood hazards complicate the assumptions and approaches of conventional distributive EJ research in surprising ways, and they introduce a conceptual framework to attend to the distinctiveness of risks and inequities associated with flooding. This section concludes with a chapter by Philip Coventry and Chukwumerije Okereke on the justice dimensions of what has become the most prominent international environmental issue of our time – global climate change – examining the intertwined ways in which they have developed in scholarship, activism, and policy.

The second group within Part III highlights some of the economic activities associated with environmental injustice, dealing with aspects of production, consumption, and distribution. First, Leire Urkidi and Mariana Walter lay out a framework for the study of EJ and large-scale metal mining, reviewing the complexities of its biophysical, economic, and political aspects. The following chapter, by Karen Bickerstaff, considers the relations of distributive, procedural, and recognition justice dimensions within low carbon energy systems, focusing on the controversial case of nuclear power. Next, Alex Karner, Aaron Golub, Karel Martens, and Glenn Robinson provide a critical overview of EJ and transportation, emphasizing inequities in participation in planning processes, exposure to environmental burdens, and access to benefits and amenities. Alison Alkon traces the roots of food justice, which links EJ's emphasis on the inequitable distribution of benefits and harms with alternative agriculture's critique of industrial food systems and food scholarship's critical reflections on the links between food and identity. A final cross-cutting economic theme considered here is environmental crime, and Michael Lynch and Kimberly Barrett emphasize scholarship examining how criminal activity that harms nonhumans has intersected with conditions of environmental injustice for humans.

As the EJ movement has evolved and diversified, its focus on the inequitable impacts of waste and pollution has broadened to encompass a host of environmental "goods" as well,

including amenities like parks and greenspace, along with efforts to protect and preserve biodiversity and wilderness. This theme unites the last three chapters in Part III. Jason Byrne reviews scholarship on the EJ dimensions of urban parks and greenspace, considering not only dimensions of activism and policy but also intersections with climate injustice, food insecurity, and ecosystem services. In a closely related chapter focused on planning and community development, Isabelle Anguelovski, Anna Brand, Eric Chu, and Kian Goh examine injustices associated with urban greening – such as ecological gentrification – and discuss emerging cases of resistance to inequitable approaches to urban sustainability. Finally, moving outside the urban realm, Maureen Reed and Colleen George consider EJ with respect to nature conservation and wilderness preservation, focusing on injustices and inequities associated with the establishment of biosphere reserves.

Part IV addresses the diverse geographic contexts of EJ, beginning with discussions of global and transnational concerns and themes and closing with a series of chapters focused on particular regions or countries. Among the key actors shaping patterns of environmental injustice at the global scale are multinational corporations, and Ruchi Anand begins the section with a discussion of these corporations and the distinctive legal and institutional context in which they operate. Leah Temper follows with a chapter about the global diversity of EJ activism, considering a set of common themes that both unite contemporary struggles and link them with historical environmental movements. Among the most important transnational EJ movements are movements organized around indigeneity, the shared focus of the next two chapters. A chapter by Alana Shaw provides an overview of Indigenous EJ scholarship, activism, and policy in the rapidly changing transnational region of the Arctic. Of course, Indigenous EJ activism also takes on unique valences in particular settings; in their contribution, Donna Green, Marianne Sullivan, and Karrina Nolan examine the issues distinctive to mining initiatives in Aboriginal Australia.

The remaining chapters, reflecting a range of different approaches, address research on EJ as it has emerged in other locales beyond the term's North American origins. The first group highlights three broad themes of significance to Latin America: borders, international alliances, and urbanization. The boundary between the US and Mexico, which by many definitions constitutes the northern border of Latin America, has become paradigmatic in the study of EJ issues distinctive to border regions in an era of globalization, and Sara Grineski and Tim Collins analyse this region using the lens of world systems theory. The broader region of Latin America and the Caribbean has recently hosted one of the world's most remarkable international alliances, among a set of countries with governments committed to the advancement of socialism; Karen Bell's chapter critically assesses the strengths and limitations of this alliance's policy approaches to achieving EJ. Finally, Latin America and the Caribbean has become one of the most urbanized regions in the world, and the chapter by Alexis Vásquez, Michael Lukas, Marcela Salgado, and José Mayorga reviews the growing scholarship on urban EJ issues in Chile – also one of the world's most urbanized countries.

In the second group, the chapters focus on either a single country or small groups of countries, highlighting the distinctive EJ issues that arise with their positions in a global economy. The first chapter, by Rhuks Ako and Damilola Olawuyi, reviews the unique politics of EJ surrounding oil production in the Niger Delta in Nigeria, where competing claims to justice have frequently been intertwined with violent conflict. This is followed by Patrick Bond's examination of South Africa and how involved 'sub-colonial' processes have served to produce and sustain environmental injustice through into the post-Apartheid period. The section closes with a look at one of the world's wealthiest countries, Australia; David

Schlosberg, Lauren Rickards, and Jason Byrne argue that its unique positioning, history, and circumstances have made it one in which place attachment has become particularly salient to EJ conflicts and struggles.

The final group of chapters is dedicated to Eurasia, the physiographic continent in which a large majority of the world's population lives; here the approach is to consider how diverse regions within the landmass are linked by shared EJ issues and concerns. Pratyusha Basu argues that in South and Southeast Asia, attention to EJ has been a product primarily of vibrant social movement struggle, and that this struggle has been defined heavily by divisions between growing urban areas and rural areas that remain heavily populated. Mei-Fang Fan and Kuei-Tien Chou examine EJ in several of the countries of Pacific East Asia, emphasizing how the uneven transition to democracy among these states has conditioned the dynamics of EJ politics in the region. Heike Köckler, Séverine Deguen, Andrea Ranzi, Anders Melin and Gordon Walker examine discourses of EJ as they have unevenly emerged in Western Europe, reviewing research that has focused on both patterns of distributional inequalities at national and regional scales, and public participation within the context of the Aarhus Convention. In the closing chapter, Tamara Steger, Richard Filčák, and Krista Harper consider the post-socialist context of Central and Eastern Europe, where dynamics of right-wing resurgence have intensified EJ issues for Roma communities.

Conclusion

The discourse of environmental justice continues to transform and evolve, and it is our hope that this *Handbook* will help set research agendas for the next generation of EJ scholarship. Thanks to the pioneering efforts of the first generation of EJ scholars in the 1980s and 1990s – themselves taking continual inspiration and cues from the tireless work of grassroots activists – we now have a rich and rigorous theoretical, methodological and empirical foundation from which to build.

Nonetheless, the persistence and proliferation of environmental injustices throughout the world demonstrate that tremendous challenges remain. For example, although research helped propel EJ to the US federal policy agenda in the early 1990s, and although the work of scientists played a central role in bringing attention to the environmental injustice of contaminated water in Flint, Pulido's chapter is a sobering reminder that producing knowledge of environmental injustices has too often fallen short in helping rectify them. As important as it has been to develop and refine normative and analytical theories of EJ, we must continue asking how we might apply these theories, not only to the shaping of laws and policies, but also to the growth of "best practices" in movement activism. We should continue striving to make our research methods ever more sophisticated, but we must not lose sight of the ultimate objective to create more fair and equitable environmental relations. Although we need to continue attending to the classic concerns of the EJ movement, we must continue listening as the discourse expands to encompass new issues. Finally, we must turn our attention not only to the contexts in which EJ discourse has only recently emerged, but also to the new transnational connections which EJ is enabling activists and policymakers to make. To put it bluntly, the goal for the future should be a world in which the achievement of environmental justice has made this handbook obsolete.

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