Book:
Castan Broto, V. and Westman, L. (2019) Urban Sustainability and Justice: Just Sustainabilities and Environmental Planning. Zed Books, London, (208pp). ISBN: 9781786994929.

https://doi.org/10.5040/9781350223776

JUST SUSTAINABILITIES

Urban Sustainability and Justice

Just Sustainabilities and Environmental Planning

Vanesa Castán Broto and Linda Westman

URBAN SUSTAINABILITY AND JUSTICE

JUST SUSTAINABILITIES: POLICY, PLANNING AND PRACTICE

Just Sustainabilities contributes to understanding, theorising and ultimately developing strategies towards the development of more just and sustainable communities in both the global North and South. Through a collection of solutions-orientated books, the series looks at policy and planning themes that improve people's quality of life and well-being, both now and into the future; that are carried out with an intentional focus on just and equitable processes, outputs and outcomes in terms of people's access to environmental, social, political and economic space(s); and that aim to achieve a high quality of life and well-being within environmental limits.

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JUST SUSTAINABILITIES AND ENVIRONMENTAL PLANNING

Vanesa Castán Broto and Linda Westman

BLOOMSBURY ACADEMIC
LONDON • NEW YORK • OXFORD • NEW DELHI • SYDNEY

BLOOMSBURY ACADEMIC
Bloomsbury Publishing Plc
50 Bedford Square, London, WC1B 3DP, UK
1385 Broadway, New York, NY 10018, USA
29 Earlsfort Terrace, Dublin 2, Ireland

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First published in Great Britain 2019

Cover design: Burgess and Beech
Cover image © Lianne Milton/Panos Pictures

A catalogue record for this book is available from the British Library.

ISBN: HB: 978-1-78699-492-9
PB: 978-1-7869-9493-6
ePDF: 978-1-7869-9494-3
eBook: 978-1-7869-9495-0

Series: Just Sustainabilities

Typeset in Plantin and Kievit by Swales & Willis Ltd, Exeter, Devon
Printed and bound by CPI Group (UK) Ltd, Croydon, CR0 4YY

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ACKNOWLEDGEMENTS

This book would have never come to fruition without the encouragement and support from Julian Agyeman. We would like to thank him for inspiring us, standing behind the project, and having a great sense of humour.

We would like to thank the team at ZED Books, especially Kim Walker, Megan Symons at Swales & Willis, and Louise Harvey of Chimney Design who made the lovely pictures. Thanks to the anonymous reviewers who provided thoughtful and insightful review comments.

The writing process was supported by the project Low Carbon Action in Ordinary Cities (LOACT), with funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme Grant Agreement No 804051 – LO-ACT – ERC-2018-STG.

During the last year of intensive writing, we have had incredible support from our colleagues at the Urban Institute in Sheffield, and the Faculty of Social Sciences. From the reassurances from the senior leadership team to the companionship and critical insights from our more junior colleagues, the UI is a delightful place to have meaningful debate and getting work done. During the last year, we have had the privilege to be part of exciting networks including the LO-ACT team, the agroecology groups working in the project Urbanising in Place (funded by the Joint Programming Initiative Urban Europe), and the international team of the project Knowledge in Action for Urban Equality (funded by the Global Challenges Research Fund). Our wonderful 'cities team' within the Intergovernmental Panel on Climate Change have also provided a forum in which some of the ideas in this book have been tested.

Since the aim of this book was to take stock of how our own thinking about urban sustainability and justice has changed over the years, the text reports insights of different projects and moments in our career. We feel it is impossible to make justice to all the people who have helped us to make the book possible. Any mistakes are, of course, just our own.

Finally, we need to pay homage to our families and friends, the people who remind us why we do what we do, and give us the courage to forget that we can fail. We love you all! And you have changed so much during the time

this book was written! As Vanesa's father retired, and Linda's granny passed the barrier of 100 years, we were reminded that, given the brief space we have on Earth, it is important to keep doing something you love.

1 | INTRODUCTION

1.1 Introduction

The Cuban singer-songwriter Silvio Rodríguez wrote a song called "The Fable of the Three Brothers" in 1979. The song tells the story of three brothers who went on their path to fortune. The first brother was cautious, and he spent all his time looking where he was putting his feet to avoid holes and stones. However, his back became so curved that he lost direction and did not go far. The second brother raised his eyes towards the horizon to look far into the distance. However, by always looking beyond the path, he never paid any attention to the rocks and accidents in the way and kept falling, which also prevented him from going too far. The third brother decided to keep one eye up, looking at the horizon, and another down, looking at the road. His attention to both aspirations and precautions paid off for a while. The song explains:

> He went farthest in the path ahead,
> an eye on the road, an eye on what is to come,
> But when the time to summarize came,
> his gaze was lost between being and going.

The song concludes with the adage "an eye put on everything does not know what it is seeing." There is no correct answer in the path towards one's fate: neither caution nor vision will provide assurance and trying to look at both at the same time will only make you confused.

The story serves as a metaphor for the challenges of urban sustainability. Often, ideas of sustainability are implemented in uncertain contexts. There are those who see urban sustainability as an avenue to reach a utopian future. Looking into the horizon, they try to devise new models and visions to walk forward, often not seeing the most fundamental problems that those solutions will immediately face.

Eco-cities, sustainable cities, smart cities, resilient cities become labels for acting towards an imagined future.

There are also those who concentrate on the day-to-day contexts of cities, the problems that they face and the immediate needs of fellow citizens. They may develop interventions that depart from a particular history and cultural context, in which people feel they can work with familiarity. For example, diverse forms of community association shape cities in ways which are rarely noticed. The critique leveraged against situated forms of action is that these actions are not capable of transforming society or challenging the structural drivers that shape the problems faced by citizens in their everyday life.

In this book, we ask ourselves what it would mean to be like the third brother in Silvio Rodríguez' song. Sustainability is, in this book, a problem that requires both staying and going. Sustainability requires facing present challenges and future dreams. Sustainability has both a practical perspective, about activating change today, but also a normative attachment to a vision of the future. However, there is no single vision of that future. Imposing such global visions in one single locality would be akin to imposing ill-fitting solutions to problems that may not exist.

Thus, in this book, we do not ask "what does urban sustainability look like" because there are as many visions of sustainable urban futures as citizens living in our contemporary cities. While the underlying theme of the book is "how can we achieve urban sustainability?" our approach forecloses assumptions that there are neatly drawn plans of action which will invariably take us there. Instead, we associate sustainability with a multidimensional struggle for equality and dignity for humans and non-humans. While this struggle has many manifestations, four decades of sustainability thinking have developed in a series of commitments that can help guide sustainability action.

1.2 A commitment to just sustainabilities

In many ways, this book started back in 2011, when we, the authors, met at the Development Planning Unit of University College London. One thing that brought us together was a shared commitment to research on urban environments that was relevant for people and nature.

At the time, we teamed up with a group of consultants who seemed to share similar concerns. With their well-connected networks and

equipment, they exuded a promise of resources and impact. However, from the moment we started to talk about urban sustainability, they presented 245 ready-made frameworks for analysis and a complex data set (not to be shared), which predicted what they wanted to say. To counter that approach, we developed some case studies, which were telling complex stories of intermingled relationships, of causal relations, inequality and power. Most of all, the case studies said that their data was not correct, or at least, their data did not reflect actionable concerns. But our work was never fully accepted or embraced; the case studies were ignored and cherry-picked for evidence. Eventually, the whole work did not add a new message beyond the frameworks that were present at the beginning. That initial experience brought us together, and we started to exchange normative views about sustainability and its appropriation.

Coming across the discourses of "just sustainabilities" provided us with an anchoring point for discussion. Achieving a balance with Earth systems requires simultaneously working towards more equal societies (Leach, Raworth et al. 2013, Steffen and Smith 2013). Just sustainabilities requires putting justice at the core of those sustainability struggles (Agyeman, Bullard et al. 2003, Agyeman and Evans 2004, Agyeman 2013). The concept provides principles for action, without resorting to ready-made recipes to be uncritically transplanted from one context to another.

Back to the story of the consultants in London, we found that bringing up key ideas, such as representing different groups, ensuring an inclusive process and focusing on people's well-being, was an effective means to challenge data-based narratives of sustainability. Deepening our understanding of environmental racism struggles in the US (Bullard 1993, Pulido 2000, Cole and Foster 2001) we discovered not only that the activists and proponents of these movements were brave, but also that, at times, they succeeded in putting their visions of urban sustainability forward. The theorization of environmental justice followed social movements' attempts to put sustainability into practice (Schlosberg 2007).

We have written this book to address the concerns of our younger selves, and of many others who, like ourselves, struggle to articulate social justice alongside sustainability in the face of mounting enthusiasm about ready-made, fast, technocratic frameworks and solutions. For that reason, we have compiled our ideas about resisting

the appropriation of sustainability discourses and mobilizing just sustainabilities in practice, engaging with actual experiences on the ground rather than with complex, universalizing theorizations of a sustainable future. This book is for the committed activist who, whether they are on the ground, working in a community, in a non-governmental organization (NGO), in a business, at a university, in any sphere in government, may not have at hand a synthesis of the diverse body of literature on sustainability and justice. We aim at providing arguments and examples that respond to totalizing discourses that in the name of sustainability advance misplaced attempts to develop a "comprehensive plan to save the Earth" (such as the one proposed in Hawken 2017).

We remain, nevertheless, cautious about the transformative possibilities of sustainability discourses. Sustainability is a term that has been used over three decades, in many contexts, but most successfully by those who have sought to advance eco-efficiency visions as an excuse to maintain the status quo. The risk of embracing just sustainabilities as a global perspective on urban development is that we may legitimize a specific perspective developed within a Western context, responding to Western-generated concerns. Just sustainabilities has been an emancipatory discourse for the environmental justice movements that embraced its principles. However, a postcolonial and feminist perspective suggests caution when bringing these same principles to think of environmental struggles elsewhere in the world.

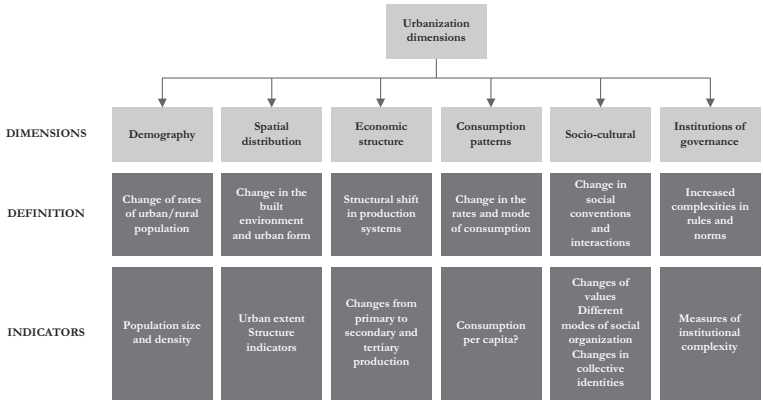
When in 2016 we put this criticism back to Julian Agyeman, he encouraged us to write this book. The challenge was to systematically document action that is already ongoing in multiple locations across the world. Various actors in urban regions are already taking sustainability action. In this book, we analyze a database of sustainability initiatives to examine sustainability action across contexts. We can, of course, adopt a descriptive approach to explain those actions: What measures are deployed to advance urban sustainability? Who is doing them? How are they achieved? The analytical question is the extent to which these actions can transform society towards a just sustainable future. This analysis also helps us reflect on the question about whether just sustainabilities is an appropriate framework to advance emancipatory goals that benefit people and the environment in contemporary cities.

In our analysis, we found abundant evidence that local governments, small businesses, NGOs and communities lead many forms of sustainability action in different kinds of cities around the world. Some of the values that underpin ideas of just sustainabilities (addressing well-being and quality of life, recognizing the interests of future generations) already inform many sustainability actions, even when these principles are not stated explicitly, or when social and environmental goals fail to align. In contrast, distributive and procedural justice dimensions and explicit consideration of ecological limits are rare. Mainstream perspectives on sustainability that emphasize techno-efficiency over justice continue to inform most action on the ground.

This book is an attempt to take stock of our own ideas and how to face the appropriation of the term sustainability. We believe that, rather than abandoning an effective concept, we can re-politicize sustainability discourses using strategies of environmental justice and environmental racism movements and situating notions of social justice at the core of sustainability action. In this way, just sustainabilities – as an integrated perspective – constitutes a coherent narrative that reclaims the tradition of sustainability to support the delivery of emancipatory goals in local action. We must remain vigilant, nevertheless, that our visions of just sustainabilities do not represent an imposition themselves. In this book, we address this by starting the analysis from an understanding of what sustainability action is already underway and what it reveals of the struggle to deliver sustainable urban transformations.

1.3 Urbanization challenges in the 21st century

Since 2010, more than half of the world's population live in urban areas (UNDESA 2018). By 2050, 68 percent of the population will be living in urban settlements. This figure means that two of each three people living in the world will live in urban areas! These figures reveal an astonishing rate of urban growth and something that has never happened before in human history. However, urbanization is taking place at different speeds in different locations. Most of the increase in the next decades will occur in cities in Africa and Asia, while urban areas in other regions of the world, such as South America, North America and Europe, are growing at much slower rates, and even decreasing in some cases. Cities with less than one million inhabitants tend to display the fastest rates of growth.



1.1 Multiple dimensions of urbanization (authors' elaboration)

The increase in the number of people living in urban areas, however, is not the only dimension of urbanization. Urbanization is a multidimensional process that involves spatial, institutional and cultural changes (Figure 1.1). Moreover, cities do not exist in isolation, but instead, they display continuous interaction with their surroundings through the exchange of products, people, ideas and materials.

Urban areas also face multiple environmental challenges (Figure 1.2). Urbanization intensifies these challenges while opening up opportunities for addressing environmental changes and risks. As a means of analysis, we can distinguish four environmental challenges with different implications for just sustainabilities (Figure 1.2).

The first key challenge is that of providing equal access to resources and service provision to urban citizens, concerning the sustainable use of urban ecological resources. This challenge links ecological resources to a poverty alleviation agenda: multidimensional analyses of poverty demonstrate that lack of access to service provision is a definitive factor in acute deprivation and low living standards (Alkire and Santos 2014). The gaps in access to public services remain most difficult to bridge in impoverished cities, where the most vulnerable are also the most affected.

The second challenge, of managing environmental risks, whether this is from industrial pollution or disasters, requires an engagement with the uncertainty of environmental information. In urban areas,

1.2 Four urban environmental challenges (credit: Louise Harvey)

people experience multiple, everyday risks that include exposure to toxic wastes, air pollution, industrial accidents, unsafe traffic conditions, and hazardous buildings and land (e.g., exposure to fire hazards), along with crime and civil unrest (Bull-Kamanga, Diagne et al. 2003, Pelling and Wisner 2009). Cities now also face climate change impacts in the form of increased risks of flooding, droughts, landslides, disrupted agriculture, lost livelihoods, unstable food supplies, water shortages, and displacements (Few 2003, Parnell, Simon et al. 2007, Dodman and Satterthwaite 2009, Hardoy and Pandiella 2009, Simon 2010, Dodman, Bicknell et al. 2012). The most vulnerable urban areas are the most exposed to the impacts of climate change (IPCC 2018).

The third challenge relates to the influence of urbanization on land transformations and biodiversity. Impacts of urbanization

on biodiversity tend to be negative, through destruction and fragmentation of forests, wetlands, and peri-urban ecosystems and invasion of non-native species (Pauchard, Aguayo et al. 2006, Seto, Guneralp et al. 2012, Elmqvist, Fragkias et al. 2013). This challenge requires rejecting the notion of the city as an isolated unit and recognizing the variety of spatial connections that keep it at work. Land transformations depend on the relationships between cities and their hinterland. New forms of urbanization are challenging strict divides between rural and urban areas, with increased interest in the economics and politics that relate to the transformations at the peri-urban interface and the multiple processes of suburbanization (Phelps 2010, Sawyer 2014, Keil and Macdonald 2016).

Finally, responding to global decarbonization calls for a transformation of the cultures of resource consumption that lead to carbon emissions, and the need to redefine our societies in a more balanced way, within the Earth's limits. Estimates of carbon emissions attribute between 67 and 76 percent of greenhouse gas emissions to activities in urban areas (Seto and Dhakal 2014). These estimates have to be taken with caution in light of the complex relationships between urban areas and activities in distant locations (Seto, Reenberg et al. 2012), as well as significant differences between cities. What is common is a recognition of the different essential roles that cities need to play in mitigating greenhouse gas emissions (IPCC 2018).

These four challenges do not impact everybody in the same way. Contemporary urban areas are sites of massive inequalities, both in terms of who suffers the impacts of environmental change and who can respond. Such disparities are evident in informal settlements. Urbanization and global environmental change add to a bundle of unresolved social challenges in urban environments. According to internationally reported figures, 883 million people live in urban areas defined as "slums," that is, that have substandard conditions of infrastructure and housing (UN-Habitat 2016b). The international definition of slums considers housing conditions in urban areas that lack access to adequate water supply and sanitation, where houses lack durability, the living area is insufficient, and living takes place under the threat of eviction. Of course, slums are also places where people construct lives and human relations, and the label "slum" may not help construct a positive identity of their neighborhoods. We only use it insofar that some urban dwellers

find it useful to demand their dignity and their right to urban services. There is a need to recognize the different forms of deprivation that people face in their daily lives, beyond labels and definitions.

Many urban dwellers also face a lack of access to modern fuels and public spaces, transport and waste services. While the conditions in overcrowded urban areas such as slums may be extreme, deprivation is not geographically limited and can materialize in multiple patterns across cities. The organization United Cities and Local Government explains that urban inequalities materialize in different forms of poverty that affect people across a variety of city environments. People face inadequate incomes to provide for food and basic needs, living in overcrowded conditions, homelessness, lack of access to essential services (not only water and sanitation but also energy services, health, education), and the differentials of access to governance systems (UCLG 2012). The city emerges from the interaction between contradictory processes that follow everyday actions in an urban environment, as well as political and economic drivers. Tackling injustice requires consideration of the interconnectedness of these elements, starting from the specific deprivations that disadvantaged groups face, and how individuals experience them.

1.4 Urban environments in international development policy

International policy debates on sustainable development have elevated urban areas as arenas for effective action (Barnett and Parnell 2016, Parnell 2016a). The United Nations 2030 Sustainable Development Agenda highlighted cities and settlements in an independent Sustainable Development Goal, SDG11. SDG11 seeks to deliver cities that are inclusive, safe, resilient and sustainable. The SDGs also recognize the interconnection between the goal for cities and other Sustainable Development Goals (Table 1.1).

In 2016, UN-Habitat convened the Habitat III Conference in Quito to agree on a New Urban Agenda (NUA) that could mobilize urbanization "for structural transformation" (UN-Habitat 2016a). Like the SDGs, the NUA recognized the complex interactions between local action and global processes of change. It put urban inequality at the center of global challenges. Other international policies have similarly underscored inequality as a critical development challenge of the 21st century (UNDP 2015). The growing interest in

TABLE 1.1 Examples of the integration of urban concerns in the SDGs

#	Title	Relevance for cities
1	No poverty	One billion people live in poverty conditions in urban areas, and migration may exacerbate this problem in coming decades
5	Gender equality	Cities concentrate inequalities, but they are also sites of leadership in gender equality struggles
6	Clean water and sanitation services	Urban areas can be sites of high levels of resource consumption and waste production, while local authorities often are responsible for provision of water, sanitation and energy services
7	Affordable and clean energy	
8	Decent work and economic growth	Economic activities often concentrate in urban areas, which can function as hubs of human resources, capital and business activities
9	Industry, innovation and infrastructure	The close links between urbanization, industrialization and infrastructure expansion often locates this SDG in urban areas
10	Reduced inequalities	Inequality is especially pronounced in urban areas, for example in terms of income disparities, uneven access to services and concentration of poverty in informal settlements
11	Sustainable cities and communities	This SDG explicitly recognizes the central role of cities in global sustainability agendas
13	Climate action	Cities are not only responsible for a vast share of global emissions, but are increasingly perceived as leaders in climate action (especially in the absence of national leadership)
14	Life below water	Rapid urbanization can be a major contributor to habitat fragmentation, ecosystem degradation and biodiversity loss
15	Life on land	
17	Partnerships for the goals	Collaboration with sub-national authorities is essential for effective sustainability action, in particular in policy domains where local authorities have strong jurisdiction

Source: authors' elaboration.

"the urban" as a site for action follows from a history of engagement in sustainable development and settlements policies.

The fact that inequality is central to these various agendas offers grounds for hope about the possibility to reach a common goal of urban sustainability (Table 1.2). However, what is often missing in the articulation of the development agendas in urban

Table 1.2 Representation of the urban in international sustainable development policies

Agenda	Remit of action	Role of the urban
Sendai Framework for Disaster Risk Reduction (2015)	Global agreement on reducing disaster risks in all countries	• Identifies rapid urbanization as an underlying risk factor for disasters • Emphasizes the role of local governments (but is less clear about urban governance)
Addis Ababa Action Agenda (2015)	Global agreement on financing for development	• Recognizes the need to strengthen capacities and revenues of municipal governments • Less clear on how to mobilize finance to support local governments
The 2030 Agenda for Sustainable Development (2015)	Global agreement on sustainability, which includes the 17 SDGs	• SDG11 speaks explicitly to making cities "inclusive, safe, resilient and sustainable" • Universal provision of basic services will require substantial efforts in cities • Focuses on national goals with less recognition of local governments and urban civil society
The Paris Agreement (2015)	Global agreement on climate change	• References cities as one of many non-party stakeholders and encourages cities to develop agendas for action • No reference to their specific roles, responsibilities, capacities and need for support of cities
The World Humanitarian Summit (2016)	Summit attended by 180 member states with more than 3,500 commitments	• Includes responsibilities with relevance for urban areas and commitments made by local authorities • Urban governments were not well represented, and their key roles were not discussed extensively
The New Urban Agenda (2016)	Global agenda on sustainable urban development	• Intended as the global guideline for sustainable urban development • Limited recognition of urban governments or civil society as initiators and drivers of change • Refers to sub-national governments mainly as implementers of national policies

Source: adapted from Satterthwaite, Dodman et al. (2018: pp. 4–5).

areas is a vision for local engagement. The utopian discourses that inform international development agendas do not always amount to a plan for action on the ground. There is also a growing skepticism towards interventionism and the extent to which attempts at regeneration constitute new schemes to reproduce power and increase the rents extracted from urbanization. Large infrastructure projects seem to fragment the landscape and to prioritize private, individualized interests over the common good (Graham and Marvin 2001, Oviedo Hernandez and Dávila 2016). Urban interventionism is behind the constitution of dangerous fantasies that impinge on the lives of those who are already most at a disadvantage (Watson 2014).

The search for areas of intervention in cities should go hand in hand with a concern for the city that citizens want. There is a famous anecdote about the encounter between the Greek philosopher Diogenes of Sinope and the ruler Alexander the Great, four centuries before the birth of Christ. Alexander approached the philosopher and asked if he wanted anything. But Diogenes' response was simply to ask Alexander to get out of the sun. The French neoclassical painter Jaques Gamelin portrayed the encounter in his 1763 painting *Ôte-toi de mon soleil!* ("Get out of my sun!") showing a poor, lonely philosopher against a rich ruler, surrounded by his entourage at the door of the city. In the picture, Diogenes appears bestowed with dignity. The anecdote has been used to demonstrate the wise man's rejection of material comforts and power. Faced with the challenges of the contemporary city one could read this anecdote differently, as the encounter of the citizen who wants to get on with life and the well-meaning provider of new comforts who craves power to organize the world. Diogenes' response to Alexander reminds us of the reaction of urban dwellers who often regard grandiose renewal projects and grand, global visions with skepticism, particularly when they limit or destroy the very few services they have access to. Interventions in urban environments should, at the very least, not deteriorate the fragile gains of those who live in marginal spaces.

The production of knowledge around human environments is, by definition, suspicious. Mainstream thinking on sustainable development follows the universalist aspirations that have emerged from modernization projects, colonialism and the market

fundamentalism of late capitalism. Addressing urban environmental challenges, therefore, requires a perspective that looks at assumed knowledge and the possibility of intervention with skepticism. This perspective recognizes the tenuous links between global aspirations and local realities, a question with a lot of baggage in sustainability discourses.

1.5 Think globally, act locally: rethinking sustainability's most famous slogan

Examining the assumptions under the slogan "think globally, act locally" enables us to consider the developments in the last two decades of sustainable development thinking. This slogan has inspired our work and remains relevant to understand contemporary thought on the sustainability of urban areas. However, the slogan also shows environmentalism's baggage and its debts to previous ideas about the relationship between humans and their environment.

The slogan "think globally, act locally" has become so popular that it is even used as an effective marketing principle for companies to adapt their products to a local context. McDonald's is a prime example of this, as the company applies the concept to the strategy of producing different types of meat burgers that match the local culture (Hofstede 1998, Vignali 2001). However, when the slogan was popularized in the 1970s, the intent was, arguably, the opposite. The objective was to reduce humans' footprint on the Earth and reducing humans' consumption is precisely one way of doing that. While the "think globally" part highlighted the urgency of environmental challenges in the whole Earth, "act locally" was an invitation for action everywhere, thus becoming "a call to hyper-environmental activism everywhere from within a holistic planetary environmental mindset" (Darier and Schüle 1999: p. 327). Rather than selling more products in different locations, the slogan called for a generalized mobilization of individual action on the planet.

The slogan fitted well a changing context of Western thought in the 1960s and 1970s, in which totalizing, visual fantasies of an Earth to be controlled and managed by humans faded away with the rise of environmental consciousness. Cosgrove (1994) described this by comparing different reactions to the Earth photographs taken by the Apollo space program in 1968 and 1972. The emerging

environmentalist conception in these reactions evoked the spiritual unity between responsible humans and a fragile Earth, and the mystical bonds between humans and the land. Cosgrove explained that this view resonated with a whole generation of American environmentalists, such as Rachel Carson and Aldo Leopold.

During the 1980s, "think globally, act locally" became one of the most popular slogans of the environmentalist movement. René Dubos is often credited with the slogan. He used it as a means to emphasize the scale dilemmas associated with the concern for the Earth that he observed at the local level. He told an editor of the journal of the US Environmental Protection Agency (Temple 1978): "If you cannot do something about that stream or those lovely marshlands in your town, then how do you think you are going to save the globe?" His close collaborator, Barbara Ward used the term "planetary housekeeping" in a similar sense (see also Chapter 2). She defined the term as:

> conservation in the sense of cleanliness and environmental integrity. Once again, most decisions in this area are determined at the national and local level. But some of them transcend national frontiers and demand cooperation between states on a regional and global scale. (Ward 1976: pp. 280–281)

Both René Dubos and Barbara Ward had a definitive influence on shaping sustainability thought around cities and played a direct role in introducing environmental concerns into the urban agenda (Ward and Dubos 1972, Satterthwaite 2006). Ideas of an interconnected planet where everybody – even the destitute – could play their part in conservation shaped the sustainable development conversation. In the 20 years between the 1972 Stockholm and the 1992 Rio conferences on the Environment and Development, the slogan became a powerful rhetorical tool to advocate transcending the scalar barriers to environmental action. The Brundtland Report stated:

> We are now forced to accustom ourselves to an accelerating ecological interdependence among nations. Ecology and economy are becoming ever more interwoven locally, regionally, nationally, and globally into a seamless net of causes and effects. (Brundtland 1987)

"Think globally, act locally" was not necessarily the political strategy of choice of international NGOs, such as Friends of the Earth or Greenpeace, who exerted strong control over locally generated action (Rootes 1999). However, the slogan became an important mantra for environmental policy and inspired the growth of multiple forms of environmental governance. First, the phrase appears to encapsulate the most intractable dilemma of sustainability: scale. The concern for the Earth as a whole emerges as a call for a different type of action. But this also requires the construction of two spheres of action – the global and the local – with no relationship between them. Critiques of the slogan point out that it justifies a form of environmentalism that emphasizes individuals' attachments with specific places of action rather than relations of belonging and stewardship of the whole Earth (Devine-Wright 2013). Second, the slogan resonates as an appeal to the humility and responsibility of individual humans. It relates to a conception of environmental citizenship predicated on the individual and the individual's relationship and attitude towards the Earth.

In the late 1990s, as concerns with climate change generated calls for local action, the slogan was re-mobilized (Collier and Löfstedt 1997, Agyeman, Evans et al. 1998). Approaches such as multi-level governance and network governance emerged as means to explain the complexity of governance arrangements operating in environmental action across scales. The recognition of the close linkages between global and local concerns is considered an essential incentive for institutional actors who are already thinking globally while operating at local scales (Bai 2007).

These perspectives have also emerged in contrast to the argument that sub-national action is not the best way to combat climate change, because it is a distinct problem that requires the coordination of international commitments (Wiener 2007). This dominant conception of climate change politics only started to change in 2009 after the disastrous climate change conference in Copenhagen that shifted attention to local spheres of action beyond international diplomacy (Hoffmann 2011). The increasing prominence of local and sub-national action in climate change debates has provided new impetus to sustainable development in urban environments. Alongside an influence of global discourses of climate change in urban environments, the focus on urban environments is also redefining global climate politics (Castán Broto 2017).

The Sustainable Development Goals – and especially SDG11 – have highlighted that effective action depends on achieving multiple, interrelated goals. There is significant skepticism about the extent to which discrete local actions amount to actual global transformations (the IPCC report on global warming of 1.5 degrees, for example, highlights the need to strengthen the global response and national support system to enable system transformations (IPCC 2018)). Nevertheless, the slogan continues to have currency in sustainability and climate change debates, inspiring funding streams such as the Global Environmental Facility Small Grants Programme. It also remains relevant as an expression that encapsulates the history of environmental thought, despite opportunistic attempts to harness global debates to accomplish parochial goals (Müller 1994, Bloomberg and Aggarwala 2008).

The slogan reveals two important aspects of just sustainabilities. First, sustainability efforts emerge from within the experiences of the city itself. Urban sustainability is both a political and a material process. There is no direct translation from global aspirations to place-based practices of transformation. The presumption of rightness and universalism that underpins sustainability thinking runs counter to actual efforts to deliver sustainable futures in different parts of the world. Much of the push towards advancing sustainability focuses on producing more sophisticated and objective indicators. However, action needs to start from recognizing activism from within the chaotic complexity in which sustainability happens. Sustainability does not come in a neatly wrapped package, with delineated boundaries and transparent structures, or with predetermined patterns of action summarized in a glossy report. Instead, sustainability requires a commitment to action while knowing that highly idealistic, fragile visions of urban futures are, ultimately, out of reach. Delivering just sustainabilities is an interdisciplinary, boundary-breaking and ultimately messy enterprise. The main task is, paraphrasing the early 20th-century urbanist Patrick Geddes "seeing the city with our own eyes" so that action is focused in the concrete – rather than the abstract – realities of urban life.

Second, this process can only emerge from collective action, as it manifests through activism or power delegated in institutions. By talking about global aspirations, we want to emphasize a part of the definition that is usually only implicit: the global as referring to

the collective and the whole, to the varied dimensions that make the whole of human life in the planet. This definition moves away from an understanding of "global" that spells universalism and dominance – our concern is not global in terms of international flows of capital but the collective aspiration for a better life today and in the future. Thus, there is a need to move beyond the individual as the principal agent of action and recognizing that – no matter the character of their citizenship – individuals belong to complex webs of relations with other humans and things. Change depends on the interactions between all those elements, rather than on the isolated action of the individual.

1.6 Critical perspectives on just sustainabilities

The notion of just sustainabilities emerged as a response to debates in the 1990s indicating that sustainability goals – including those in an urban context – reproduced, rather than prevented, conditions of inequality and environmental degradation. At that point, it was clear that the well-intended terminology of sustainable development was appropriated for purposes far from its original intent. New metaphors have emerged: the green economy, circular cities, smart technologies. All these metaphors are attempts to reimagine human society without actually doing so. Other forms of knowledge about the local experiences of ecosystems, the reproduction of communal systems of water use, the continuous adaptation to changing conditions are blatantly ignored because they do not always come directly from an authorized source – despite the generally accepted assumption that multiple types of knowledge can help us engage with alternative notions of sustainable development (Gough 2002).

The just sustainabilities approach represented one strategy to respond to this appropriation. Just sustainabilities expands notions of justice by emphasizing both intergenerational and intragenerational justice (Agyeman, Bullard et al. 2003, Agyeman and Evans 2003, Agyeman 2005, Agyeman 2008, Agyeman 2013). This requires broadening the notion of justice beyond a narrow distributive conceptualization towards a recognition of how environmental problems are experienced by diverse groups of actors (especially those who are disadvantaged and struggle to make their views known), but also, to examine the extent to which they are recognized and represented, how they participate in environmental decision-making, and how environmental policy influences people's

opportunities for fulfillment (Schlosberg 2007) (see a full discussion on the multiple dimensions of justice in Chapter 7). Following Agyeman (2013) we examine just sustainabilities as consisting of four principles:

- Improving people's quality of life and wellbeing,
- Meeting the needs of both present and future generations,
- Ensuring justice and equity in terms of recognition, process, procedure and outcome,
- Addressing ecosystem limits.

The eruption of black scholarship in sustainability and postcolonial thought is a welcome addition that challenges the assumptions of mainstream sustainability thought (Banerjee 2003, James, Nadarajah et al. 2012). Arguments about recognition and representation are gaining increasing traction in sustainability research and practice. Reflecting this trend, the negotiation of the Sustainable Development Goals followed a process of reimagination of the collective consciousness, with the involvement of a large number of representatives from all over the world (Parnell 2016a). Such a globally inspired process is, however, insufficient. There is a need to challenge the fundamental paradigms that inspired sustainability thinking.

Our argument starts from engagement with the history of sustainability thought and moves towards re-appropriating sustainability as a means to advance social justice (Chapter 2). Chapter 3 is concerned with two points of action that help to develop current thinking on just sustainabilities:

- First, we are concerned with the possibility to decolonize sustainability knowledge and the opportunity to bring to the fore a wide diversity of values and understandings of urban sustainability. At the very least, this entails examining the origins of sustainability thought and its assumptions, in light of alternative ways of thinking. We need to understand how sustainability has become an inherent part of structures of oppression. This thought is crucial when sustainability discourses are one mechanism used to systematically disregard local knowledge.
- Second, we are concerned with intersectional critiques of sustainability that reveal the scant attention that sustainability scholars

have paid to questions of identity and feminist analysis of the experiences and materiality of the city as it is lived. We are concerned not only with what matters to people but also, what matters to nature. Sustainability action needs to align with the intrinsic value of the urban non-human beyond the utilitarian and rationalistic interests of urban dwellers.

This is an approach that emerges from engagement with the concrete city, which we see as a site of action and transformation, where the future relates to previous histories of the material and political. In this context, planning can be redefined away from dominant notions of economic growth, to transform it into an instrument to achieve just sustainabilities (Rydin 2013). For that reason, Chapter 4 introduces the empirical material from an expansive view of urban planning. The second part of the book (Chapters 5–9) examines the principles of just sustainabilities as they emerge associated with a comparative analysis of sustainability action in different parts of the world.

2 | THE APPROPRIATION OF SUSTAINABILITY VALUES

2.1 Introduction

A visionary group of mostly female thinkers who shaped sustainability debates inspired our generation. From Rachel Carson to Greta Thunberg, we have grown to admire women who connect sustainability ideas with action on the ground. In one of her recent protest speeches, on the October 23, 2018, Greta Thunberg extolled:

> Some people say that we should study to become climate scientists so that we can "solve the climate crisis." But the climate crisis has already been solved. We already have all the facts and solutions. All we need to do is to wake up and change. (Thunberg 2018)

She is right. Decades of research on sustainability have shown that we need to change our society. There will always be the need for research, but there is a more urgent need for transformation that does not depend on technocratic and managerial knowledge, financialization of environmental goals, or developmental technologies. Environmental activists and thinkers, especially women, such as Vandana Shiva, Donella Meadows, Barbara Ward, Rigoberta Menchú, Comandanta Ramona, Gro Harlem Brundtland, Louise Gibbs, Wangari Mathaai and so many others have advanced radical ideas and taken steps towards making such transformation possible. "Our house is on fire," is Greta Thunberg's call to arms. Thousands of students around the world have responded to this call, denouncing the passivity of the adult world in the face of an urgent, existential threat. Others before her have stirred social movements, revolutionized our understanding of nature, and risked their lives to protect the environment.

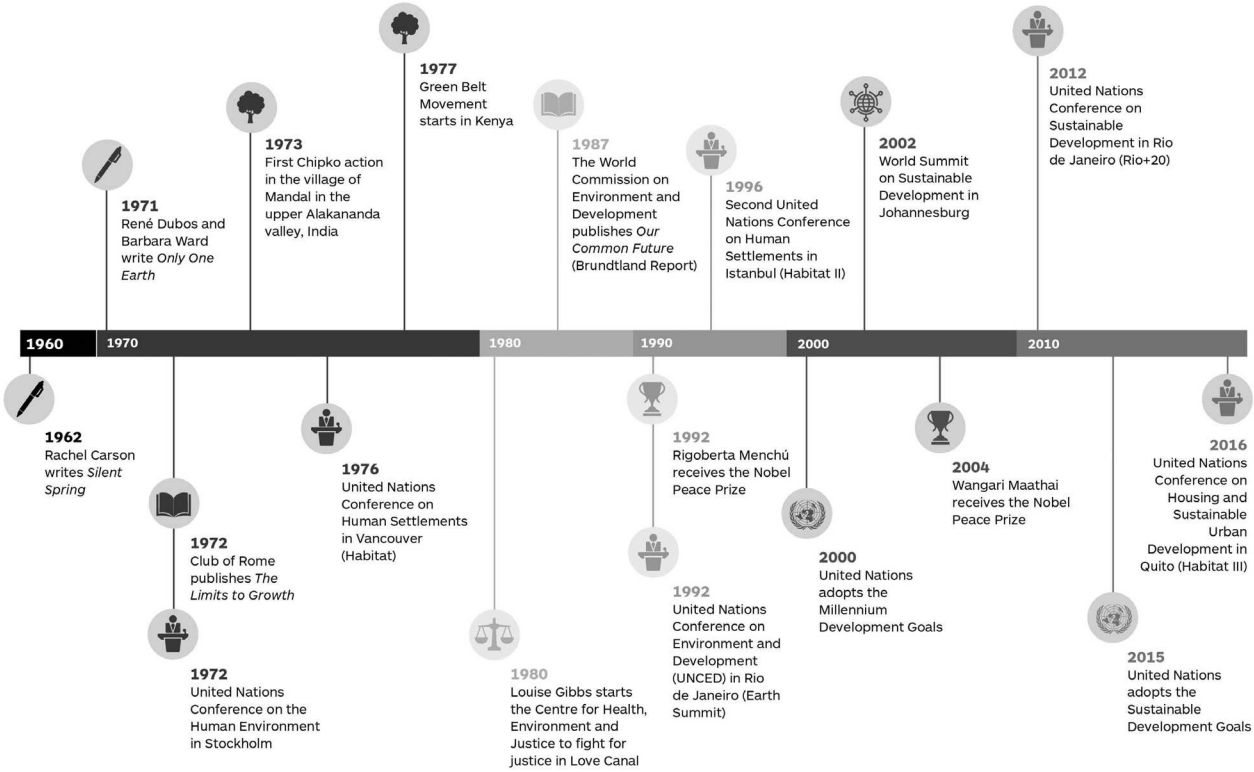
Meanwhile, sustainability ideas are appropriated time and time again in ways that make those very people who fight for them reject their terms. If this book is an attempt to recuperate sustainability as a term for radical emancipatory projects, then the first question is:

How is sustainability appropriated to reproduce or justify the status quo? To answer this question, we go back to the voices that inspired us to become sustainability scholars in the first place, revisiting the commonly recognized milestones seen as constituting the history of sustainability development, punctuated by seminal texts and international conferences (Figure 2.1). We return to these well-known moments to identify foundational ideas that have inspired sustainable development thinking. Our intention is not to rewrite a contested history of sustainable development, but rather to show that alongside instances of appropriation there are radical elements in sustainability discourses that support the progressive project of just sustainabilities.

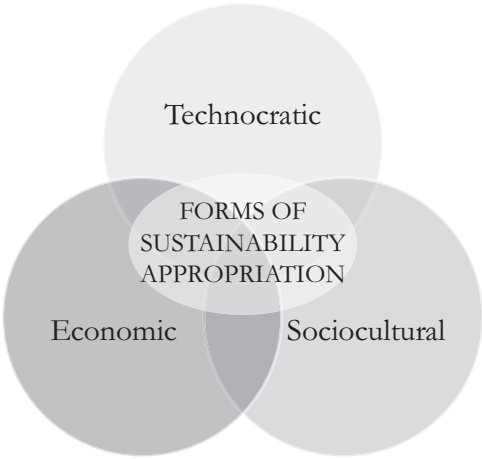
Rather than a problematizing tool, sustainability has often been presented as a means to solve all social and environmental crises. Appropriation has happened under three main mantras: technology is the solution, economic growth is the solution, or consensus is the solution. Sustainability has traditionally been represented by a Venn diagram with three circles showing overlapping economic, ecological and social concerns. We believe this framework misrepresents sustainability thinking. Instead, the Venn diagram is most appropriate to describe the instances of appropriation of sustainability values (Figure 2.2). In this chapter, we look at these three strategies used to appropriate sustainability discourses.

First, we examine a concern with knowledge embedded in sustainability science that has led to an obsession with quantifying and measuring sustainability (technocratic appropriation). We challenge that sustainability action can only be justified from a managerial perspective, or when its outcomes are measured precisely. Second, we examine the enduring dominance of economics-based discourses in sustainability thinking (economic appropriation). We probe the assumption that sustainability action can only be justified when it is efficient or profitable. Third, we engage with strategies for reaching consensus (sociocultural appropriation). We interrogate assumptions that sustainability action can only be advanced in consensual approaches that ignore or suppress conflict in favor of harmonious visions of the future.

Just sustainabilities has provided a forceful response to the regular watering down of sustainability action. The history of environmental justice demonstrates that we can escape these sustainability appropriations. In particular, we adopt one strategy: bringing forward the thoughts and ideas of those thinkers who inspired us to engage with



2.1 Timeline of sustainable development (credit: Louise Harvey)



2.2 Reimagining the Venn diagram of sustainability (authors' elaboration)

sustainability as an emancipatory project, who would have been horrified by the way their ideas have been appropriated over the years.

2.2 Technocratic appropriation: technology is the solution

The most common critique of sustainable development is that it offers a blueprint for technological development. Techno-optimism is an old trope in environmental politics. In 1991, Fisher (p. 348) already argued that "given the central importance of policy-oriented knowledge and technically-oriented decision techniques it becomes more and more important for elites to control the processes through which data is collected, interpreted and formulated into policy arguments." The focus on technological solutions is a malady of contemporary environmental action. A recent incarnation of this approach is, for example, "Project Drawdown," which includes a coalition of researchers and scientists including 62 fellows and 128 advisors who together have collected and ranked "the top 100 solutions to reverse global warming" (Hawken 2017). Project Drawdown is a heart-warming attempt to show that there is a road ahead. However, the project also represents an attempt to reduce the challenges of climate change to a shopping list of (primarily) technological solutions.

Forms of technology fetishism were present at the outset of environmental movements, and some degree of technological optimism was at the core of the *Limits of Growth* (published by the Club of Rome in 1972), one of the foundational texts of sustainability

thought. Donella Meadows, one of the leading authors of the *Limits* report, has engaged in a lifelong engagement with systems as a means to represent the inapprehensible character of the world.

Dancing with systems It may be strange for a modeler to recommend "dancing with systems," but that is precisely what Donella Meadows did in her famous essay (Meadows 2002). What is a system? She defined it as a "set of things, groups of interconnected elements that over time produce patterns of behavior" (Meadows 2008). A nice dance partner! One needs to be brave to dance with a system. But for Meadows, this is the only way. She was concerned about a desire she observed among her colleagues in systems analysis who were looking for the key to prediction and control. This was a mistake that, she confessed, she had made herself in her earlier career. She warned against it: "For those who stake their identity on the role of omniscient conqueror, the uncertainty exposed by systems thinking is hard to take. If you can't understand, predict, and control, what is there to do?"

That omniscient conqueror image is at the heart of technocratic attempts to deliver sustainability. Technological optimism goes hand in hand with efforts to predict and control the future. Actually, according to Meadows, systems thinking is not about predicting, but about recognizing the unmanageable nature of the world that surrounds us. Rather than imposing our will on the system we can observe and listen and work within the system towards a collective, uncertain future. Envisioning the system is an aid, not a prediction. As Meadows writes: "We can't control systems or figure them out. But we can dance with them!"

Limits to Growth, the first global study of the complexity of human-environmental systems, unleashed an era of environmental modeling. It became the instrument to envisage futures, although the original objective of its authors had not been to justify technological interventions but to capture the complexity of socio-ecological systems. The report relied on the assumption that human-ecological systems could be accurately predicted and managed. Years later, Meadows advocated becoming personal, engaging with the system personally, and nothing is more personal than a dance.

Systems thinking of the kind advocated by Meadows goes hand in hand with an interest in the multiple sources of knowledge that inform system understanding. Twenty years after the publication

of *Limits to Growth*, on the June 14, 1992, the United Nations adopted the Rio Declaration. The Rio Declaration, which materialized as Agenda 21, a global blueprint for sustainable development, reaffirmed the Declaration of the United Nations Conference on the Human Environment in Stockholm 1972. The Declaration recognized the fragility of the Earth's life support systems and the interconnectedness between people's lives and ecosystems. The Rio Declaration recognized the importance of traditional and indigenous knowledge in resource management. However, by doing so, it failed to celebrate the intrinsic value of such knowledge and to recognize that utilitarian extraction could be oppressive for those holding it.

Nevertheless, alongside mainstream sustainable development thinking, many groups and activists critiqued how knowledge was defined. In the same year, 1992, Rigoberta Menchú was awarded the Nobel Peace Prize. Menchú's embodiment of the subaltern – indigenous, female, colorful, uneducated – provoked a moment of political consciousness for many young sustainability activists, who were concerned with a nascent questioning of who defines the future and for whom. Menchú's view of human–environment relations supported a more radical conceptualization of sustainable development:

> The peculiarities of the vision of the Indian people are expressed according to the way in which they are related to each other. First, between human beings, through communication. Second, with the earth, as with our mother, because she gives us our lives and is not mere merchandise. Third, with nature, because we are an integral part of it, and not its owners. To us Mother Earth is not only a source of economic riches that give us the maize, which is our life, but she also provides so many other things that the privileged ones of today strive for. The Earth is the root and the source of our culture. She keeps our memories, she receives our ancestors and she, therefore, demands that we honor her and return to her, with tenderness and respect, those goods that she gives us. We have to take care of her so that our children and grandchildren may continue to benefit from her. If the world does not learn now to show respect to nature, what kind of future will the new generations have? (Menchú 2019: online version)

Menchú denounced the material and symbolic dimensions of the discrimination, the oppression and the exploitation that indigenous peoples in Guatemala, and elsewhere, suffered and still suffer today. The plea of indigenous peoples, as embodied by Menchú, was also the plea of the voiceless. Thus, she asked for the means to "reassert our existence to the world and the value of our cultural identity" and "actively participate in the decisions that concern our destiny, in the building-up of our countries/nations." She was claiming her own experience as a source of knowledge to make decisions about the future of her land and her people. She celebrated the interconnectedness of multiple aspects of life and the formation of strong links between ecosystems and human cultures. This kind of thinking opened up the opportunity to claim non-Western interpretations of socio-ecological systems. In doing so, she – and others like her – put a fundamental right to self-determination at the core of the sustainable development project.

Illusions of controlling complexity Meadows' and Menchú's concerns are very prescient today. The belief that complex human-environmental systems can be predicted and managed persists. This belief enables some people – consultants, experts, planners, policymakers – to impose decisions about the land and the lives of others, sometimes without regard for the cultures and memories that are being eroded. The three strategies for technocratic appropriation of sustainability thinking, as discussed in detail below, are: (1) a focus on calculations and measurements, (2) the active promotion of technological progress (including outlandish technological ideas) as the solution to all environmental issues, and (3) the appeal to a universal form of reference knowledge which legitimates undemocratic intervention.

First, methodologies to control systems' complexity result in ever-more complicated frameworks and models. There is a constant attempt to put numbers alongside sustainability outcomes. At the moment, for example, debates on the United Nations 2030 Sustainable Development Agenda and the Sustainable Development Goals (SDGs) are mired in an obsession with data collection and measurement indicator systems. These indicators are never good enough. Hák, Janoušková et al. (2016) argue that, while quantitative indicators have played an important role in understanding

sustainable development since its very inception, a more robust approach is required to evaluate progress on the SDGs. They propose a conceptual framework in which each of the SDGs is broken down into sub-targets, which subsequently are broken down into increasingly detailed indicators. Measuring these indicators would require the coordinated effort of hundreds of experts and scientists. At the bottom of this kind of analysis is the assumption that if only we apply ourselves to the right framework, we will eventually be able to quantify every action of every individual, everywhere and always. Many others are making similar calls for more data, more quantification, more measuring (Lim, Allen et al. 2016, van Noordwijk, Kim et al. 2016, Rasmussen, Bierbaum et al. 2017). Despite the dominance of these quantification approaches, Holden, Linnerud et al. (2014) lament that sustainability is not quantified enough in concrete indicators that can inform policy, being instead defined as a vague ideal open to political contestation. To address this, the authors map different sustainability dimensions onto quantitative indicators that can be used to measure countries' progress in each area. Such attempts reflect a societal "obsession" with numbers as the only legitimate basis for policy decisions (Morse 2013). In the context of sustainable development, these efforts shift debates ever further away from individual experiences while placing the definition of deprivation in the hands of scientists.

The emphasis on quantification and technology goes hand in hand with an unshakable faith in technological progress. In 2005, the essay "Death of Environmentalism" argued for the dismissal of environmental movements, seen as ineffectual. In a longer book treatment of the subject, its authors state that: "Unfortunately, much of the advocacy for sustainable development ignores the fact that ecological concern is a postmaterialist value that becomes widespread and strongly felt – and thus politically actionable – only in postscarcity societies" (Nordhaus and Shellenberger 2007: p. 52). In other words, this means that technological progress is a prerequisite to advance environmental issues and that activists and social movements have no leverage or legitimacy in the global South. Further, they conclude that technology is the answer to solving problems caused by environmental change. This observation shapes the core mission of the organization they created, the Breakthrough Institute, which aims to deliver research into energy technology ("making

energy cheap" or innovation in nuclear design) as the solution to climate change (The Breakthrough Institute 2018). The book builds on an analysis of a form of elite environmentalism particular to the West and fails to recognize the multiplicity of environmentally inspired movements that have emerged all over the world. These movements emerge from localized conflicts of environmental valuation – what Martínez-Alier has called "the environmentalism of the poor" (Martínez-Alier 2003). However, the Breakthrough Institute refers to these conflicts as struggles for well-being, as if the well-being of people would not depend on the material conditions and ecosystems that sustain their existence. Discounting society and environmental politics leaves environmentalists with one single option: put all the eggs in the basket of technological progress.

The Breakthrough Institute is an example of the second strategy for technocratic appropriation. The most puzzling aspect of this approach is its faith in technologies which either pose additional risks to society or are impracticable. The Breakthrough Institute, for example, has revitalized the debate around nuclear energy as a means to reduce emissions, in a context of the decline of a technology that is increasingly perceived as posing too unknown risks to future generations. Some have argued that the urgency of the climate change challenge calls for radical proposals – which led leading environmentalists such as James Lovelock to launch a defense of nuclear energy.

New speculative technologies keep coming. The latest fad is something called "solar geoengineering," a proposal to inject aerosol particles into the atmosphere to control temperatures on the Earth (Irvine, Emanuel et al. 2019). While criticisms abound (deviation of finance from proven technologies, unintended impacts, unequal distribution of effects), geoengineering imaginaries continue to influence policy reports such as the Intergovernmental Panel on Climate Change (IPCC). In a detailed study of the scientific practices of geoengineering teams, Stilgoe (2015) argues that geoengineering projects are projects of "extraordinary hubris" because they "concentrate power in the hands of very few people and claim mastery over a part of everyday life that we have until now been happy to admit is in some way out of our control." He argues that while many scientists have no personal wish to deploy it, the development of technology may itself be the engine behind

its implementation. In a review of Stilgoe's book, Himmelsbach (2016) argues that the case of geoengineering can be metaphorically represented as a battle between the terrible science fiction monster Godzilla and the equally terrifying weapon of mass destruction that humanity sends to combat it. Climate change is not a monster. It is not a fight, but a moment of reckoning with our social lives.

Technological optimists, however, play the card of human ingenuity to ignore the very complexity and uncertainty that Meadows pointed out in her writing. For McLaren (2016), the deployment of technocratic argument is a deliberate "post-political" strategy to foreclose political arguments around environmental justice.

The third strategy is the assumption that there is a universal knowledge that legitimates technocratic interventions. The obsession with information-based (rather than experience-based) environmental knowledge has been present since the heyday of sustainable development. In 1992, alongside the Rio Declaration and Menchú's Nobel Prize, the World Expo '92 in Seville celebrated 500 years of Columbus' first voyage to the Americas. The theme of Expo '92 was "the Age of Discovery." Given the genocidal impulse in the Spanish colonization of the Americas, the lack of irony in the title denotes collective oblivion in the historical appraisal that shaped the exhibition. Against the lack of postcolonial awareness, the Expo showcased the idea that there was a collective knowledge-making project to address the new challenge of sustainable development (Bonomini, Mosquera Adell et al. 2014). High-tech companies like Alcatel, Fujitsu, Rank Xerox and Siemens sold at the Expo their future technological projects, which participated in a vision of the technological city (Castells and Hall 1994: p. 194). The model of sustainability invoked in Expo '92 was as a spectacle of artificial trees and landscaped environments. In contrast, little thought went into preventing the unsustainable transformations that took place around the Expo (e.g., the hydraulic works to deviate the Guadalquivir River to construct the Cartuja Island where Expo '92 was located) or to the preservation of its legacy (Monclús 2006). The failure of the Expo '92 legacy project represented the failure of sustainability discourses that prioritized eco-management and the knowledge economy.

Alternative models of sustainable development were already on show in 1992. For example, Rigoberta Menchú responded to the celebratory mood of Expo '92 and "the Age of Discovery." What did

the idea of "Discovery" mean for her and her people? Were they not already a civilization before they were part of the European imagination? She speculated about what kind of world we would be living in if, instead of conquest, Columbus' voyages had signified a period of cooperative collaboration for America's people. There was a definite tinge of optimism in her Nobel Prize acceptance discourse:

> At a time when the commemoration of the Fifth Centenary of the arrival of Columbus in America has repercussions all over the world, the revival of hope for the oppressed indigenous peoples demands that we reassert our existence to the world and the value of our cultural identity. (Menchú 2019: online version)

Her call signified defiance towards the emerging global discourse of sustainability management and control. She instead celebrated localized understandings of the relationship between land and people. She refused to let her future and the future of her people be planned "as possible guardians of ethno-touristic projects on a continental level." She refused to let others control her identity and her land. She demanded the recognition of indigenous peoples: recognition of their history, their culture, their habitat, the injustices suffered and their capacity to build alternative futures. Menchú is but one salient example of the range of voices that inform ideas of sustainable development: optimistic and conciliatory but also defiant and righteous. She pointed out that you can act for the environment and justice without modeling the detail of the complex human-environmental system in which injustice is happening.

Integrated approaches as a means of control of sustainability in cities The encounter with urban realities is often an antidote against technocratic fantasies. As time has passed, sophisticated understandings of how to implement sustainability in the city have developed that re-frame calculative, technocratic thinking. Sustainability becomes an alibi to implement approaches to urban planning that would otherwise lack justification. This has often been the case in master planning, for example. Master planning is a controversial concept that nevertheless structures contemporary planning practices, as a means to mobilize urban knowledge in a precise blueprint to deliver development in a given area.

The critique of master planning as an imposed perspective goes back to at least the 1970s, but recently we have seen a recovery of these ideas under the umbrella of urban sustainability projects. Master planning has been reimagined as a heuristic for practice or as an intuitive description of how planning happens in practice (Firley and Grön 2014). This is driven by an increased complexity in tools to measure and calculate the city.

Urban metabolism, for example, has been recently promoted as the vanguard approach to resource use in the city (UNEP 2017). The central premise of urban metabolism is to map the flows of resources (usually through input/output inventories) to identify opportunities for gaining resource efficiencies across the city (Minx, Creutzig et al. 2011). Girardet (2004), for example, proposes focusing on promoting circular metabolisms that use these inventories to find efficiencies through the use of waste and resources. While he is sensitive to the variable histories of cities and the modern production of linear metabolism, many urban metabolism analyses assume the availability of data and methods of calculation. Moreover, urban metabolism is supporting the revitalization of master planning approaches under a sustainability banner. The SymbioCity Approach, for example, which has followed the pioneering experiences in Swedish cities such as Hammarby Sjöstad in Stockholm and the Western Harbour in Malmö, promotes an integrated approach to sustainable urban development via efficient resource use and synergies between different urban systems (Ranhagen and Groth 2012). This Stockholm model has been exported to locations as culturally and biophysically distant as Skopje, Macedonia and Visakhapatnam, India. There is a place for urban metabolism frameworks to analyze urban resource inequalities and to identify localized solutions (Newell and Cousins 2015). However, there are abundant examples of the use of urban metabolism as a tool to develop comparative indicators (Kennedy, Stewart et al. 2014) that do not constitute in themselves guidance for urban environmental policy. Thus, we have to remain vigilant to how discourses such as urban metabolism override political debates, when the quantification exercise becomes the solution rather than a means for finding a common pathway. In this sense, resource-oriented master planning can condition environmental policy and innovation at the city level instead of being conditioned by it (Iveroth, Vernay et al. 2013).

We believe that, in the city, sustainability is an issue of stewardship rather than control. The 1972 UN Conference on the Human Environment in Stockholm made the environmental movement visible globally – even though much of this environmental movement came from elitists' concerns about the conservation of wilderness. At the time, René Dubos and Barbara Ward's *Only One Earth*, called for stewardship of the planet's limited resources (Ward and Dubos 1972). In this vein, the Stockholm Declaration included a list of principles related to safekeeping natural resources and prevention of environmental harm, such as protection of wildlife and non-renewable materials. Stewardship tied the environmental movement with an ethics of care for humans and the world. Barbara Ward (1976: p. 276) later observed in relation to the notion of planetary housekeeping that environmental issues "demand new concepts and practice of shared sovereignty, new levels of responsibility, and, above all, a new readiness to see the world not as a simple uncorrected trading system but as the beginnings of a genuine and interdependent community." Far from being an abstract call, Ward complemented her call for planetary housekeeping with a complete program of action. Whether they are relevant or not today, her proposals show a vocation to engage in protective action while recognizing the complex challenges of urban development.

2.3 Economic appropriation: economic growth is the solution

The second common criticism of sustainability is that sustainable development reinforces the logic of growth. In 1991, Sharachchandra Lélé already argued that the broad objectives of the Brundtland Report had been translated into narrow and specific policy measures that prioritized techno-economic solutions (efficiency, pricing, resource management and technical development). Lélé (1991) concluded that while economic development has not been empirically shown to lead to either poverty reduction or ecological integrity, it was the primary objective in sustainability-related policy strategies.

This "economic turn" in sustainability policy contributed to mainstreaming the concept into policy strategies worldwide. Davison (2001) explains how sustainability policy has prioritized solutions to internalize the environment within dominant models of economic growth. One recent example is the Global Commission

on the Economy and Climate, whose explicit objective is to examine how to achieve national goals for economic growth in the context of climate change. A synthesis of their last report reads: "We can have growth that is strong, sustainable, balanced, and inclusive" (NCE 2018). In discourses like this, growth constitutes the central value – if not the only value – against which all other sustainability objectives are traded off. However, economic growth measured at the national level can never reflect the actual values that sustainability embodies: the value of ecological sustenance of local economies and the intrinsic value of nature beyond meeting human aspirations.

The incalculable value of environmental loss The clash between rationales of growth and struggles to protect the local ecosystem is epitomized by the Chipko movement, which grew out of Uttarakhand in northern India. Shiva and Bandyopadhyay (1986) trace the emergence of resistance against oppressive forest management practices to the colonial period in India when regulation prevented communities from accessing forests on which they depended for resources and livelihoods. The principle of nonviolent resistance through non-cooperation made it all the more persuasive. In a detailed study of the movement, Guha (1990: p. xi) says:

> Chipko has almost universally been hailed as a significant step forward in the fight forward to save Himalayan ecology and society from total collapse. While this attention is certainly welcome, what it tends to obscure is that Chipko, like the processes of ecological and social fragmentation which it attempts to reverse is itself only part of a much longer history of resistance and protest.

In sustainability debates, the Chipko movement came to represent the potential of local action against the destructive impulses of a modern, growth-oriented state. Rather than a conservationist movement, in hindsight, Chipko appears as a movement to recognize the importance of ensuring resource sovereignty. Shiva and Bandyopadhyay (1986: 140), in their careful documentation of the movement, argued that the Chipko movement offered an explicit criticism of the extractive logic of growth and an appreciation of the intrinsic value of nature:

> Unfortunately, the Chipko Movement has often been naively presented by vested interests as a reflection of a conflict between "development" and "ecological concern," implying that "development" relates to material and objective bases of life while "ecology" is concerned with non-material and subjective factors, such as scenic beauty. The deliberate introduction of this false and dangerous dichotomy between "development" and "ecology" disguises the real dichotomy between ecologically sound development and unsustainable and ecologically destructive economic growth. The latter is always achieved through destruction of life-support systems and material deprivation of marginal communities. Genuine development can only be based on ecological stability which ensures sustainable supplies of vital resources.

While we must be careful to situate the Chipko movement within a specific history and context of struggle (Mawdsley 1998), its influence as an iconic example of sustainability action demonstrates that ecosystems have long been part of people's livelihoods without being reduced to resources to extract economic value. Rachel Carson already expressed this succinctly in her vision of a spring without birdsong, after birdlife died because of agricultural pesticides:

> It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was now no sound; only a silence lay over the fields and woods and marsh. (Carson 2002: p. 2)

These voices do not only speak of the context-specific value of ecosystems and wildlife, but also of the profound sense of loss that accompanies environmental change. Such sense of loss relates to the inherent value of natural landscapes, as they constitute the surroundings of people's lives. For example, the European Landscape Convention adopted by the Council of Europe in Florence in 2000 emphasizes the intangible but essential character of socio-ecological heritage. Despite the difficulties to implement it, the Landscape Convention has pointed towards the justice-related dimensions of environmental change that affect people's surroundings. Nevertheless, what is most difficult to apprehend, but which is captured beautifully

in Carson's metaphor, is the experiential, personal dimensions of that sense of loss, a sustainability concern that is as far as possible from the mantra of sustainable growth.

The "economic turn" in sustainable development

> These links between poverty, inequality, and environmental degradation formed a major theme in our analysis and recommendations. What is needed now is a new era of economic growth – growth that is forceful and at the same time socially and environmentally sustainable. (WCED 1987)

The opportunity to reduce sustainable development to a putatively benign form of economic growth was already explicit in the Brundtland Report. The report emphasizes that celebratory discourses of capitalism do not capture the essential aspects of life on Earth: it highlights the interconnections between the environment and human life, especially the link between poverty, inequality and environmental degradation. Nevertheless, the pervasive influence of the language of economic expansion marked the appropriation of sustainable development at its very inception.

Davison (2001) describes sustainable development as both a policy framework and a language shared by politicians, businesses, non-governmental organizations and professionals. He traces the evolution of environmental politics from the first wave of oppositional and technology-critical movements in the 1960s and 1970s to a second wave of conformist and technology-optimistic reactions that began in the 1980s. For him, this represents an "economic turn" in sustainable development thought. A series of theoretical conceptualizations of sustainability came to justify this turn. Ecological modernization theory (EMT) occupied the central stage of socio-environmental policy dialogues in the 1990s and early 2000s. EMT argues that industrialized nations can cope with ecological deterioration by relying on solutions provided by science, technology and market forces (Mol 1996). The concept represents the idea that capitalist society can transform into an environmentally sound future through reliance on far-sighted leaders in democratic political systems and firms that profit on eco-friendly technology (Dryzek 1997). The discourse portrays environmental issues as a positive-sum game, in which economic growth and environmentally friendly solutions are

easily reconciled (Hajer 1995). As with the sustainable development idea, the ecological modernization discourse was widely embraced because it avoids painful trade-offs: continued industrialization and social progress can be achieved without harm to the natural environment (Gibbs 2000). In 2005, Meadowcroft (2005) referred to ecological modernization as the dominant theory shaping contemporary environmental politics. While EMT no longer holds a dogmatic position in environmental policy debates, its assumptions continue to bear a strong influence on sustainability policy (NCE 2018).

The struggle for the heart of sustainable development has long taken place along an axis between the extremes of incrementalism (as a realpolitik strategy for delivering results) and transformation (which defends radical socioeconomic and political change as the only means to achieve just environmental outcomes). This struggle was exemplified with the debate of "strong" versus "weak" sustainability. "Weak" sustainability suggests that all items in the world are measurable and can be substituted according to their economic value. The aggregate value of human-made and natural capital should, therefore, be maximized in both current and future societies. "Strong" sustainability, by contrast, assumes that nature has its intrinsic values and may not be replaced by human-made capital. A forest, for instance, may not be substituted for a road, even though they represent an equal monetary value (Neumayer 2003). For many, moving towards a sustainable society requires "weak" sustainability action mostly in association with business approaches, such as eco-efficiency (DeSimone and Popoff 2000). For many environmental activists, this waters down the concept of sustainability so much that it no longer resembles its origins and objectives at all.

The result is that throughout the 1990s and early 2000s, sustainability as a discourse has lost currency among the environmentalist groups that promoted it in the first place. In contrast, sustainability has maintained relevance in economic debates. The term has become entangled with traditional notions of corporate social responsibility (CSR) (Carroll 1999) and come to signify win–win business solutions – opportunities to "do well by doing good." CSR programs have emerged alongside contradictory terms such as clean coal and sustainable mining, which suggest that all forms of business can be reconciled with environmental objectives. With the ascent of sustainable business ideals, such as responsible investment, sustainability

innovation and ecopreneurship, firms are expected to lead the way into a sustainable business paradigm (Schaltegger and Burritt 2005, Schaper 2016). Such paradigms reaffirm the assessment that sustainability was only ever possible because it was made acceptable to global economic organizations (Hodson and Marvin 2017). All in all, the environment is reduced to an externality, and financial means to tackle environmental deterioration are prioritized: taxes, incentives, voluntary management systems become silver bullets for a pretended painless shift towards a sustainable future. In doing so, eco-efficiency discourses miss the most important insight of environmentalist principles: the incommensurable values that are attached to life.

Making green cities The perception of the importance of cities in sustainability in the 1990s materialized at a time of reallocation of authority in the urban domain. At the same time, arguments emerging from environmental planning were deployed to reimagine the city within an overall discourse of environmentalism (e.g., Elkin, McLaren et al. 1991). Ideas of decentralization (delegation of power and responsibilities from national to lower levels of government) were gaining currency worldwide. A World Bank report from 1994 noted that "decentralization is widespread. Out of the 75 developing and transitional countries with populations greater than 5 million, all but 12 claimed to be embarked on some form of transfer of political power to local units of government" (Dillinger 1994: p. 7). This process, often voluntary (and potentially fortuitous albeit messy, according to the World Bank) unfolded in a context of perceived distrust of massive national government spending, which helped create the image of municipal authorities as suitable actors in charge of addressing local concerns.

Decentralization paradigms grew hand in hand with the rise and diffusion of models of "corporate-managerialist" models of government and "new public management." Provision of services and infrastructure (in cities and elsewhere) were privatized, while operations of many public agencies in the name of efficiency adopted management structures similar to those of firms. The fragmentation of delivery and the declining influence of municipal authorities over the urban environment were its immediate effects (Monstadt 2007). Even in countries where local governments traditionally played an active role in the provision of public goods, control slowly eroded

(Wollmann 2004). Authority shifted from central to local government authorities, and from the public to private sector actors, and these parallel processes rearranged the governance landscape in the social and environmental policy domains.

These shifts in authority occurred while cities became integrated into sustainability debates. Local governments were at this time placed center stage of sustainability action through the diffusion of Agenda 21. As a result, instances of economic appropriation of sustainability emerge strongly within discourses of green cities. The sustainability lingo dominated discussions at the second Conference on Human Settlements in Istanbul in 1996 (Habitat II, also known as the City Summit). At this time, discourses of economic growth were visible in a declaration that portrayed "cities and towns as centers of civilization, generating economic development and social, cultural, spiritual and scientific advancement" (UN General Assembly 1996). The Declaration took steps towards narratives of inclusion and recognition, making multiple references to the needs of vulnerable and disadvantaged groups, and issues of poverty reduction and gender equality (Satterthwaite 1997). Livelihood and capabilities perspectives also gained a central position at the conference (Parnell 2016b). Yet, neoliberal interpretations dominated, as solutions to poor living conditions were presented in terms of "sustainable consumption and production" (principle 4), as well as "issues of financing of development, external debt, international trade and transfer of technology" (principle 5) (UN General Assembly 1996). Market mechanisms were presented as the primary strategy for the provision of affordable and sustainable housing, even though public participation and partnerships also took on a stronger role (Satterthwaite 1997). Sustainable cities were conceived within the dogma of neoliberal capitalism.

Eco-cities are a contemporary expression of this paradigm. Many consultancy companies have developed eco-city blueprints for international projects where the project of a city is dropped into what is conceived as a vacant space and without regard for the forms of life that already exist there. Eco-cities quite explicitly mobilize technology and design towards the objective of economic development (Rapoport and Vernay 2011). Famous examples such as Masdar City in the United Arab Emirates or Dongtan Eco-City near Shanghai emerge as global templates for sustainable urban development, although locally they do not seem to be inhabited in a meaningful way

(Joss 2011, Joss, Cowley et al. 2013, Joss and Molella 2013, Caprotti 2014). Sustainable housing complexes in cities such as Monterrey or Bangalore are disconnected from the overall urban fabric (Bulkeley, Castán Broto et al. 2014). Sustainable development seems to be incorporated unproblematically to visions of the entrepreneurial city that blatantly ignore the production of inequality and environmental degradation that accompany urban economic growth (Harvey 1996). Faced with the stark realities of informality and growing inequality, these eco-cities – and the master planning they inspired – are part of a gamut of urban development fantasies (Watson 2014).

However, notions of the entrepreneurial city are also embedded in more persuasive imaginaries of the city. For example, the Ellen McArthur Foundation promotes the circular economy in cities with a firm belief that developing sustainable solutions is a means to find economic growth opportunities in urban areas. The Foundation argues that: "In order to remain competitive, cities must be able to attract people, businesses, and diverse economic activity – the challenges described above are making it increasingly difficult to do so" (Ellen McArthur Foundation 2017: p. 6). Rather than being organic processes where people live and work, cities are in these discourses celebrated only for their capacity to promote economic growth. There is no recognition of the origin of environmental action as a commitment to maintain the integrity of ecosystems and promote multiple values in the relationship between humans and the planet. Competitiveness, rather than liveability, becomes the central challenge for the city. This form of appropriation, in particular, provides the grounds for the exclusion of rich, life-based notions of sustainability and justice.

2.4 Sociopolitical appropriation: consensus is the solution

The third common critique of sustainable development is its emphasis on supposed neutrality, which invisibilizes the political nature of environmental conflicts. Marcuse (1998), for example, was concerned about how sustainability discourses were used in urban development to legitimize and normalize the status quo. For example, the use of game theory concepts to explain social life, such as the idea of sustainability involving win–win solutions implying there is no cost involved in sustainability action, was a strategy to reduce the terms of the debate. Moreover, this overlooked the key insight that strategies for modernization and development – from

mining to the development of special economic zones – were intrinsically unsustainable and conflicted with people's beliefs about the future they want.

The Quito Declaration (also known as the New Urban Agenda, NUA) was adopted in the United Nations Conference on Housing and Sustainable Urban Development (Habitat III). The NUA proposed ambitious aims for the international community: to "promote inclusivity and ensure that all inhabitants, of present and future generations, without discrimination of any kind, are able to inhabit and produce just, safe, healthy, accessible, affordable, resilient and sustainable cities" (UN General Assembly 2016). This principle implies cities that are participatory, transformative and "leave no one behind." The language is confident, forward-looking, celebratory. However, the NUA's emphasis on consensus means that positive statements are prioritized over a sober assessment of the trade-offs involved in delivering sustainable, just cities. This strategy has been common in attempts to develop international policy on sustainable development, without recognizing activists' efforts to make visible the complex conundrums involved in delivering sustainability agendas.

Making environmental conflicts visible "If only experts will give us regulations" was one of the most memorable quotes from qualitative research in Tuzla, Bosnia, that sought to understand community perspectives on environmental pollution (Castán Broto 2013). Most local people argued that there was one way to solve the pollution challenge from coal mining and coal energy generation: one that involved experts as the ultimate arbiters for people's conditions, who could establish a fair share of responsibility and move industries to action without furthering the political debate. The role of the expert in Tuzla was seen as one that could take the conflict away by showing the truth of the situation. Residents assisted expert meetings with dismay as the very experts they hoped would save their communities doubted the veracity of their accounts of pollution. Experiences of ash on the skin (which they described as "iron grinding") did not correspond with expert assessments that focused on the heavy metal content of soils. At the same time, an emergent environmental justice movement attempted to build a body of evidence to demonstrate the impact of pollution on people's lives. The question of what forms and levels of pollution were acceptable became a political

issue. Eventually, this political debate led to some form of recognition of communities' experiences, but this happened only because of the insistence of local activists and the changing perspectives in Bosnian society.

The story is familiar. It reflects the inherently political nature of sustainable development and the need to claim sustainability through struggles. Often, these are struggles against some externally imposed development projects, such as in the case of Tuzla, where the community saw themselves as fighting against the all-powerful thermal power plant on which the local economy depended. However, the same struggles emerge also in more mundane contexts, from the development of environmental plans to the instances of resistance against consumerism that we observe in our own lives.

Sustainability and sustainable development have always been about showing, rather than reconciling, the inevitable trade-offs and conflicts inherent to the delivery of environmental action. Environmental justice movements, such as the one described above in Tuzla, have been central to reminding us of the role of conflict in sustainability action. Environmental justice vocabularies emerged from struggles against residential toxic exposure and facility siting (Edelstein 1988, Bullard 1993, Bullard 2008). In the 1980s and 1990s, environmental justice scholars in the US saw it as a movement that denounced environmental racism and made visible how extreme racial segregation resulted in pockets of poverty and environmental degradation (Bullard 1993). Members of African American, Native American, Asian Pacific Islanders, Chicano and Latino communities whose concerns were ignored by policymakers became experts on a range of issues, including land rights, toxicity, planning, anti-waste and antidumping campaigns or pesticides without active participation in mainstream green movements (Agyeman, Schlosberg et al. 2016). More recently, the vocabulary of environmental justice has expanded to include numerous locations (Walker and Bulkeley 2006, Walker 2012) and to acknowledge the global dimensions of local environmental change, particularly with the increasing reflection upon climate change (Schlosberg 2013).

Learning has taken place through an engagement with the struggles resulting from the operation of global capitalism across locales. Local struggles are always linked to a modality of environmentalism that Martínez-Alier (2003, Martínez-Alier, Anguelovski et al. 2014)

calls environmentalism of the poor. This is poor. This is a global movement for environmental justice, as documented in the environmental justice atlas (Temper, Del Bene et al. 2015). Environmental action becomes a means to claim broader agendas of social justice, such as in the well-known case of the Green Belt Movement led by Wangari Maathai (Muthuki 2006), admired as a movement that made social activism politically effective (Hayanga 2006). These varied experiences of environmental activism have long been documented as political struggles bringing local expertise and experiences to critique and influence global debates on sustainable development (Rocheleau, Thomas-Slayter et al. 2013). In summary, environmental struggles highlight that efforts to achieve well-being and quality of life come together with questions of justice and equality in terms of distribution, participation, and recognition (we will discuss this further in Chapters 5 and 7).

Sustainability must go even further, by constituting a call to overhaul the sociopolitical systems that shape environmental change and the possibility to preserve life on the planet. The Mexican movement of the Zapatistas is for us a salient example of a social movement where the political struggle is particularly visible. The Zapatista Army of National Liberation was established in 1994 as a local movement that resisted the Mexican state, and by extension, its extractive and oppressive neoliberal policies (Stahler-Sholk 2007). The Zapatista movement was a struggle against multiple deprivations, to regain the right to land, housing, work and education, but also autonomy. The Zapatistas followed a long history of struggles around the land and natural resources in Chiapas. The conflict was central for the formation of the movement, both to inspire it and to obtain legitimacy. The encounter with an abstract enemy beyond the state led to the formulation of a philosophy of resistance that challenged the very principles of neoliberal appropriation. Struggle also happened within the movement. For example, there were difficulties in representing women within the decentralized structures of the organization. The great anthropologist Olivera (2005) describes how the women within the Zapatista movement engaged with a particular form of indigenous feminism that challenged the feminist principles of non-indigenous activists that engaged with them. Olivera (as told in Pérez 2018) explains the importance of a central idea of guaranteeing life's sustainability: the right to maintain dignity for people and the environment.

For her, the central strategy to achieve life's sustainability is to create political spaces that prevent the co-optation of indigenous movements by the state. Accordingly, political struggles are central to sustainability because sustainability depends on delivering self-determination and autonomy.

The tyranny of participation (again) In sustainable development agendas, participatory development strategies have become perhaps the chief means of appropriation of the political character of sustainability. Agenda 21 stated in Chapter 1 that "the broadest public participation and the active involvement of the non-governmental organizations and other groups should also be encouraged." Chapter 28 called for local authorities to engage communities and citizens in dialogue, with particular focus on overlooked groups, such as women, indigenous communities and youth. Institutions such as the World Bank called for participation in their projects and inclusion of a variety of actors into previously expert-led processes, such as assessments, evaluations and priority-setting procedures (Brugmann 1996). Ideas of collaborative and participatory planning fostered constructive dialogue among institutional representatives and communities seeking to deploy forms of collaborative rationalities (Healey 1997, Forester 1999, Innes and Booher 2010).

In urban areas in the global South, these trends left activists with a sense of déjà vu. The world appeared to have finally caught up with realities of governing the environment in contexts where the state was absent, and where interventions were led by a variety of actors (whether they had legitimacy or not), through a variety of participatory approaches. The idea of participation as a form of emancipation has dominated these debates, for example through community-based management of resources. Similarly, housing in the 1990s became dominated by the enabling approach, which were fixed in the conviction that individuals can transform their own lives and environments if provided autonomy and appropriate forms of support. Models of community-based management of natural resources and community and third sector activism dominated the landscape of environmental action in many cities of the global South.

Through the accumulative effect of the trends described above, cooperative environmental governance has become an assumed reality. Collaborative or participative planning practices are

common. However, even when those are present, true cooperation is rarely achieved. Sometimes, under the labels of participation or partnership there are initiatives that imply a narrow interpretation of collaborative planning ideals, such as consultation exercises that are reactive and reach a small share of a population, or collaboration only with stakeholders in firmly established political and economic positions. Sometimes this is a simple tick in a checklist of principles of sustainability governance, without a deeper reflection on what cooperation and participation may imply. Other times, participatory exercises are simply used to whitewash political processes that lack democratic legitimacy (as has long been recognized in environmental sciences, see Fiorino 1990).

At the same time, participatory planning strategies have encountered increasing resistance and rejection. The book *Participation: The New Tyranny?* denounced the participation paradigm as a manipulative strategy to perpetuate oppression and existing power relations. Building on a set of illustrative case studies, the publication demonstrates that participatory planning strategies often override existing legitimate decision-making structures and serve to reinforce the influence of those already in power. Cooke and Kothari (2001: p. 14) reflect on these insights:

> It becomes clear from a reading of the chapters in this book that the proponents of participatory development have generally been naïve about the complexities of power and power relations. This is the case not only "on the ground" between "facilitators" and "participants" and more widely between "donors" and "beneficiaries," but also historically and discursively in the construction of what constitutes knowledge and social norms. While analyses of power in participation are not new, what is evident here is that there are multiple and diverse ways in which this power is expressed; furthermore, articulations of power are very often less visible, being as they are embedded in social and cultural practices.

Without attention to these subtle social relations, participatory projects with an emancipatory agenda often cement structures of domination. Although there were forceful responses that attempted to reclaim the emancipatory potential of participatory approaches (Hickey and Mohan 2004), participation remains suspect. We agree

with Cooke and Kothari that the empowering elements of participation must be subject to empirical evaluation and critical reflection. However, we cannot abandon participation as a strategy for advancing just sustainabilities. Participation is a condition of justice because the alternative is technocratic imposition. The question is how participatory processes are co-opted and open to manipulation within multiple sets of relations that enable them, and the publics that are constructed around participatory engagements (see Chilvers and Kearnes 2015).

The dichotomy of conflict/consensus has often been used to frame participatory governance in environmental policy and planning debates (Rydin 2003). This is often portrayed as an encounter between the putatively opposing views of philosophers Michel Foucault and Jürgen Habermas, in a manner that draws on two separate worldviews – one in which power operates through constant conflict and one in which consensus is the means to legitimize power (Flyvbjerg 1998). However useful this debate has been to explore the politics of planning and policy making, there is a need to move forward by recognizing the realities of action on the ground. Sustainability action always involves conflict and consensus simultaneously. Instances of periodic consensus may enable the delivery of action, while conflict is the main means whereby new questions and issues are formulated. Appropriation occurs when instances of consensus are staged to silence underlying conflicts.

The real challenge here emerges because participation is a cornerstone of sustainability, but it can only be so through a genuine engagement with empowerment strategies. Co-optation of participatory processes and community-based organizations is perhaps the greatest threat to the ability of people to organize themselves to build the places they want. At the same time, delivering sustainability action without even asking the views of those who are supposed to receive it is inconceivable. Participation, like sustainability, needs to be reclaimed for progressive aims (something already advanced in the book mentioned above, *From Tyranny to Transformation*). More recently, we have seen efforts to appropriate participation ideals in engagements with new conceptualizations of "co-production" or "co-design." Alongside these efforts of resignification, we have a duty to reclaim a progressive history of mobilization and social movements through participatory strategies.

Beyond smart cities The shift in sustainability thinking from political struggle to technological challenge goes all the way back to the 1970s (Gómez-Baggethun and Naredo 2015). In urban development, the focus on "politically neutral," conflict-free visions side-lines (or even obliterates) issues of equity and inclusion and thus reproduces economic and ecological disparities (Checker 2011). In this way, sustainability discourses are used to legitimize technology- and investment-intense projects without recognizing that conflicts about sustainability involve questions on fundamental values about what kind of life is worth living (Owens and Cowell 2011). The appropriation of sustainability discourses that devoid them of political life is a strategy that often works to subsume the other two strategies of technological and economic appropriation.

The New Urban Agenda, for example, was adopted with reference to the SDGs in 2015, which included an urban goal (SDG11) of development of safe, inclusive, resilient and sustainable cities. The NUA had to deliver something beyond a measuring framework for SDG11. In a spirit of ambition and optimism, the conference adopted the NUA as a strategy to frame urban areas as sites of opportunity and as vectors of change (Parnell 2016b).

Critiques followed. Acuto and Parnell (2016) pointed to the lack of details regarding practical strategies, as well as data collection and monitoring capacities to realize such urban transformations. Cohen (2016) argued that, as had happened with the Habitat II declaration, the lack of mechanisms for implementation and tools for evaluation meant that NUA may not help to identify concrete or realistic actions and, hence, may not have any real impact on urban policy. Satterthwaite (2016) similarly questioned the ability of eloquent (and lengthy) policy documents to be of relevance to people in cities (especially those living in poverty) and support local actors addressing real concerns. Most of the issues of the "old" urban agenda remained on the table (provision of clean water, sanitation, housing). The NUA appeared as an elaborate reformulation of objectives (what to change), but a failure to change the method (how to improve), associated with a continued obsession with indicator frameworks and smart city technologies (Caprotti, Cowley et al. 2017). The NUA emphasized consensus and built on previous experience. However, it lacked a bold statement about an alternative strategic approach to establish just and sustainable cities.

One of the proposals in the NUA is its commitment to a "smart city approach." This commitment signifies that the efforts for inclusivity have displaced political debate in favor of more agreeable, commercially viable, forms of sustainability. Widespread attachment to models of the smart city reflects one of the most influential contemporary expressions of politically neutral urban ideals, which have gained strong influence through their association with opportunities to deliver new technology and economic expansion (Marvin, Luque-Ayala et al. 2015). The smart city ideal represents urban areas integrated with advanced information and communication technology systems, to deliver services with ever higher degrees of efficiency, quality and convenience. This new paradigm represents a new instance of appropriation of sustainability thinking, this time combining sociopolitical appropriation with other forms of technological and economic appropriation. In many cases, smart city proposals come hand in hand with fantasies of democratization through digital systems, as if increasing communication is facilitating the possibilities for dialogue and consensus. Far from facilitating the democratization of society, social media is used to spread false truths and create uninformed political constituencies. A greater degree of computer literacy – particularly in terms of controlling the terms of the debate through programming languages – will be required before these approaches can be considered. The assumption embedded in the most progressive understandings of smart cities is that everybody should participate, leaving aside concerns about who has legitimacy and capacity to actively participate in environmental governance.

Beyond these concerns, the smart city concept also represents a powerful new universalist and legitimizing framework for intervention, which allows coalitions of "experts" to parachute supposedly objective, ready-made solutions into vastly different urban environments (Kitchin, Coletta et al. 2019). Kitchin (2014: p. 9) explains how reliance on "an evidence-based, algorithmic processed approach to city governance . . . seemingly ensures rational, logical, and impartial decisions," which erases the need for complicated sociopolitical deliberation. According to Kitchin (2014), the smart city ideal becomes an optimum means to depoliticize environmental politics, reproduce corporate control, entrench neoliberal ideologies and create systems of state surveillance. Dominant conceptions of smart urbanism obscure

the ways in which technology can be used to build social solidarity and facilitate inclusivity (McLaren and Agyeman 2018).

There were alternatives through which the NUA could have mobilized political strategies as alternatives to smart cities. For example, the NUA recognizes the efforts of some countries to advance "the right to the city," but it does not enshrine it as a principle in international policy. By contrast, social movements use the discourse of "the right to the city" as a force that re-establishes primacy of people over profit (see discussion in Chapter 6). These proposals did not fit within the NUA, illustrating the failure of international policy debates to embrace radical programs of action. Nevertheless, whatever the shortcomings of the NUA and the SDGs they have revitalised important debates on urban inequality and the uneven distribution of environmental resources and burdens. Refusing to engage with those approaches, albeit in a critical manner, paves the way for their appropriation to advance models that do not support sustainable just futures.

2.5 Conclusion

Our re-reading of critical events and figures who shaped sustainability thought advances a view of sustainability as a movement grounded around the ideas of environmental stewardship and sustaining life, which exposes the multiple values associated to nature and ecosystems, and that constructs political arenas to debate issues of environmental and social justice.

Sustainability has routinely been appropriated through its history, both in deliberate attempts to do greenwashing or in well-intentioned attempts to build consensus. As scholars, practitioners and activists we have a responsibility to mobilize a historically powerful discourse to advance a better future for all.

Rather than seeking to win a battle for the heart of sustainability, we call to mobilize and put to use a discourse which is powerful, and that has the potential to lead to social change. Establishing a single definition for sustainability would be against its main principles, of recognizing a multiplicity of perspectives on environmental and social change.

There are flaws in the illusion of consensus that inspires planning perspectives and future-making visions in cities (Watson 2016, Kaika 2017). Moreover, sustainability action depends on social and

political systems that struggle with issues of representation. We fail to represent all those who have a voice, let alone those who do not: the future, the past, the inhuman (O'Neill 2001) (see Chapter 6 for a discussion on representation). Let's celebrate a progressive tradition that, under the banner of sustainable cities, has sought to catalyze green and inclusive transformations (Simon 2016). Sustainability represents a vocation to be open: exploring opportunities to hear alternative perspectives, creating open forums for decision-making, focusing on contrasting arguments. Sustainability is a framework of reference, a familiar arm to lean on when advancing programs of ecological resistance. It is open to appropriation, hence the need to reclaim sustainability as a powerful discourse for change.

3 | THE CHALLENGE OF EMANCIPATORY SUSTAINABILITY THOUGHT

3.1 Introduction

As we have both been educated in conventional universities in Europe, our education and understanding of environmental science have emerged from traditionalist approaches to understanding ecology and environmental change. The model under which we learnt sustainability science fits the characteristics of what Paulo Freire (1970) described as the "banking model of education." This is a model whereby a teacher with authority transmits a set of knowledge to the student, who gladly opens herself or himself to be filled up with this transferable, bankable information. This model shapes the practice of environmental action until its inadequacy becomes revealed: it is not a model for practical action, it does not recognize the mutual co-constitution of ecological and social problems, and it does rely on a fundamental assumption – the possibility to understand entirely complex socio-ecological systems – which is wrong. We found out the inadequacy of this model of environmental knowledge the hard way, by engaging with complex problems and corroborating the inadequacy of our approaches.

For example, one of the authors was an idealistic engineering student in 2001, who accepted the task of developing a sustainable water management plan for the city of Tarija, in Bolivia – a country she had never visited before. Her research focused on La Victoria, the watershed that provides the drinking water to the southern Bolivian city of Tarija. She organized a team of undergraduate students to survey the soil erosion and vegetation in the area to evaluate the long-term sustainability of the city's water supply. She compared her data with the consumption figures she had obtained from the water company and assessed the ecological and financial sustainability of the city's water resources.

During fieldwork she found that there were constant interruptions from a diverse set of forest collectors. Many people were accessing and

using the forest in multiple ways. One night, after a long day of infiltration experiments, transects and botanical data collection the whole team gathered around the fire, singing and drinking coca leaf tea. Two children, the children of the guard, joined her. These were two short boys, with thick black hair. They were not older than eight years old.

"Come with us. We will catch crabs!"

The student jumped out of the tent, shivering because of the cold. The moon shined through the needles of exotic conifers planted possibly on the advice of Spaniards who missed their homeland but knew little of Bolivian Andean ecology. She followed the two children up to the stream until they stop.

"Here they are!"

It only took the children a few minutes to fish the first of many tiny, transparent crabs. They collect them in a pail. Back at the camp, crabs are fried in the shimmering coals. On the fire, the crabs become opaque, and they filled the air with their smell. One of the children extended a fork to the engineering student with two roasted little crabs on it. She felt repulsed at first, but could not ignore the inquisitive black eyes, shining in the moonlight. She bited one side, with the touch of warm oil, then the crunchy skin breaking between her teeth. It was delicious and unique – an unforgettable experience.

When she finished her report of the ecological restoration of the watershed complete with a grand argument about saving the future of drinking water of the city in the most efficient way possible, she realized her story was, at best, partial. She had a story pregnant with statistical data which included all the latest theoretical developments and technologies: the latest cartography, Geographic Information Systems, economic valuations and botanic censuses. However, there was nothing in her story about the two children and the crab and the crunchy taste of oil under the moonlight. Nothing about the women collecting canes in their baskets. Nothing about the local people who used to roam the watershed before it was demarcated for the city. Nothing about those who cannot afford the supply of municipal water. There were no people in her report. There was a city, there was water, there were clouds – but no children fishing crabs. And the taste of crab fished in the midnight is something so difficult to forget that she felt unable to write a report like this again. She could never look back again at urban landscapes independently of the people who inhabit them.

This story, plus/minus the taste of crabs, is not uncommon. Faced with the full canvas of everyday life, the technician, the planner, the expert find a lot of their knowledge and training useless. City masterplans, integrated resource management programs, regional planning all look better in maps extended over the hall of the municipal offices than in the results of their actual implementation in a particular location. Through experience, those same technicians, planners, experts will have to put the people into the urban landscape, to understand what their projects mean to people and how they impact them. Other times, planners or managers get caught in urban environmental politics, without even being aware of or recognizing their dependence on it. In any case, those experts, technicians, planners, managers eventually get caught by the practices of the people who inhabit urban landscapes.

However, this realization is disconnected from the frameworks that inform their work. Rydin, for example, has made a devastating analysis of the prevalence of growth theories in urban planning (Rydin 2013). There cannot be urban landscapes without people, nor people without justice. Why focus on economic growth? Local activists and planners are hardly naïve like the young engineer described above. They may already be committed managers in the tradition of insurgent planners or may have become skeptic urban managers. They may already be taking action which will influence the future sustainability of the city. They know the context, the politics, the messiness of it all. However, the frameworks that justify their actions remain naïve. Critical scholars struggle because faced with the challenge of developing new complex frameworks to look at the city, they may find more inspiration in observing how things actually happen.

In this chapter, we propose that a collective action program to respond to structural injustices can be built starting from within the situated experiences of environmental and social change of urban citizens. When sustainable development action reproduces assumptions of dominant systems, it serves to perpetuate structural injustice, as explained in Chapter 2. One way to challenge structural oppression is to characterize the experiences of those being oppressed, bringing their perspectives to the fore in the design and implementation of sustainability policy and letting them lead such policy. For us, just sustainabilities ideals are a way to do just that from a commitment to postcolonial, feminist and antiracist thought.

Thus, in this chapter, we start from a critical examination of the history of international development thinking, insofar as it has mobilized

sustainability imaginaries. If there is a project of development to be rescued for dignity and emancipation, this cannot be reduced to certain parts of the world (as discussed in the following Section 3.2). Sustainability has been grounded on a specific body of knowledge that claims universality, but that is most often confined to ideals of modernity and progress and reproduces existing modes of domination (Section 3.3). Our proposal, formulated from a just sustainabilities paradigm, is to focus on developing alternatives focusing specifically on what sustainability means from the perspectives of those who are routinely excluded from decision making. Feminist ideas of situated knowledge help us to lay a claim to the generative character of people's experiences (Section 3.4). To locate this in an urban context, we propose a notion of understanding the city as a classroom, as a place for collective learning and unlearning where everyone is a teacher–student and where the most transformative attitude is one of radical openness, following bell hooks' ideas on critical pedagogy (Section 3.5).

3.2 The contradictions inherent to development discourses

Philosophies of progress and modernity are deeply embedded in the concept of development. These convictions are reflected in debates on sustainable development, which are underpinned by the belief that society must always be brought forward, to higher levels of sophistication and order.

The emergence of "development" as an established discourse was inextricably interlinked with the history of colonialism and it is now embedded in postcolonial structures of power. Jonathan Crush's (1995) landmark anthology *Power of Development* analyses the construction of development discourse as it occurred in parallel with the establishment of Europe as a colonial power. In one of the chapters of the anthology, Cowen and Shenton (1995) explain that the concept of development formed in parallel with the processes through which the Western world increased its influence on a global level, through industrialization, the emergence of a capitalist market system, and colonialism, which came to represent ideals of progress. "Development" became the mechanism through which backward civilizations could be rescued and brought towards the ideal conditions of European society. Similarly, the idea of modernity was conceived as an observation of the relationship between the modern and the non-modern (Manzo 1995). That is, societies of capital accumulation, science and technology were compared with "primitive

economies." In this sense, references to time become a discursive tool to lock societies permanently into the past (in associated non-civilization, chaos), while portraying the group in power as belonging to the present and the future. As explained by Buhre (2019: p. 277), "[s]ome forms of government involve rhetorical practices that deny plural temporal intersections. Such denial is a characteristic of domination, and is used to enforce hierarchy, rule, force, and violence."

In Crush's words (1995: p. 9), development is an obsession with the need to "reinvent or erase the past," in which what used to exist is replaced with an optimistic vision of the future. In the post-war world, the idea of development continued to indicate that those groups or nations that did not join the bandwagon to catch up with modernity – the Western model of society – were left behind. Development, therefore, existed in the form of imposition of Western worldviews and social systems in non-Western countries, under the legitimizing banner of modernity and progress. As Arturo Escobar (1995: p. vii) writes in the opening statement of the preface of *Encountering Development*:

> [F]or many years the industrialized nations of North America and Europe were supposed to be the indubitable models for the societies of Asia, Africa, and Latin America, the so-called Third World, and that these societies must catch up with the industrialized countries, perhaps even become like them. This belief is still held today in many quarters. Development was and continues to be – although less convincingly so as the years go by and its promises go unfulfilled – the magic formula.

Many joined in the criticism of development as an imperial, imposed project, as a discourse fixed in European ideals, as a program that never works, and as an agenda to replicate the highly unsustainable lifestyle of the West in the rest of the world (Dasgupta 1985, Sachs 1992). Theorization on alternatives to development followed. Many alternatives followed the concerns of dependency theory. Dependency theory emerged as a critique of the assumptions of modernization ideals, revealing how the industrialized North contained the global "periphery" in perpetual poverty through the structure of the global economy. According to its proponents, following in the footsteps of the West will never lead to prosperity. What was

needed instead was autonomy, disassociation from the global system of production and revival of local economies.

In *Encountering Development*, Escobar outlines an alternative perspective which he calls post-development theory, building on the impulse of grassroots movements resisting traditional development programs. He stresses that post-development is not a question of doing development differently (alternatives *in* development), but of displacing the entire development paradigm and finding alternatives *to* development. According to Escobar, actors promoting post-development share common aspirations: recognition of local knowledge and culture, grassroots resistance and social mobilization, and a critique of universalist scientific discourses (Escobar 1995). Escobar theorizes that these movements may congregate around the production of knowledge, culture, identities and autonomy that may act as a counterweight to dominant Euro-centric discourses. For example, he explores the transformations of indigenous communities in Latin America through the use of new technologies, which defy and transcend the dichotomy between traditionalism and modernity (Escobar 2010). Such reinterpretations allow for a reimagination of the sites of development, as well as a shift in thinking of development as an internalized struggle for a life of dignity. As a discourse of emancipation, sustainability is a strong part of a post-development project. As a discourse of appropriation, development reproduces existing hegemonic systems.

The borderline between imposing a dominant discourse and supporting communities and individuals in their work towards improved living conditions has proven elusive. As Pieterse (2010) points out in his examination of post-development theory, the denial of development as a concept can easily translate into a denial of the agency of the entire global South. While post-development theory effectively identifies the flaws in the contemporary development project, it leaves us with ambiguous clues as to the path forward. If we reject development, Pieterse (2010: pp. 11, 14) asks:

> [W]hat is to be done? Post-development does make positive claims and is associated with affirmative counterpoints such as indigenous knowledge and cultural diversity. It opts for Gandhian frugality, not consumerism; for conviviality, à la Ivan Illich, for grassroots movements and local struggles. But none of these is specific to post-development nor do they necessarily add up to the conclusion

> of rejecting development . . . In the end post-development offers no politics besides the self-organising capacity of the poor, which actually lets the development responsibility of states and international institutions off the hook.

However, there is arguably another view of development, which is rooted in self-realization through emancipation. The most famous proponent of this is perhaps Amartya Sen's notion of development as freedom. Sen (1999: p. xii) argues that the

> Expansion of freedom is viewed, in this approach, both as the primary end and as the principal means of development. Development consists of the removal of various types of unfreedoms that leave people with little choice and little opportunity of exercising their reasoned agency. The removal of substantial unfreedom, it is argued here, is constitutive of development.

This approach builds on Sen's previous work on the economics of development, which views poverty as a form of capability deprivation and development as strategies to strengthen capabilities. This approach constitutes a break from economic interpretations of development, as it emphasizes a range of factors that expand individual freedom: education, health care, political rights, as well as the removal of oppression, whether this is from poverty or tyranny. The key difference in Sen's approach lies in placing the development project in the hands of those affected by deprivation, but at the same time firmly establishing the range of constraining structures that must be tackled by others to allow for realization of individual freedom (such as public services provided by the state or facilitation of conditions to alleviate economic *un*freedom). Sen also helps us break the idea that development transferred from some countries to other countries; instead, with development understood as emancipation, self-determination and dignity, these are objectives that apply in the whole world. However, even Sen's progressive ideas are often read within a liberal individualist framework, which struggles to address the structural inequalities inherent to a post-colonial world.

While these critical visions have made possible a shift in perspective from imposed to self-realized development agendas, they have

also supported the fragmentation of development efforts. Foreign aid has lost ground in parallel with the diffusion of criticisms to development. An article published by the Brookings Institution in 2018 declared that aid was declining so rapidly that soon it would disappear:

> [A]s a share of developing country GDP, multilateral aid flows peaked at 0.43 percent in 1992 and fell to 0.15 percent since then. Bilateral flows bounce around more, but the trend since the 1990s is the same: the ratio has fallen from 1.25 [percent] in 1990 . . . to 0.43 percent in 2016. (Gill 2018)

The shift in focus from state-led assistance towards attention to how a multiplicity of actors can deliver collective goals has also changed because of the growing interest in governance and the long decades of neoliberalism dogma.

Nevertheless, recent years have produced a revitalization of development imaginaries, in particular through its most recent incarnation – the SDGs. The SDGs are presented as a "blueprint for human dignity," thus placing the objective of human flourishing at their core. The central development theme of the SDGs continues to echo traditional interpretations of modernity and Western-centric progress (Ziai 2015). An overbearing emphasis on measuring results can also prevent certain actors from intervening in more emancipatory programs and perpetuate managerial approaches to development. Well-intentioned efforts (such as participation) may constitute weak variants of self-realization. The private sector also supports the SDGs, which raises the question about whether the goals are also open to co-optation.

Still, we agree with Rahman's observation (as cited in Pieterse 2010) that we cannot outright reject all valuable concepts on the grounds of their appropriation. Stating that there is no development, or that all development is an imposition, implies a surrender to the forces of globalization and neoliberalism and walk-over on behalf of multinationals already operating in many countries and reaping the benefits of extremely unbalanced power relations. In the context of globalization and neoliberal policy, the revival of notions of development is an alternative to reclaim the role of the state in public service provision, reclaim human dignity and propose

alternative models of the future. However, the post-development vocabulary has to be brought forward because of its emphasis on social movements, and self-organized emancipatory action. This dual strategy requires a critical engagement with development and an opportunistic engagement with discourses of sustainability and global development, against efforts to privatize resources and reproduce deprivation and marginalization.

3.3 Multiple and situated environmental knowledges

> To imagine that the Western scholar can gaze on development from above as a distanced and impartial observer, and formulate alternative ways of thinking and writing, is simply a conceit. To claim or adopt such a position is simply to replicate a basic rhetorical strategy of development itself. What we can do, as a first step, is to examine critically the rival claims of those who say the language can, or is, being transcended. (Crush 1995: p. 19)

As Crush points out, we need to escape Western-centric universalist paradigms without merely resorting to an alternative dogma. Instead of searching for an all-encompassing guideline for development, we can start from within the experiences and perspectives of those who live with environmental change. The just sustainabilities approach facilitates this shift by decentering debates from the global (and the search for all-encompassing solutions and panaceas), to the local as a site of action. We can also learn much about these opportunities by considering decades of work on individual perspectives as the starting point for environmental knowledge, as presented by the precursors of post-normal and sustainability science and feminist critiques of environmental thought.

The literature on environmental science builds on a long-standing recognition regarding the importance of experience as a driver of environmental knowledge, which relates to how people get to know the environment they live in. For environmental sciences scholars, a crucial question is the construction of knowledge and the valuation of nature of those who live and work in different environmental settings. For example, a seminal paper titled "Knowledges in Action" investigated the perceptions of nature of farmers in the European Union (Burgess, Clark et al. 2000). The study documents the diverging views and languages between agricultural practitioners

and conservation scientists, and how the latter downplays the former as ignorant receptacles of scientific information. Burgess and colleagues write:

> Drawing on their place-specific understandings of nature, farmers and other local people often contest the appropriateness of management prescriptions offered by conservation scientists . . . Whilst agri-environment schemes, especially for vulnerable habitats such as wetlands, are to be welcomed, their success is not guaranteed when institutions who promote these schemes value them as a means of "transferring technology" rather than as an emancipatory process capable of contributing to wider conservation goals . . . Nature in general, and wetlands in particular, might be better aided if scientific conservation were to concede more ground to local knowledge and local specificity. (Burgess, Clark et al. 2000: pp. 13–14)

A similar illustration is provided by van der Ploeg's (1993) examination of potato farming practices in the Andes. His research reveals an abundant accumulation of knowledge that deviates from the universal paradigm precisely through its specificity, links to practice and connection with a local context. As with the case of the European farmers, van der Ploeg documents a tendency of this knowledge to be overlooked by external experts and development managers.

These and similar realizations have inspired calls to improve environmental science through democratization and involvement of the knowledge generated through everyday experience. In *Citizen Science*, for example, Irwin (1995) explicitly calls for "bringing 'the public' and 'science' closer together." From the point of view of citizenship, Irwin interrogates the possibilities to bring citizens into processes of technological development and decision making with a bearing on the environment. These efforts constitute the foundation for the formulation of sustainability science and post-normal science (see discussion on sustainability science and post-normal science in Chapter 6). Today, most scientists acknowledge that knowledge emerges from a negotiated process. The Intergovernmental Panel on Climate Change (IPCC) is an example of this paradigm developed into a process of dialogue where there are deliberate attempts to bring forward multiple voices and multiple points of view (albeit primarily within the bounds of the scholarly realm).

An alternative entry point into these debates is provided by eco-feminist criticisms of universalist knowledge paradigms. Merchant's (1980) *Death of Nature* explicitly linked the oppression of women with the instrumentalization of nature, thereby revealing many of the assumptions that underpin claims of neutrality in scientific knowledge. Merchant accomplished this by revisiting the Enlightenment and the scientific revolution through a feminist reading. She writes (1980: p. 2):

> As Western culture became increasingly mechanized in the 1600s, the female earth and virgin earth spirit were subdued by the machine. The change in controlling imagery was directly related to changes in human attitudes and behaviour towards the earth. Whereas the nurturing earth image can be viewed as a cultural constraint restricting the types of socially and morally sanctioned human actions allowable with respect to the earth, the new images of mastery and domination functioned as cultural sanctions for the denudation of nature.

Merchant explained how this new attitude legitimized the profound and destructive transformation of nature that accompanied industrialization. She argued that, in modern society, the environmental sciences continue to be dominated by such mechanistic worldviews, in which the scientific domains with the strongest claims to reductionist, universal forms are the most highly appreciated (with physics and quantum science at the pinnacle). These approaches are also the ones that are the most oblivious to the whole of nature, and the perspectives most likely to lose touch with the quality and beauty of life. Shiva (1989) launched a similarly devastating critique against Western notions of development, reductionist science and associated interpretations of progress, all to which in her view are attributable violence against nature and women. Shiva shows that there are alternative approaches to understand human relationships with nature and development, as illustrated by the women's ecology movement in India.

For feminist readers, a fundamental problem underpinning Euro-American interpretations of nature is their interconnections with ideas of conquest, which interweave notions of domination of the environment with that of subordinated "others." Stein argues that this is, in part, a result of equating the conquest of "uninhabited" fertile lands – where native peoples became part of the "wild" – with

that of the subjugation of the reproductive body of the female. She writes, on American conceptions of nature (Stein 1997: p. 6):

> [T]he American formulation of nation out of nature was actually a propriative paradigm in which all that is identified with the natural will be subsidiary . . . it was the conquest of the natural continent that was to be the fundamental ground of American identity, for through the mastery of the new land, European settlers recreated themselves as denizens of a new nation.

A related issue is the long-standing dualisms inherent in Western thought, which constructs the world as a series of opposites: human–nature, male–female or reason–emotion. This is a cultural tradition with roots in Greek and Roman society, Christianity and the Enlightenment, which enables control of the non-human and all groups and elements associated with the natural environment: female bodies, indigenous lands or racialized groups or individuals. According to this worldview, man represents reason, spirituality, immortality, agency. Woman and nature represent emotion, embodiment, mortality, primitivism, inferiority. In modern society, this dualism translates into a perceived superiority of science, rationality and modernity, which allows for instrumental views on nature and continued exploitation (Plumwood 2004).

Shiva, Merchant, Stein and Plumwood's analyses deconstruct the assumption that our understanding of nature can ever be objective, gender-neutral or universally applicable. Rejecting these approaches to nature, feminist scholars call for engaging with multiple experiences as a means to generate, appreciate and make visible alternative forms of relations, worldviews and values. At the same time, they warn against becoming re-enchanted with romantic depictions associated with traditional knowledge. As Kathryn Manzo (1995) observed in her contribution to *The Power of Development*, the idea that we can deliberately return to a pre-industrial paradise by intentionally rewinding society to former lifestyles can be as oppressive as the development project itself. The challenge is how to move forward without producing additional forms of oppression.

This is an approach that requires examining what is movement and what is direction. Feminist standpoint theory, as explained by Harding (2004), assumes that production of knowledge is a process inseparable

from the exercise of power. Harding (2004) provides conceptual tools to mobilize what Foucault (1981) calls power-knowledge to question, rather than to reinforce, structural inequalities. It is also a theory that explicitly aims to empower the viewpoints of the oppressed and to legitimize their experiences as central to the production of knowledge, primarily as a contrast to purportedly neutral science. Standpoint theory emerged from the realization that sciences pertinent to women required knowledge produced by women. Standpoint theory calls for a new approach to knowledge:

> The remedy for the inadequate philosophies of science, epistemologies, and methodologies justifying and guiding mainstream research, and the social theories that informed them, according to those theorists, was to start off through and research from women's experiences, lives, and activities (or labor) and from the emerging collective feminist discourses. That is, researchers were to avoid taking their own research problems, concepts, hypotheses, and background assumptions from the conceptual frameworks that they served (the legal, welfare, health, education, economic, military and other institutions). Thus standpoint projects would be "outside the realm of the true" from the perspective of those disciplines and institutions. (Harding 2004: p. 6)

This new approach also requires engagement, rather than avoidance, with the politics surrounding knowledge production, as well as a celebration of difference between groups and individuals as a tool to identify oppression (not only concerning gender, but rather, adopting an intersectional perspective). Standpoint theory reveals that some positions in society are privileged and gain power by the structures that support them. Revealing alternative standpoints and grounding them in knowledge is a strategy to challenge structural conditions. Here, we build on Donna Haraway's approach to situated knowledges (Haraway 1988). Haraway calls for a relegitimization of embodied experiences as the means to construct knowledge of the world (in contrast to unlocated scientific claims). She explains:

> Feminist objectivity means quite simply situated knowledge . . . We need to learn in our bodies, endowed with primate color and stereoscopic vision, how to attach the objective to our theoretical

> and political scanners in order to name where we are and are not, in dimensions of mental and physical space we hardly know how to name . . . But not just any partial perspective will do; we must be hostile to easy relativisms and holisms built out of summing and subsuming parts . . . We are also bound to seek perspective from those points of view, which can never be known in advance, that promise something quite extraordinary, that is, knowledge potent for constructing worlds less ordered by axes of domination . . . The only way to find a larger vision is to be somewhere in particular. (Haraway 1988: pp. 581, 582, 585, 590)

Haraway refers here to what she calls privileging the partial perspective. If we recognize that all perspectives are in principle, partial (nobody ever has a full objective perspective), it becomes easier to see the relevance of alternative viewpoints. Partiality, not universality, should be the condition on which voices are heard. Rather than falling into an endless relativistic morass where all views of the world are equally valid, Haraway wishes to seek out situated knowledge that directly challenges prevailing assumptions. This is a perspective that enables emancipation on the basis of knowledge gained through multiple experiences. This is also a perspective that calls for responsibility over one's knowledge and agency.

The search for partial perspectives is a powerful strategy to validate overlooked experiences and identify narratives that are missing in conventional characterizations of nature. For instance, as Finney (2014) argues, environmentalism in the West has been constructed around white discourses. Narratives of black African Americans reveal completely different experiences of the environment, as well as knowledge about and care for nature that are missing from mainstream renderings of environmental movements. Both environmental activism and mainstream sustainability thought have a complex inheritance that needs to be critically examined. It is our responsibility, as scholars, to engage with the possibilities for emancipatory action embedded in environmental justice movements and radical ecologies.

3.4 The city as a classroom to learn socio-ecological relations

If we are departing from radical ecological thought as a form of collective learning for situated, experiential knowledge, then the city could be the "classroom" for learning about socio-ecological change and the

formation of social movements. The "city as a classroom" is an idea that departs from bell hooks' critique of the traditional classroom as a place where knowledge is uncritically transmitted from the teacher to the student and "where styles of teachings reflected the notion of a single norm of thought and experience, which we were encouraged to believe was universal" (hooks 1994: p. 35). She reconstructs the classroom as a place for radical pedagogies that help the growth of everybody in the classroom. Teachers become students and students become teachers, and all student-teachers become responsible for their growth.

Like bell hooks, we engage with Paulo Freire's (1990) idea of mobilizing "pedagogies of freedom" to facilitate social change for sustainability. He described pedagogies of freedom as strategies to promote the emancipation of people so that they actively participate in social movements and take responsibility for their freedom, defined in their terms. For environmental problems, this means to enable people to take responsibility for their milieu, and recognize our collective role in creating sustainable futures. As explained in the previous section, postcolonial and feminist critiques help us recognize how dominant and historically developed ways of knowing our cities may restrict our possibilities for self-determination and dignity.

Rethinking the city as a classroom is also a means to engage with the realities of urban life. This means engaging with the articulation of social movements across the city. Also, the city as a classroom – as a place of continuous learning – also recognizes the foundation of such learning on socio-ecological relations. The example of the urban agriculture program of Rosario, Argentina, has inspired radical activists about the possibilities to use municipal-led initiatives to create a broader change of consciousness towards new ways of producing food outside of the dominant agribusiness model (which in Rosario results in a "sea of soya"). Marginal spaces are transformed into thriving urban allotments where everybody learns (Dubbeling, Bracalenti et al. 2009). One of the members of the municipal team, who acts as seed guardian, embodies the process of learning in which the indigenous Guarani knowledge supports a broader range of hybrid practices and in which program managers learn from food growers continuously about patterns of growth and market dynamics. The success of the program follows the transformation of Rosario in a place of learning food growing. bell hooks' radical pedagogies project requires engaging with a

"politics of location" both in terms of the social positionality of all teacher-students involved in the learning project but also in relation to diverse relationships of proximity and distance with objects and things. Since the city refuses characterization in fixed ways – the city is not simply an actor, or a container, or an amalgamation of flows – it always exceeds any representation of knowledge put on it and hence, it always opens up new opportunities for learning.

Following bell hooks' own principles on teaching to transgress, we can outline some principles to think of the city as a classroom (hooks 1994).

- A classroom is an exciting place. To learn we need to reengage with the city in imaginative ways that focus on its potentiality and its spaces of hope. Rediscovering and challenging what is normal is one of the ways to re-enchant the city to learn from it. Collective action should disrupt the putatively serious processes of imposing decisions on others to create a sense of excitement about the possibilities for collective learning.
- In the classroom, everybody learns. There is no use in engaging with the city as a classroom if one has no intention to learn, if the transformation does not involve oneself. There is not necessarily a teacher and a student, but rather complexes of student-teachers that grow together. There are different forms of engagement with the city but each form brings something. Listening to others is a precondition to express an opinion: learning involves what bell hooks terms "radical openness," a commitment to listening before forming an opinion. In a classroom community "our capacity to generate excitement is deeply affected by our interest in one another, in hearing one another's voices, in recognizing one another's presence" (1994: p. 8).
- Teaching is a performative act. Teaching is a variable, ephemeral act that needs to be continuously engaged with a dynamic, changing context. Like in a performance, different teaching roles – professor, facilitator, coordinator, planner – may gain relevance to varying stages of the project.
- The city as a classroom facilitates social learning. First, the learning process has to be collective. Second, learning has to be directed towards the relations between different actors rather than by changing the nature of learners themselves.

There is a need to transgress dominant, neo-colonial paradigms of economic development and political debate looking forward instead to transgression and transformative learning. Transformative learning is often resisted, however, because it is scary and challenges one's own boundaries – transgressing is frightening. Nevertheless, transformative learning is something that happens everyday in urban environments, as learning becomes a mode of being in cities where urban knowledge cannot be specifically located in any specific sphere or actor, but rather is distributed across multiple spheres of the city (McFarlane 2011). Like McFarlane, we believe that recognizing the forms of learning that happen aside from hegemonic circuits of knowledge production – the voiceless, the marginalized – reveals what can be known in relation to spaces of dwelling in urban areas. Knowledge/power is of vital importance to deliver liveable urban spaces, preserve the environment and deliver just sustainabilities, and thus, taking control of environmental knowledge is akin to taking control of the city.

3.5 Decolonizing environmental governance, decolonizing the self

A reflection on the possibilities of decolonizing knowledge requires starting with the recognition of the privileged role that we play as white, European scholars being able to put down in words our interpretation of what just sustainabilities is and more broadly, what we believe is a sustainable, just future for all. Our perspectives are necessarily tainted by a particular education in classrooms which were boring, hierarchical and emphasized individual competitiveness over collective learning.

At the same time, we face a responsibility to enable the recognition of multiple efforts towards just sustainabilities that already take place around the world. We have the opportunity to provide an account which, without any aspiration to be definitive, makes a call for recognizing the multiple forms of learning that already happen in cities looking to deliver environmental sustainability and social justice from the perspectives of those who have already attempted it. This book emerges from the gratefulness we feel towards other women and thinkers who charted the way before us. Some of their voices are reflected directly in this book; some others run through our blood as the energy that keeps us moving forward. One of those voices is of course bell hooks', and her commitment to being thankful:

> I am grateful to the many women and men who dare to create theory from the location of pain and struggle, who courageously expose wounds to give us their experience to teach and guide, as a means to chart new theoretical journeys. (hooks 1991: p. 11)

Both Paulo Freire and bell hooks have been painfully aware of their own biases, and keen to engage with processes of revision of their practice that renewed their theory and reenergized their practice. The idea of radical openness, again, constitutes a starting point towards learning. Radical openness is an attempt to withhold judgment about others. It requires recognizing our common humanity. bell hooks argues that if critical thinkers attempt to radically separate their perspectives and positions from the problem or issue at hand, they will be able to mitigate the effects of the fundamental (and potentially socially harmful) assumptions on reasoning. When we speak about the marginalized or the voiceless, there are a lot of assumptions about who they are: the only way to truly hear them and to hear their views is to suspend such assumptions and engage with their positions. Radical openness requires courage. It is the only way forward.

We have written this book in the same spirit of taking stock and moving forward. We offer engagement with the theory of just sustainabilities as a feminist standpoint to deliver radical ecologies and emancipatory development. Just sustainabilities is a framework for inspiration rather than a universalist account of how the world can become more sustainable. The emancipatory concerns that inspire the theory mean that just sustainabilities is a living, changing theory and one that requires remaining radically open to new conceptualizations and experiences.

4 | PLANNING FOR JUST SUSTAINABILITIES

4.1 Introduction

For those of us who in the late 2000s grew enchanted with the possibilities to deliver effective responses to global challenges from within cities, Debra Roberts has been a model of a scientifically engaged practitioner or a practice-engaged scientist. Her climate change work in eThekwini municipality has been widely studied and admired (Anguelovski and Carmin 2011, Carmin, Anguelovski et al. 2012, Anguelovski, Chu et al. 2014).

In 2015, Debra Roberts gave a heartfelt keynote speech to the Program on Ecosystem Change and Society (PECS) of the Future Earth core-project. She outlined her journey from academia to practice, and how she became an identity-shifting scientist-practitioner. She explained that the journey to practice needs to be done under no illusions: that deception is common and often successful, that science does not provide any silver bullet, and it is regarded with suspicion, and that any success depends on a network of committed practitioners who "have your back" and that you need to cultivate.

In this context, she argued, what matters is the ability of practitioners to mobilize a particular brand of "guerrilla street science" that explains how knowledge is mobilized and put into action in local governments and other institutions advancing local action building unexpected forms of power/knowledge. She described a practice-universe in which action depends on networks of agents of change, committed to taking risks. Agents of change can bring together multiple, on-the-ground experiences.

Roberts' personal experience contrasts with the calls for action that have permeated sustainable development agendas under the assumption that action results from orderly processes of coordination between knowledge and regulation. Take for instance the definition of local authorities in Agenda 21:

> Local authorities construct, operate and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations, and assist in implementing national and subnational environmental policies. As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development. (UN 1992)

They may play a vital role indeed, but most often, local authorities are just coping with delivering day-to-day services, let alone delivering innovative sustainability programs. In 2016, Roberts argued that the New Urban Agenda (NUA) was characterized by a policy–practice disconnect because the language of the NUA did not speak to practitioners like her, already engaged in guerrilla street science. Like Agenda 21, the NUA reproduced well-known problems in sustainable development thinking: the idealization of the urban as a clearly demarcated area of operation, the assumption that local authorities' competencies are established and coordinated with other parts of the state, and the emphasis on orchestration as the central mechanism of governance.

In this chapter, we respond to Roberts' call to examine the results of guerrilla street science about sustainability around the world. Our analysis follows a systematic examination of sustainability actions that are already taking place. What is the contemporary landscape of sustainability action in urban areas? And to what extent does this landscape reflect an engagement with the four principles of just sustainabilities?

To examine these questions, we compiled a sample of 400 initiatives from 225 cities in a database. Specific details of the methodology were published in Castán Broto and Westman (2016). In summary, we selected a heterogeneous group of cities, including 41 cities from Europe and former Soviet states, 22 from North America, 41 from Latin America and the Caribbean, 52 from the East Asia Pacific and Oceania, 20 from South Asia, 23 from North Africa and the Arab states in the Middle East and 33 in Sub-Saharan Africa. The cities in the sample face different kinds of development challenges, due to the variation in socioeconomic characteristics and their geographic location. For each city, we recorded at least one flagship initiative which advances sustainability objectives explicitly. In total, 400 sustainability initiatives were included in the database. This is

a very partial view on the variety of sustainability interventions but enables an assessment of the inclusion of justice-related principles in sustainability action. Or better, it enables an assessment of the limited attention that justice-related principles receive in initiatives that should have those values at their core. Next, we evaluated to what extent each action met the just sustainabilities principles. Following this analysis, Chapters 5–8 present an analysis of how the principles are being advanced in current practices of sustainability (improving well-being and quality of life, meeting the needs of present and future generations, justice and equity in recognition, process, participation and outcome, ecosystem limits).

Is there a possibility to reimagine planning in ways that advance just sustainabilities? Watson (2009) has called for reimagining planning recognizing the highly varied interactions that happen across urban space (between attempts to govern and attempts to survive), and hence, by recognizing the multiplicity of actors and conflictive perspectives that planning brings together. If planning is the means whereby states gain authority over spaces and territories (Watson 2009), there is a need to reclaim planning to address structural inequalities and support the progressive attempts of urban communities to deliver a fair future for all.

Before moving into an examination of each of the principles of just sustainabilities, we provide, in this chapter, an overview of sustainability practices to understand the changing role of local authorities and practitioners in delivering sustainability in local contexts. Just sustainabilities discourses reclaim both sustainability and planning as a means to facilitate change in urban environments. Reclaiming planning requires recognizing how different claims to authority and knowledge coexist in urban areas. In many cases, local governments are important actors that facilitate actions to advance just sustainabilities. Other times, just sustainabilities action emerges from within specific experiences and is led by multiple actors in the city, including community-based organizations and civil society networks.

The following section provides an overview of how cities have been brought to the forefront of environmental action and with what consequences (Section 4.2). In Section 4.3 we present a descriptive overview which maps the extent and variation of local action for sustainability in multiple urban settings around the world. The final part of this chapter revisits the argument about the need for planning to

deliver just sustainabilities as a means to integrate diverse views on the future city and how to achieve it. The chapter concludes with an overview of the quantitative analysis of the database, which demonstrates that while just sustainabilities principles are rarely explicit, many of their progressive concerns are already part of ongoing action and part of the discourse of scientist-practitioners who take risks every day to practice their particular brand of guerrilla street science.

4.2 Bringing cities to the forefront of environmental action

Sustainable development brought shifts in conceptualizations of the function of local authorities. Sub-government units were traditionally depicted at the bottom level of a "cascade" model of governance (Bulkeley and Betsill 2003). This model explains how national governments adopt regulations, goals and targets that eventually are passed through a linear, top-down hierarchy to lower levels of government for implementation. However, in the 1990s and 2000s, this static model of neatly divided responsibilities was disrupted as it became evident that local governments enjoy independence and agency beyond that directly granted by higher level government offices.

Novel interpretations of the political role of local government emerged, especially in relation to climate change debates where local authorities adopted a visible and leading position (Bulkeley and Betsill 2003, Betsill and Bulkeley 2007). Scholars on cities and climate change have seen their arguments for local-level action ratified by actual practical experiences either within their city or in city networks, such as ICLEI, Cities Alliance or the C40 (Kern and Bulkeley 2009). Municipal climate leadership gained recognition in the notable absence of action at the federal or central government level, where it filled a political vacuum (Linstroth and Bell 2007). These actions were captured by terms such as "policy entrepreneurship" (a concept borrowed from political scientist Kingdon, referring to individual moments of opportunity to influence policy outcomes) or "law-making from below" (Osofsky and Koven Levit 2007), denoting an inversion of flows of authority.

The perception of local government as having opportunities to deliver climate change action also brought it to the forefront. Strategies of "issue bundling" or the identification of co-benefits allowed local authorities to link climate programs with other urgent agendas, such as air pollution and transport development (Betsill

2001, Bai 2007), often with the additional benefit of cost savings through energy conservation (Kousky and Schneider 2003). Cities also adopt sustainability programs as an economic (re-)development strategy, which in successful cases can lead to international recognition (Holgersen and Malm 2015). These dynamics contributed to what was then described as a "race to the top" in which many cities competed to claim leadership in sustainability policy (Schreurs 2008).

Discourses of equity and justice also became more visible in debates around sustainability and climate change, particularly in the years that followed the tragic climate change conference in Copenhagen in 2009 (Bulkeley, Edwards et al. 2014). Many found those concerns already reflected long-standing questions in urban policy. The declaration adopted at Habitat I, 1976, in Vancouver, already stressed the imperative of providing basic needs for all citizens, without discrimination based on "race, colour, sex, language, religion, ideology, national or social origin or other cause, in a frame of freedom, dignity and social justice" (UNCHS 1976: General Principles). The Habitat II Declaration included separate sub-chapters on the enabling approach and the need for participation and gender equality. However, the emphasis on competitiveness and privatization that characterized mainstream thinking in the 1990s meant that these ideas often were ignored or, even worse, appropriated (see Chapter 2). Ideas of equity and justice have inspired the main debates leading to the adoption of the NUA at the Habitat III conference in Quito. Equity and justice appear to be again at the forefront of the conversation. The very first statement of the document declares: "The New Urban Agenda represents a shared vision for a better and more sustainable future – one in which all people have equal rights and access to the benefits and opportunities that cities can offer" (UN-Habitat 2016a: Foreword).

The integration of justice and equity into urban planning practices has always been challenging. While urban sustainability plans and associated indicator frameworks have proliferated since the 1990s, these often lack explicit attention to justice dimensions (Warner 2002, Pearsall and Pierce 2010). Pearsall and Pierce (2010) demonstrate in a study of American municipalities that access to environmental benefits (such as green space and mobility) and general quality of life relatively often are addressed in sustainability plans, while distribution of negative impacts (e.g., incidence of pollution) and participation in decision-making processes, especially with

regard to marginalized neighborhoods, is rare (see also Chapter 7). The inclusion of representatives of marginalized communities or environmental justice activist groups in urban planning can support the integration of justice concerns, but that alone is not sufficient to ensure their voices are acted upon. This is illustrated, for example, by the process of determining the details of waste management and green space in New York (Rosan 2012) or in the provision of "green collar jobs" (McKendry and Janos 2015).

Efforts to include dimensions of justice in urban sustainability programs can also be rendered ineffective through limitations imposed by the dominant paradigms of privatization and efficiency. Sustainability planning in cities is shaped by entrepreneurial pursuits (cf. Harvey 1989) of ensuring economic growth and attracting global capital. These efforts align poorly or even directly conflict with the promotion of social justice, for instance by removing housing for low-income populations, contributing to gentrification or prioritizing economic development in high-tech industries. As documented by Sze (2006), the transformation of New York from a manufacturing hub into a world city leading in finance and real estate took place hand in hand with ongoing struggles related to pollution (and asthma), energy, waste and sewage. Here, the environmental justice movement constituted the "front lines of resistance" against processes of urbanization that resulted in increasingly unjust city environments.

What we are seeing now is that attempts to move debates on environmental justice beyond the Anglophone context that dominates most of the literature is starting to show the different entry points for action that emerge at different scales (Williams and Mawdsley 2006, Fisher 2015, Anguelovski, Shi et al. 2016, Martínez-Alier, Temper et al. 2016). There is a need to situate environmental justice movements in relation to a multi-actor planning process that recognizes the multi-layered forms of knowledge that matter in the city, but this can only happen from the perspective of what constrains movements and what kinds of action already are taking place on the ground. The objective is not only to foster new forms of action but, rather, to take stock of the work that is already happening.

4.3 Local environmental planning tools and approaches

Urban environmental challenges manifest at different spatial scales simultaneously, and thus they need to be tackled with a

range of initiatives at different levels. While local authorities have multiple policies and planning tools at their disposal, many policy issues are kept within the jurisdiction of central governments. The extent to which municipal authorities exercise control over the urban environment differs across political systems, with a higher degree of authority exercised in comparatively decentralized systems. Further, national governments have a definitive influence on local authorities' initiative and capacity to undertake actions for the urban environment, for example, through their national urban policies (Turok and Parnell 2009).

However, recent work has shown that city authorities use a variety of tools to manage issues in different policy sectors. One key approach is the development of multiple partnerships, sometimes with the adoption of an "enabling mode of governance" to facilitate simultaneous action and extend the capacity to deliver environmental action (Bulkeley and Kern 2006; Bulkeley, Schroeder et al. 2009). This is evident in the initiatives of our database. These include a majority of initiatives led by local actors (55%) but also led by civil society (24%), the private sector (15%) and other government actors, reflecting the diversification of actors leading sustainability action at the local level.

What remains constant is the dominance of sectoral approaches to sustainability action despite the numerous calls to transcend institutional structures divided into silos. As our database shows, most initiatives refer to a sectoral conceptualization of action. In the following section, we review the most common sectors that appear in the database: water, waste and sanitation, mobility, land transformation and conservation, and energy.

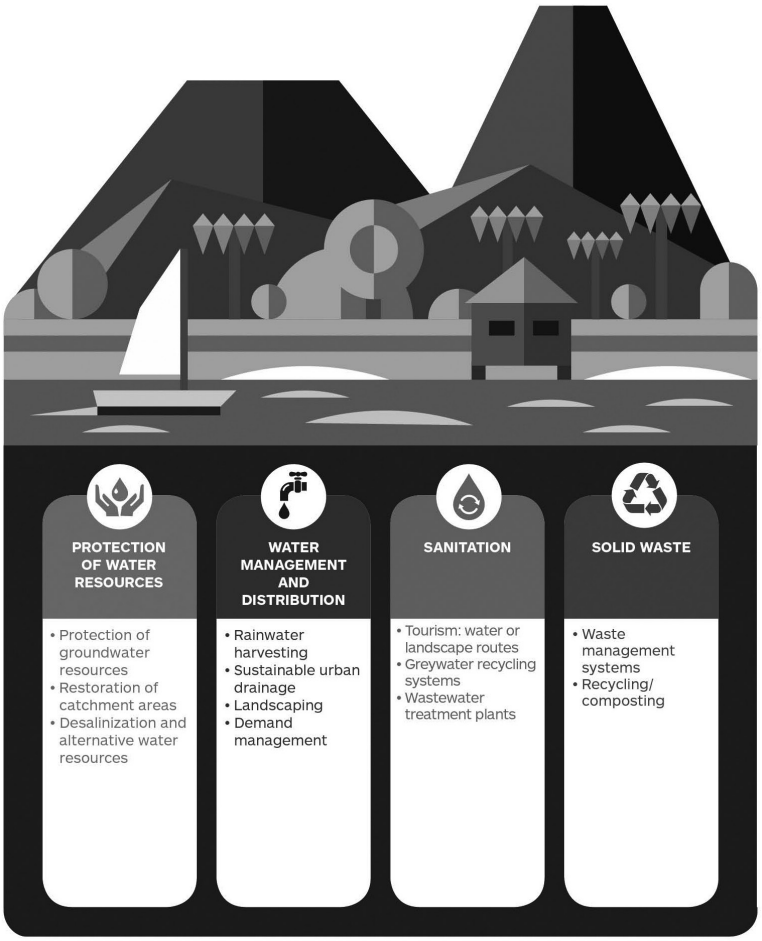
Water, waste and sanitation Water, sanitation and waste services in cities have huge implications for justice and equity that often go ignored. For example, protecting urban water bodies and combating pollution can have a major positive impact on city dwellers that depend on these resources. Likewise, provision of sanitation and waste management services has the potential to improve the lives of the urban poor radically, but this will not be the case where access continues to be unevenly distributed according to socioeconomic status, race or gender and if informal settlements are overlooked. These questions are related to the distribution of environmental "goods"

and "bads" and are thereby directly linked to environmental justice concerns. However, justice is not always central to the delivery of water, waste and sanitation systems.

For example, large-scale introduction of water cleaning equipment and sewage infrastructure, often supported by international banks and other international donors, is a type of intervention that has had an enormous impact on both human health and the environment over the past decades. This is the case across all geographical regions, illustrated by projects such as the Shanghai Environment Project (Shanghai, China), providing potable water for 8 to 10 million inhabitants, the Guanabara Bay Depollution Program (Rio De Janeiro, Brazil), providing water infrastructure with benefits for 1.7 million people, the Guaire River clean-up program (Caracas, Venezuela), expected to benefit 500,000 inhabitants, the Tehran Sewerage Project (Iran), with wastewater collection benefiting 2 million people, or the restoration of the Sokolowa River in Lodz (Poland).

When considered from an environmental planning standpoint, interventions related to water are often directed towards the securitization of natural resources rather than improving the lives of urban citizens. Also, too often water measures are concentrated on formal mechanisms of water and waste provision, rather than looking at the diversity of mechanisms that operate in a single city (Figure 4.1). For example, in one single city such as Bangalore, several formal and informal mechanisms for service provision coexist, ranging from self-provision through open boreholes that encroach on the city's water table, to public provision of water from the Cavery River with the additional capital and energy costs of distribution. While developments for the rising higher classes may be able to access water relatively cheaply by digging bore holes, communities are routinely faced with water shortages and many rely on private markets where they pay a more expensive price for water.

Provision of resources and services can also be analyzed from a perspective of participation and empowerment in decision making and delivery (procedural justice, see also Chapter 7). There is a variety of arrangements whereby the poor access basic water and sanitation services, from self-provision to direct provision (whether this is on a charitable or commercial basis), to state provision either directly or indirectly through sub-contracting (Allen, Dávila et al. 2006, Allen, Hofmann et al. 2008). The empirical evidence of diverse



4.1 Mainstream examples of measures to deliver urban sustainability in the water and waste management sectors (credit: Louise Harvey)

and hybrid practices of service provision has led to a growing interest in understanding how these services can be provided through informal mechanisms. One key factor is the need to recognize the limitations that people face in self-provision of water and sanitation services, which needs to move beyond established ways of thinking. For example, development scholars have long emphasized the need to educate urban citizens to prevent open defecation (Foster and Briceño-Garmendia 2010) without recognizing how people depend

on open defecation as a coping mechanism (Desai, McFarlane et al. 2015) regardless of the risks to which it exposes them, especially for women.

In many cases, the co-production of water and sanitation services, through the participation of communities in various stages of service production, from planning to implementation, has improved service provision in cities. It also provides an avenue for empowerment without displacing responsibility for service provision away from the public sector (Allen, Hofmann et al. 2008, Mitlin 2008, Satterthwaite, Mitlin et al. 2015). Thus, involving communities in the provision of sustainable water and sanitation, for example through the provision of loans and the training of their members in the construction of toilets and new technologies, has become a vital way of ensuring service provision in countries like Zimbabwe, Malawi, Tanzania or the Philippines.

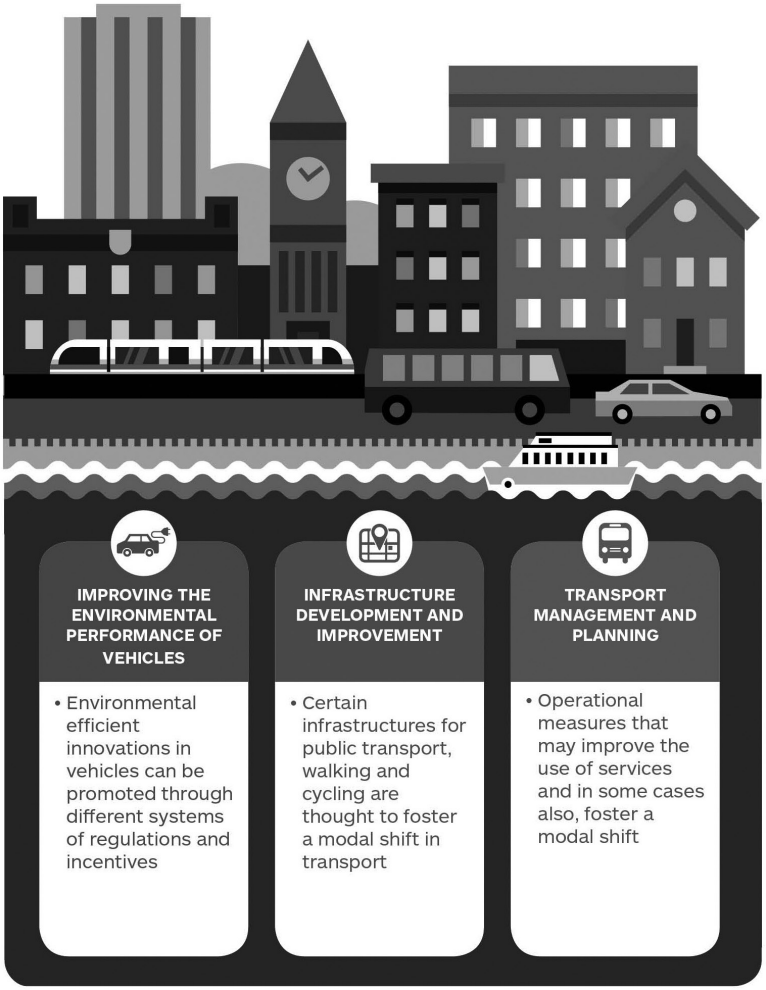
Another strategy that has contributed to far-reaching results in the area of sanitation is the promotion of low-cost solutions that can be provided in a DIY manner and generate multiple benefits for local communities. One leading example is the Lesotho National Sanitation Programme, launched in 1981, which adopted a self-financed latrine construction approach. Over 20 years, the program was implemented through a partnership between government units, the private sector and donor agencies, with loans and provisions made available for low-income households. The Ventilated Improved Pit (VIP) latrine helped increase sanitation cover in urban areas from 30 percent in 1980 to 80 percent in 2002.

The urban poor and marginalized groups may play a crucial role in ensuring the recycling of solid waste, adding value to the recycling chain at every stage, through their collection, sorting, preparation and trading. Their role is often associated with stigma, may have direct health consequences and may lead to a perpetuation of low social and economic status (Wilson, Velis et al. 2006). Thus, a step that cities can take is to support the informal waste management sector, first by studying and understanding their role and then by addressing their direct needs, by improving their health and livelihoods. For example, the Waste and Citizenship Forum in Belo Horizonte in Brazil was originally formed from an association of informal waste pickers. The organization has signed an agreement with the municipality that provides waste collector communities with

subsidies for administrative expenses, provision of waste containers and education for sorting waste. The mobilization has resulted not only in better urban waste management but also improved working terms and a more positive public image for waste collectors.

Mobility As with water and sanitation services, access to mobility is essential in meeting the needs of urban dwellers. Transport policies are shaped by the complex interrelationships between mobility demands and the production of poverty and inequality in the city (Lucas 2012, Vasconcellos 2014). Transport access bears direct influence on livelihood opportunities and social capital (Olvera, Plat et al. 2003). From a policy perspective it is useful to distinguish physical access, which is the uniform possibility to enter or exit a means of transport and depends only on location, from accessibility, which is a relative property which depends on access but also on a number of other conditions that enable the use of such means of transport. For example, people who depend on a wheelchair may be unable to access public transportation means if they lack appropriate lifts or ramps to allow access (Shakespeare 2013). Gender-based violence may also be a factor that influences women's choices to access public transport (McIlwaine 2013). Just and sustainable transport policies thus need to respond to the mobility needs of vulnerable users (Levy 2013).

Many approaches can advance just sustainabilities through transportation, especially policies that remove physical barriers to walking and cycling, those that facilitate access to public spaces and those which challenge perceptions of risk and insecurity such as giving opportunities to learn to ride a bicycle (Nkurunziza, Zuidgeest et al. 2012). One key aspect is that any intervention, even relatively progressive mass transit systems, needs to be developed taking into consideration structural drivers of inequality, cultural understandings and current patterns of urbanization if they are not to reinforce current barriers to mobility, especially further impacts such as real estate prices (Donaldson 2006, Munoz-Raskin 2010). While there are opportunities for achieving just sustainabilities through transport planning, these will depend on the extent to which transport addresses mobility needs, rather than transportation, in relation to people's limitations. Further, the provision of transport solutions in informal areas is crucial to addressing inequality in many cities in the global South.



4.2 Mainstream examples of measures to deliver urban sustainability in the mobility sector (credit: Louise Harvey)

Figure 4.2 presents an overview of common transport policies. Policies to improve the environmental performance of vehicles may enable a rapid reduction of pollutant emissions while the costs for replacement are often born by users and private providers, although the government may provide incentives to facilitate the adoption of new technologies. Vancouver's Electric Vehicle (EV) adoption, for example, includes public charging facilities in community centers, regulation concerning

provision of EV stalls in commercial buildings and apartments, charging at sites of cellular infrastructure, and car-shares. There are signs that innovations are fostering a rapid adoption of electric vehicles, such as electric bicycles in cities in China. However, the extent to which they can be said to be more sustainable than other means of transport depends on whether they depend on fossil-fuel dependent power plants, rather than renewables, for charging (Cherry, Weinert et al. 2009), the environmental impact associated with extraction of materials required for battery production, and related life cycle analyses.

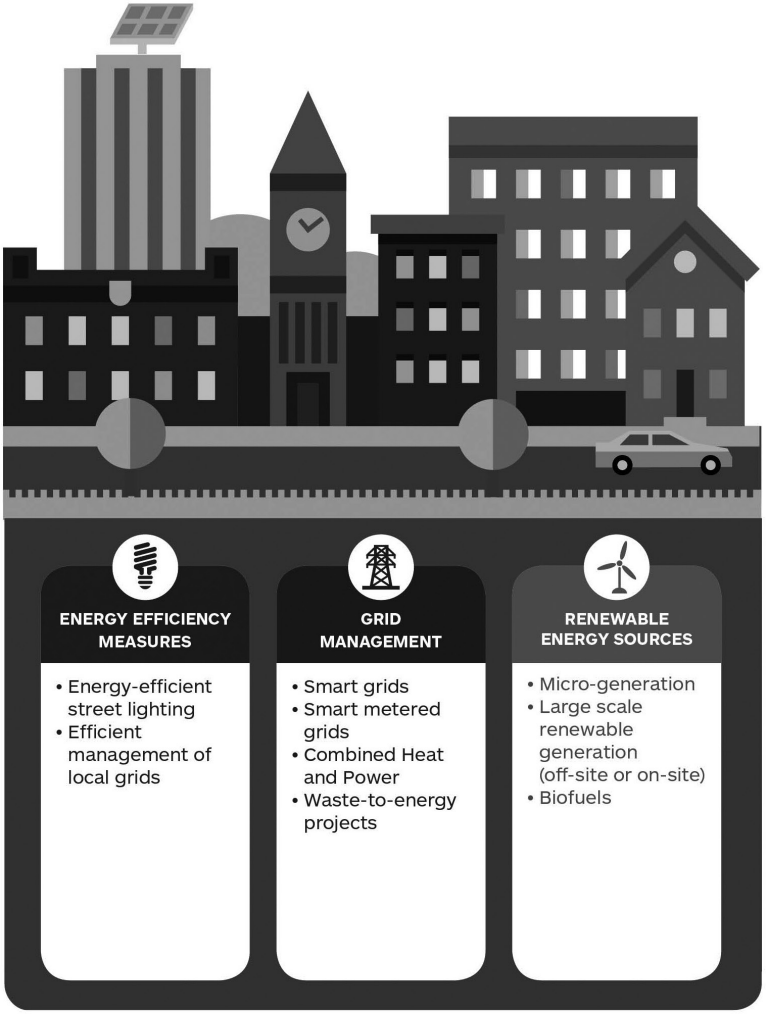
There is also a need to be cognizant of the ways in which support for "environmentally friendly" vehicles reinforces current patterns of inequality in the transportation domain. EV programs, for instance, are unlikely to benefit populations unable to afford or to drive a car. A key objective for many environmental planners has been to re-envision the city beyond being a space for car-oriented mobility (Barter 2004). Some innovative approaches have emerged in the last decades that speak of rethinking mobility and the provision of urban transport beyond individual car ownership. For example, bike sharing schemes are now widely available in hundreds of cities worldwide (Shaheen, Guzman et al. 2012, Parkes, Marsden et al. 2013). However, these bike sharing schemes are not always connected with the needs of poorer citizens (McLaren and Agyeman 2015). Bogotá has been an example of a city in South America where municipal action has dramatically improved the walkability of the city, with benefits for all citizens.

Provision of public transport for marginalized neighborhoods may contribute to the redistribution of benefits beyond mere access to mobility. For example, public transport infrastructures such as bus rapid transit (BRT) systems or cable cars may provide livelihood alternatives and connect deprived areas with the rest of the city (Brand and Dávila 2011). However, the possibilities of ensuring equitable access to transport depend on the operation of the systems and how it matches existing needs. In Cali, Colombia, for example, empirical data suggests that middle-income citizens may have more accessibility to the BRT system than poorer users (Delmelle and Casas 2012). Para-transit transport, that is, informal transport services without official sanctions and most often delivered with small vehicles such as rickshaws, mini-buses or motorcycles, is often misunderstood in transport policy (Cervero and Golub 2007). Cycle rickshaw trollies and passenger cycle rickshaws facilitate transport with reduced environmental impacts and

offer a way out of poverty for many urban dwellers (Sadhu, Tiwari et al. 2014). Low-income families are the most dependent on informal transport solutions (Guillen, Ishida et al. 2013). While the side effects of para-transit systems need to be investigated, there is also a need for local governments to work together with these actors to improve the overall transport system. Transport opens up an area of intervention which links environmental quality and livelihoods and, hence, can provide opportunities to advance just sustainabilities.

Energy and decarbonization Planning for urban energy provision and decarbonization presents complex challenges, especially when coupled with justice considerations. On the one hand, steps have been taken in cities around the world to improve the share of renewables in the overall energy provision and to improve the efficiency of energy systems. Figure 4.3 outlines some common measures that local governments, utilities or their partners may take or are already taking to reduce carbon emissions and improve the efficiency of their infrastructures. This includes considering the use of renewables at different scales, on-site or off-site, grid management and the use of biofuels or waste as additional sources of energy. These are measures that governments may introduce, or they may provide different regulatory or financial incentives to favor their adoption, most often in synchrony with national energy policies. However, none of these measures constitutes a fundamental challenge to existing systems of provision.

The other side of the coin is that, sadly, the emphasis on sustainable energy and emissions reductions has often been dislocated from debates about energy access and the health impacts of determined energy provision systems. At present, there is a dearth of policies that target the needs of the urban poor directly, and which provide energy as people need it (Castán Broto, Stevens et al. 2017). That is, a lens of distributive justice is often missing from energy policy strategies. Despite the deployment of centralized networks in many African cities, many families continue to rely on charcoal to cook and paraffin to light their houses. Sometimes this is a question of affordability. Other times, the prevalence of these fuels relates to the specific urban cultures and how they are integrated into local economies and livelihoods. While in some cases, fuels like charcoal may be the only means to ensure access to a warm meal, they expose citizens to many risks including the pollution of the household environment and the



4.3 Mainstream examples of measures to advance urban sustainability through decarbonization (credit: Louise Harvey)

increased risks of accidents, especially for children. A better understanding of the complex relationships that energy fosters in urban society is a priority for research.

At the same time, sustainable technologies may provide new opportunities for service access in households. Retrofit projects in informal areas in South Africa, for example, have combined

informal area upgrading with energy efficiency improvements or alternative energy adoption. Examples include Climate Proofing Cosmo City in Johannesburg, which introduced solar water heaters and compact fluorescent lamps in an informal settlement, providing both light and heating and reducing energy poverty for low-income households. The challenge is to move away from top-down solutions that impose a particular way of looking at local challenges and learn instead from the solutions that emerge from specific contexts of action. Some low carbon housing technologies have been successful in terms of their diffusion and their adoption by low-income groups. One such technology has been solar water heaters. Solar water heaters have spread through cities in countries as diverse as India, China or Brazil, sometimes creating a prosperous industrial sector associated with them. Low-cost technologies have proven particularly effective in Brazil, where they have helped to attain double benefits by improving the conditions of housing with less overall carbon emissions than standard models (Ilha and Ribeiro 2012).

The literature on energy transitions suggests that there may be a case for a total re-imagination of the regimes that control energy provision not just by substituting fuels or sources of energy, or by attaining marginal efficiency gains in the energy system. For example, the growing popular interest in micro-generation and the calls for people to find means to provide for their energy suggest a move away from the paradigm that centralized networks managed by private utilities will provide the most efficient and hence the most sustainable way of meeting urban energy needs. Thus, some have called for more emphasis on the possibilities of post-networked urbanisms (Coutard and Rutherford 2015). While the potential of post-networked systems, such as mini-grids, to reduce poverty in rural areas is well-established (Yadoo and Cruickshank 2012), their role in urban settings is not well understood.

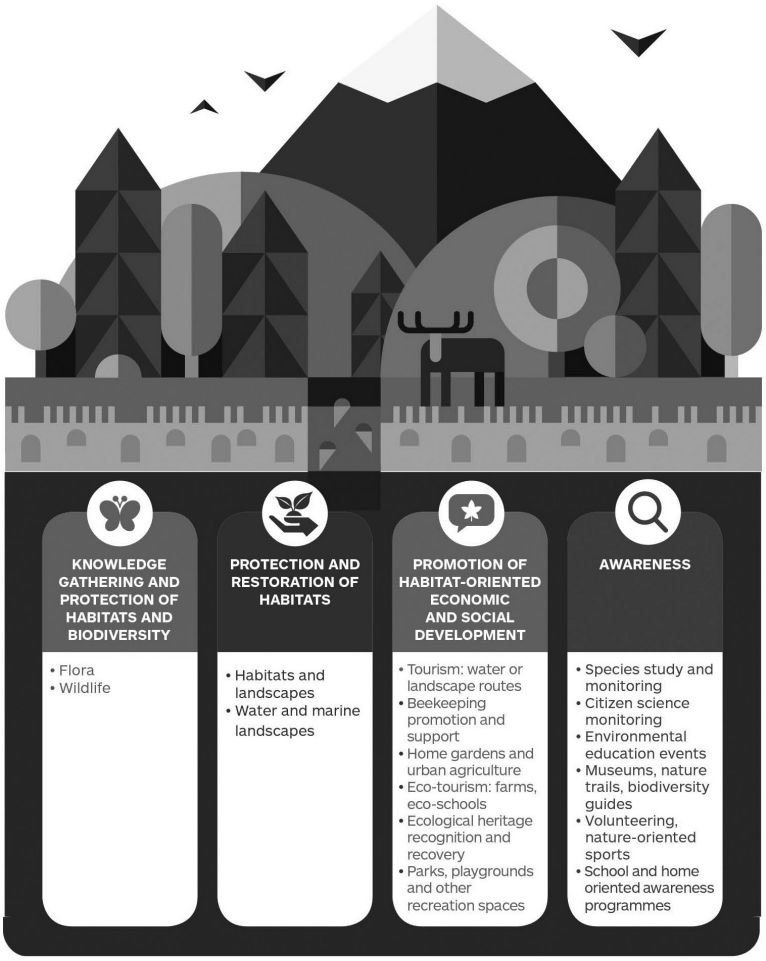
Resources need to be understood in terms of flows and the teleconnections that become established within and beyond the city (Seto, Reenberg et al. 2012). With more complex understandings of urbanization has also come the realization that the spatial dynamics of the city are determined by how such flows are established. This is particularly true of energy infrastructure and energy networks, where we have long seen the dominance of a centralized

electricity network as the main strategy for development (Graham and Marvin 2001). In this context, sustainable energy solutions relate to the possibilities of existing energy networks and the extent to which an actual transition to a radically different system is possible (Grin, Rotmans et al. 2010).

There are opportunities to enhance procedural dimensions of justice in relation to energy management and planning by creating participatory and co-ownership models. One key aspect has been a rising interest in the role of communities in shaping the possibilities for the provision of energy. Community-led energy projects with a concern for justice have proliferated in different contexts (Forman 2017, Mundaca, Busch et al. 2018), often strongly supported by local governments. These projects have served as a means for governance experimentation, not just to test technologies but also to develop community-based business models that may make such provision feasible. This is leading to a growing interest in "grassroots innovation" (Seyfang and Smith 2007, Hargreaves, Hielscher et al. 2013) as a means to catalyze rapid change in energy systems through multiple forms of learning. Localized initiatives may also support the development of social movements, and deliver social learning.

Land transformation and conservation Local governments have a crucial role in protecting biodiversity and landscapes both by protecting areas directly and by promoting nature-oriented economic and cultural practices. Such measures relate to the preservation and maintenance of nature-oriented public spaces on the one hand and, on the other, fostering nature conservation practices for social and economic development, often through the recognition of traditional livelihoods and cultures (Figure 4.4). This approach is more conducive to a green planning approach that respects the mixtures and varieties of urban–nature relationships and urban–nature mosaics, than approaches that separate nature conservation from urban development such as traditional green belts and land use zoning (Yokohari, Takeuchi et al. 2008). However, these practices may be valuable in specific contexts, for example, to protect vulnerable ecosystems.

Traditionally, the association of health benefits with green spaces has been a critical strategy for their promotion and conservation. From the reduction of pollution to the mitigation of the urban heat island effect to the actual benefits of outdoor sports, the construction



4.4 Mainstream examples of measures to advance urban sustainability through biodiversity and nature conservation (credit: Louise Harvey)

of parks and recreation areas has been a key environmental policy in millions of cities. Often, such areas may help to recuperate the built environment or industrial heritage in a city. However, recent evidence suggests that not all urban citizens benefit equally from green spaces and thus, access to green space and biodiversity is an environmental justice issue. For example, the creation of urban parkland in cities in the US or China is often followed by a process of "eco-gentrification" that may lead to the displacement of poor communities

to areas with less access to green space (Fuller, Irvine et al. 2007, McCormack, Rock et al. 2010).

Food production is also significant because it may link economic activities and job creation to the preservation of traditional crops and landscapes. Urban agriculture is beneficial to the city when it protects water resources, improves waste management and provides an additional source of income for impoverished families, as illustrated in Accra, Ghana (Allen and Apsan Frediani 2013). Similarly, urban agriculture projects in Sao Paulo and Quito are combining city greening with the creation of livelihoods and reduction of food insecurity (FAO 2014).

There are also ample opportunities for participation in decision making and project implementation. Often the most effective forms of conservation are those which involve citizens directly. Monitoring flora and wildlife is a crucial component of habitat and biodiversity protection. Also, there is a wide variety of measures that can be adopted in the urban environment, from the protection of public spaces to the promotion of traditional crops in home gardens. Such activities often take form around the designation of a symbolic motive for the intervention, whether this is protecting a particular species, a critical habitat or a cultural landscape. There is now a worldwide movement of citizen science that will play a central role in the future of biodiversity and ecosystems conservation.

4.4 Reclaiming environmental planning

The overview above shows a variety of areas of intervention to deliver sustainability. The analysis, however, also shows that delivering sustainability is not always akin to delivering environmental justice. If we are going to reclaim planning as a process that enables progressive interventions in urban environments, then we need to situate planning practices within the context in which they emerge, and make explicit their progressive intent. Why focus on planning? Because local governments can mediate collective action and work alongside activists for sustainable, shared futures against the extractive forces of capitalism. Planning is a powerful mode of intervention that we need to reinvent from a postcolonial, feminist perspective. What do progressive forms of planning look like? How can we establish new solidarity alliances that harness state power, rather than work against it?

This is a difficult thing to do against a backdrop of an oppressive state rooted in the multiple expression of capitalist exploitation,

colonialism and patriarchy. However, the state is too valuable to be abandoned. At the very least, activists and practitioners can harness the structure of the state to deliver liberation projects, that is, those that emerge from bottom-up action and are deeply rooted in a justice frame, projects that both question the status quo and construct better alternatives of life that redress social and environmental inequalities.

The success of strategic action of this kind depends on the multiplicity of points of intervention. Our database offers an overview of the wide range of options to deliver action in the environment: the multiple spheres in which justice can be claimed. Cities Alliance proposed a typology of instruments for environmental integration into planning consisting of policy instruments which provide guiding principles for environmental decision makers (Table 4.1). This typology reflects the contents of the initiatives of the database because these instruments are regularly combined to produce strategies for environmental management in local governments. Many of these instruments have been further developed since the first efforts to advance and implement Local Agenda 21, in cities such as Bangkok, Thailand, Bayamo, Cuba, or Manizales, Colombia (Cities Alliance 2007). More recently, new empirical analyses have sought to demonstrate the experiences of leading cities in delivering sustainability (Bartlett and Satterthwaite 2016, Gómez-Álvarez, Rajack et al. 2017).

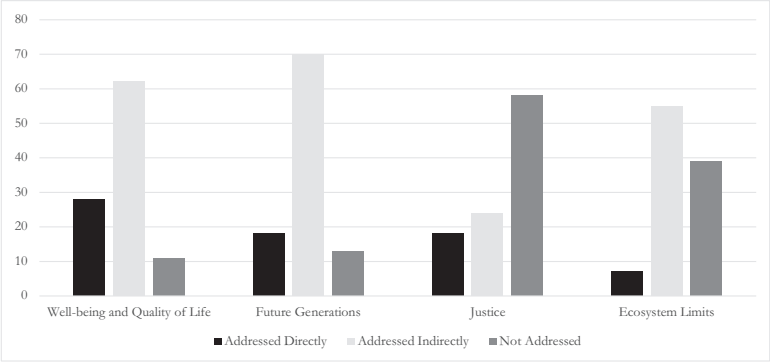
These experiences show (1) that the environment is routinely integrated in city planning, for example, in City Development Strategies; (2) that increasing the level of participation results in greater focus and relevance while it enhances the execution of urban planning strategies; and (3) that various instruments exist to bring together development, social justice and environmental preservation objectives. What this does not show is the complex politics that influence environmental projects at multiple scales, and the way in which powerful actors may control resources, framings and arguments.

The experiences contained in our database reveal that having the means to enact sustainability action at the local level is not akin to delivering just sustainabilities. As explained above, we examined the extent to which each initiative in the database met the principles of just sustainabilities. Figure 4.5 provides an overview of the results.

Table 4.1 Instruments for environmental integration

OBJECTIVES	Type of instrument	Examples
Policy	Information instruments	A diverse range of activities such as training, research and development, awareness campaigns to produce and share environmental information
	Voluntary instruments	Practices such as codes, labeling, management standards or audits, on a voluntary basis, that can provide incentives for pro-environmental behavior
	Economic instruments	Taxes or subsidies can be used to account for the environmental costs of certain activities
	Regulatory instruments	These include a range of mandatory requirements through controls, bans, quotas, licensing, standards often applied when a specific outcome is required
Process	Visioning	Events that bring together different stakeholders to produce a city vision
	Baseline studies	Focus on understanding the current conditions in a neighborhood or city
	Development priorities	Specific methods to ensure an open definition of multiple priorities and contrasting values that will inform the planning process
Planning	Environmental profile	Provides a common understanding of how a city's sectors interact with the environment and the governance capacity
	Environmental footprint and targets	This includes a range of instruments that relates current activities with the city's ecological carrying capacity
	Impact assessment tools	Tools such as Strategic Impact Assessment or Sustainability Assessment provide a means to assess the impact of specific policies and programs
	Monitoring systems and indicators	Systems to take measurements at regular intervals to specify progress against objectives and revise the planning process
Management	Environmental budgets and audits	Methods such as EcoBudget, EMAS or ISO 14001 which provide guidelines for the periodic revision of environmental management procedures

Source: modified from Cities Alliance (2007).



4.5 Percentage of initiatives in the database that addressed the just sustainabilities criteria (directly, indirectly or not at all) (authors' elaboration)

At first sight, the results are demoralizing. The number of initiatives that addressed the four principles was extremely small (5 percent). The criterion that was most often addressed was "Well-being and quality of life," which appeared in 28 percent of cases. The other criteria were met only in a small sample of initiatives, with the limits criteria met only in 7 percent of them. However, this analysis hides the fact that while the initiatives' objectives may not spell out the just sustainabilities criteria explicitly, many of them already advance some of those criteria indirectly. For example, the majority of initiatives addressed the criterion of "Meeting the needs of present and future generations" indirectly. Hence, considering just sustainabilities is not only a moral imperative, but it is also a feasible strategy for local authorities and other allies interested in delivering emancipatory programs of action for people and the planet. There is, however, less evidence that such criteria are actually delivered and sustained in practice.

Often, the difficulty to address a multidimensional framework for action is attributed to the persistence of a sectoral approach. Since the 1990s the mantra has been that environmental issues had to be integrated and mainstreamed into general urban planning processes, rather than addressed in isolation or a sectoral fashion. The Habitat II Declaration made no less than 44 references to the integration of policies and sector-based management strategies, with the aim of enhancing effectiveness and holistic results. Practitioners refer to the need to transcend a "silo" mentality in environmental management,

that is, the emphasis on sectoral approaches and lack of dialogue between institutions to achieve urban environmental objectives. The rise in popularity of integrated planning in the 1990s to some extent revived established ideas in policy studies regarding coherent, cross-cutting, coordinated or collaborative policy-making, as well as networked governance approaches (Meijers and Stead 2004). For example, Meijers and Stead (2004) provide an empirical assessment of integrated planning approaches employed in urban environments which documents relatively widespread use of impact assessment tools, planning techniques based on targets and indicators, and public participation.

However, this emphasis on the need for integrated approaches may be distracting efforts from the actual challenges of delivering just sustainabilities. For example, the criterion that is most rarely addressed, directly or indirectly, is the one that refers to advancing justice in procedures and outcomes. This finding suggests that despite the general concern about the rise of participatory approaches and other process-oriented approaches to environmental planning as a means for depoliticizing debates, participatory actions in local planning are still very rare. There are few good examples of deliberately engaging with justice questions in environmental planning despite the growth of scholarship in the area and the existence of well-known established methodologies. Our interpretation is that rather than focusing on coordination and on transcending sectoral approaches, the emphasis should be on understanding how action is achieved and with what results, whether it happens in a sectoral manner or not.

Our analysis shows that sustainability initiatives are still appropriated in most parts of the world away from their original progressive intent. Sometimes this can be related to a lack of capacity, but most often, this is the result of an overall emphasis on top-down, technocratic solutions in the belief that achieving the right outcomes is more urgent than the process whereby they are achieved. At the local level, the environment is not yet recognized as a matter embedded in political struggle. While the political struggle is often at the heart of some of the most pioneering initiatives at the local level, from straw-bale housing to sharing food practices, solutions influenced by different forms of sustainability appropriation (technological, economic, sociopolitical) predominate at the city-wide

level. Participatory environmental planning is rare, let alone transformative strategies towards the recognition of disempowered and disenfranchised groups.

The adoption of just sustainabilities principles may help to re-politicize sustainability action at the local level and reclaim planning as an instrument of political mobilization. Re-politicizing environmental action requires, in the first place, recognizing the whole gamut of actors that intervene in the delivery of sustainability – from local authorities to civil society – and the multiple, ad hoc, ways in which they can work together beyond efforts at achieving complete coordination. There is a sense of opportunism in the advancement of just sustainabilities, a dependence on the "guerrilla street science" and the possibilities of action that Debra Roberts talked about. Such sense of shared objectives may help in the delivery of cooperative action and the democratization of environmental decision making. This is why we defend just sustainabilities: not as a means to provide a universalizing account of action, but as a guiding reference to consider how progressive action looks in different contexts. In the following four chapters, we use the examples in the database as a means to reflect upon what strategies to deliver the four principles of just sustainabilities are feasible in practice.

5 | IMPROVING WELL-BEING AND QUALITY OF LIFE

5.1 Introduction

The place where one lives determines one's quality of life and access to opportunities. And the environment is "where we live, work and play" (Novotny 1995). Sustainable development was, since its inception, linked to a concern with basic needs including housing, water, sanitation, health care and energy, among others. Thinking of urban sustainability evokes concerns with liveability and the extent to which urban places are suitable for a good life. Nevertheless, this recognition hardly prevents homelessness or inadequate provision of housing and services.

October 2018 marked the anniversary of one of Colombia's most celebrated movies, *La Estrategia del Caracol* ("The Strategy of the Snail"). The film tells the story of a tenant community in Bogotá that, asphyxiated by the threat of eviction, comes together and decides to "move the house" bit by bit outwitting the corrupt elite that wants to appropriate their home. The story is told through the eyes of Gustavo, one of the tenants, in an interview for TV. Gustavo responds angrily to the final question from the journalist:

> "Gustavo, what I don't understand is, all of this, what was it for?"
>
> "What was it for? What do you mean 'What was it for?' What is dignity for? Doesn't the word 'dignity' exist anymore? Or you do not use it on TV? What do you mean 'What was it for'? For dignity, for our own dignity!"[1]

The scene gives the viewer a sense of closure, but then the next scene moves to one of the hills where the community has gathered to start a new life: there is no house, no water, no services of any kind. For the viewer rooting for the community, it is difficult to interpret this as a happy ending. In doing so, the movie raises the question: What is the price of dignity? What is life worth living? In

urban areas, people's lives are interconnected in shifting communities with systems of technology and economy. The first principle of just sustainabilities makes explicit the connection between a thriving society and the environment that sustains it. Sustaining urban life goes beyond the provision of essential services to ensure the support of a life worth living.

The just sustainabilities principle of quality of life and well-being represents a call to reclaim dignity in the place where one lives: whether the house, public spaces, infrastructures, arenas of collective action or the natural environment, sustainable urbanism requires liveable places. Just sustainabilities calls, in the first place, for an understanding of what urban citizens consider a life worth living. This principle ties sustainability action to questions of deprivation, poverty and urban inequality.

This chapter engages with the first just sustainabilities principle: quality of life and well-being. Our first task is to explain the centrality of the principle to the concept as a whole. As discussed in Section 5.2, the idea of sustainability hinges on this principle, and the just sustainabilities concept emerged partly through reflection on the absence of considerations of social well-being in mainstream sustainability discourse. The following sections (5.3 and 5.4) reflect on the integration of the concept in debates of sustainability over time and its application to urban development. Next, we reflect on the definition of well-being (Section 5.5). Finally, we present an overview of how the principle of well-being is advanced in cities around the world (Section 5.6).

5.2 Well-being and quality of life as a dimension of just sustainabilities

As momentum from environmental justice movements grew around the turn of the millennium, environmental politics and environmental sociology scholars became increasingly concerned with the progressive removal of the social dimensions of sustainability from mainstream discourses of environmental action (Agyeman, Bullard et al. 2002, Agyeman 2005). This discursive strategy separated environmental movements concerned with the protection of the environment from environmental justice activist communities that had succeeded in aligning concerns about environmental transformation with those raised by civil

rights movements. For many scholars, this separation ran counter to their fundamental beliefs about the environment and how to achieve a sustainable society. The first step towards realizing equity and justice, they argued, was the recognition that sustainability fundamentally involved social concerns and was tied to a commitment to ensure "a better quality of life for all" (Agyeman, Bullard et al. 2003).

The concern that pro-environmental movements had to be kept separated from those claiming social justice appears today as banal. However, in the green politics debates of the 1990s, such integration appeared to pose a threat to the nascent environmental movement, which could be subsumed under more pressing concerns of poverty and deprivation (Dobson 1998). In part, the challenge was one of lack of data: there were few examples that demonstrated how social justice struggles had led to improved environmental outcomes, leading Dobson (2003) to argue that with social justice and environmental sustainability "ne'er the twain shall meet." This argument emerged as a response to the evolution of sustainability policy in the post-Earth Summit (Rio 1992) context. Seeking efficiencies through technological change became the mantra to achieve those win–win solutions. Radical green political ideas that regarded environmental degradation as the direct consequence of capitalism and patriarchy were brushed aside (for a thorough examination of the establishment of ecological modernization as a dominant discourse and concurrent displacement of radical environmentalism see Adger, Brown et al. 2002). In that context, radical green political activists simply sought the moral justification to concentrate their efforts on the central challenge of protecting the environment. Nevertheless, environmental justice activists found themselves fighting for their cities away from academic and international policy debates, in neighborhoods where conflicts were both social and environmental.

Agyeman (2013) argues that separating social justice and environmental sustainability is akin to assuming that quality of life and well-being can only be realized at the expense of the environment. The idea behind this dichotomy is that improving people's lives or lifting people out of poverty always requires exploiting or consuming natural resources. This is, however, a restrictive perspective on what quality of life is. Agyeman (2013) relates his work

to broader thinking about the roots of prosperity (Jackson 2009), arguing that economic growth on its own has failed to generate social well-being for all in most known societies. However, it is also a means to move away from the diagnosis of the root causes of both environmental degradation and social deprivation. As a criterion for achieving just sustainabilities, "improving quality of life and well-being" departs from a reflection of what constitutes prosperity and dignity.

A significant challenge in consideration of quality of life and well-being is that these debates mostly refer to prosperity agendas in industrialized nations. Sustainability ideas have been generally framed differently within discussions of international development. Yet, the same separation remains. For example, sustainability policies in urban areas in the global South at the turn of the millennium were analyzed as belonging to either green (environmental) or brown (services) agendas (typical examples of the former include protection of natural habitats and of the latter, provision of piped water) (McGranahan and Satterthwaite 2000). This separation sought to bring to the fore the need for the development of essential services in a context of scarce resources. These are not two separated agendas, however. For example, the provision of services such as water and sanitation is not simply a question of infrastructure development. In cities such as Bangalore, India, water lakes and associated ecosystems provide basic services that support the lives of poor communities providing water and livelihood opportunities (Unnikrishnan and Nagendra 2015). The degradation of natural resources and urban ecosystems tends to impact directly on the most deprived sectors of the population. Overcoming these constraints requires both an appreciation of the interlinked ecological and social challenges faced by marginalized communities and looking towards novel definitions of prosperity and well-being (Sections 5.4 and 5.5).

5.3 The evolution of thought on quality of life and well-being in sustainability

Well-being and quality of life were part of the essence of the sustainability concept since its very inception. In the foreword to the Brundtland Report (1987), former Norwegian Prime Minister Gro Harlem Brundtland states:

> When the terms of reference of our Commission were originally being discussed in 1982, there were those who wanted its considerations to be limited to "environmental issues" only. This would have been a grave mistake. The environment does not exist as a sphere separate from human actions, ambitions, and needs, and attempts to defend it in isolation from human concerns have given the very word "environment" a connotation of naivety in some political circles . . . But the "environment" is where we all live; and "development" is what we all do in attempting to improve our lot within that abode. The two are inseparable. (WCED 1987: Foreword)

Poverty was a central theme in the report. For example, the Commission argued in Chapter 3 that "poverty is not an evil in itself" and that sustainable development was tied to both the imperative to meet people's basic needs and fulfill their aspirations for a better life. The 2002 World Summit on Sustainable Development in Johannesburg put forward the strapline of "people, planet, prosperity" as a synthesis of the ideas to balance environmental concerns with social and economic ones (now popularized as the triple bottom line) (Hammond 2006). The conference Rio+20, held in 2012, foregrounded poverty, inequality and basic services as an integral part of sustainable development, although the declaration abstained from discussing the issue of quality of life and well-being and focused instead on achieving "inclusive growth." In 2015 the declaration "Transforming Our World: The 2030 Agenda for Sustainable Development" brought together a concern with people, planet, prosperity, peace and partnership in a blueprint for human dignity and equality.

The Brundtland Report and the Rio Declaration displayed a relatively unproblematic attitude towards opportunities of realizing socioeconomic development in parallel with ecological protection. In recent years, this optimistic approach has come under question. The need to move beyond development and also consider the sustenance of Earth's life-support system emerges from a concern that human transformation of the planet undermines any development gains (Griggs, Stafford-Smith et al. 2013). Accordingly, "sustainable development in the Anthropocene" must extend beyond aims of poverty alleviation towards prevention of irreversible system changes in vital Earth system processes (this results in a rehashing of the Brundtland definition that "development that meets the needs of the present while safeguarding

Earth's life-support system") (Griggs, Stafford-Smith et al. 2013: p. 306). However, a misunderstanding in these debates emerges from the idea that sustainable development is a concern only for the poor. This idea is linked with a widespread anxiety associated with increased resource consumption as a result of improved quality of life in the populous global South. By contrast, the most important transformations required relate to the reduction of carbon emissions and the shift in resource-consuming lifestyles in richer countries (Elliott 2012). Elliot argues that inequality in access to resources underpins "substantial human insecurity, conflict, ill-health, and premature death as well as resource degradation, confirming that development is not meeting the needs of current generations" (2012: p. 5).

Sustainability discourses have permeated economic agendas to the point that sustainable development thinking is mainstream. The question raised here is whether this mainstreaming has happened at the expense of a clearer understanding of the material basis of the Earth and the promotion of techno-economic fixes (Kothari, Demaria et al. 2014, Ferguson 2015). Could sustainable development be a discursive tool to call for a radical reorganization of current economic systems and the way they provide people with opportunities to thrive? The examination of sustainable development as an ambiguous discourse has revealed different understandings of the concept depending on whether it is deployed to maintain the status quo, to reform the economic system or to transform it, with transformative approaches intent on rethinking aspects such as economic redistribution and ecological justice (Hopwood, Mellor et al. 2005). The growing dominance of transformative approaches to sustainable development (Rijke, Farrelly et al. 2013, Asara, Otero et al. 2015, Ferguson 2015, Kläy, Zimmermann et al. 2015, Pelling, O'Brien et al. 2015, Castán Broto, Trencher et al. 2018) suggests that sustainability can work as an instrument to revitalize the political debates around quality of life and well-being. Sustainability has always been political. This was a lesson hard earned through environmental justice struggles.

The notion of sustainability articulated in this book identifies inequality as the root cause of both environmental degradation and social deprivation. However, just sustainabilities reminds us that inequality depends on multiple layers of exploitation. Recent intersectionality perspectives have shown how multiple forms of oppression interact in the lives of persons and communities depending on where

they are and the social structures that surround them resulting in multiple "living environmentalisms" (Di Chiro 2008). From the perspective of local action – whether it is by local governments or civil society – just sustainabilities points towards the radical implications of addressing these questions practically. However, concerns with inequality, particularly in urban environments and communities, is rapidly becoming mainstream as evidence accumulates about the social and environmental consequences of growing rates of inequality worldwide (Wilkinsson and Picket 2009). For radical scholars and activists, engaging with just sustainabilities also means reflecting upon the extent to which the transformation of the status quo requires engagement with it.

5.4 A situated perspective on quality of life and well-being in cities

Let's imagine that the range of urban responses to achieve quality of life and well-being in a particular community can be arranged alongside a continuum. On the one extreme of the continuum we find democratic-socialist proposals for (rational-economic) interventions with a green flavor. At the other extreme of the continuum we have movements which propose radical action against the root proposals of exploitation (whether racism, patriarchy, colonialism, class exploitation or any other kind of discrimination based on identity characteristics). The former area of solutions, often integrated within mainstream discourses of the green economy, may easily be accused of comprising weak sustainability proposals, not ambitious enough, and helping to support and reproduce capitalist economic structures. The latter may bring about radical change over time, particularly when activists succeed in aligning their views with broader cultural and political changes (see Table 5.1). However, institutional changes, from the reforms to the Environmental Protection Agency in the US to the incorporation rights of nature in the constitution of Ecuador, have not fundamentally improved people's lives although they may shift paradigms over time. Thus, the radical character of the proposals hinges on whether they can create a positive change and gain momentum to improve people's well-being and quality of life.

For example, one of the most radical change proposals put forward in recent times has been the US Green New Deal promoted by the

TABLE 5.1 Two perspectives on achieving quality of life and well-being

	Green economy	Green transformations
Pros	Feasible routes of action Short-to-medium-term reform or change Inserted in current structures of thinking	Normative commitment to radical change Concern and acknowledgment of the voices of the disadvantaged Long term
Cons	Lack of ambition Not targeting root causes Contributing to the reproduction of systems that produce environmental degradation and inequality	Difficulty to provide feasible solutions that can improve people's quality of life Movements alienated from the mainstream may be ignored

Source: authors' elaboration.

Democrat Alexandria Ocasio-Cortez, which aims to create good jobs and reduce economic inequality while mitigating climate change. The Green New Deal is a program of stimulus with a focus on the green industry with proposals for infrastructure development and taxes. However, its objectives and the language used to advance it ("to promote justice and equity by stopping current, preventing future, and repairing historic oppression of indigenous peoples, communities of color, migrant communities, deindustrialized communities, depopulated rural communities, the poor, low-income workers, women, the elderly, the unhoused, people with disabilities, and youth") is radical in its conception and execution (more so if we consider the prevalence of climate skepticism in the US, more pronounced than in other countries). The radicalism of any proposal – how much it contributes to challenging the root causes of social and environmental injustice – relates to how it is operationalized, by whom and where.

However, global discourses of urban development rarely provide an actual point of reference to think about quality of life and well-being. Instead, blueprints such as the New Urban Agenda focus on providing solutions in cities without considering more broadly the challenges to define what is a life worth living. There are clear difficulties to integrate urban development in global agendas: while the Rio 1992 agenda recognized the local as a key arena for action, the growth of sustainability discourses sought to situate urban areas as strategic arenas for intervening in the global economy. In the last decade, we have seen a shift towards the re-imagination of urban areas as

places of opportunity for sustainable development, and urbanization as a transformative force (Barnett and Parnell 2016).

Against these perspectives, there are views of the urban as the site of dystopia. Ever since the beginning of the industrial age cities have been seen as sites of squalor, to be made hygienic and purified:

> Bleak, dark, and piercing cold, it was a night for the well-housed and fed to draw round the bright fire and thank God they were at home; and for the homeless, starving wretch to lay him down and die. Many hunger-worn outcasts close their eyes in our bare streets, at such times, who, let their crimes have been what they may, can hardly open them in a more bitter world. (Dickens 1838: Chapter 23)

The quote above is from the writer Charles Dickens, but it could equally have been part of Mike Davis' book *Planet of Slums* (2017), which mapped the contours and specificities of urban dispossession across the world. *Planet of Slums* was not in isolation. UN-Habitat's 2003 Global Report on Human Settlements was entitled *The Challenge of Slums*. It argued:

> The stretched capacity of most urban economies in developing countries is unable to meet more than a fraction of these needs, so that the informal sector is providing most of the new employment and housing in environments that have come to be known as informal settlements or slums, where more than half of the population in many cities and towns of developing countries are currently living and working. (UN-Habitat 2003: p. 5)

Its more recent 2015–2016 Slum Almanac defines "slum households" as households whose inhabitants suffer one or more household deprivation (lack of access to an improved water source, lack of access to improved sanitation facilities, lack of sufficient living area, lack of housing durability and lack of security of tenure). UN-Habitat argues that in 2015, at least 881 million people lived in this kind of household. For many, urban sustainability is akin to addressing these enormous challenges, starting with providing adequate housing and bridging infrastructure gaps (Croese, Cirolia et al. 2016). Eradicating "slums" – if we accept that people's lives can be labeled with a pejorative term such as that – also means rooting people out from the places

of their lives, breaking systems of relations that enable survival, and questioning their lives to date. The lack of success of programs for slum eradication talks to the limitations of narratives that characterizeurbanization as a driver for dystopias (see reflections on examples of this in Section 5.6).

Again, we find ourselves located along a continuum between urban optimism and urban dystopia, perspectives which both tend to homogenize and simplify the processes of change in cities and reduce them to one characteristic. Sustainability should resonate with both discourses but not be captured by either side. On the one hand, sustainability requires engaging with the possibilities of action at the local level, understanding how people live; on the other, sustainable development means addressing the most intractable challenges of the urban environment, reflecting upon what futures people want. In doing so, sustainability also broadens our frame of reference: it connects local action with global discourses and movements; it situates deprivation within a broader context of urban development in which poverty and ecosystems degradation are intrinsically linked.

5.5 Definitions of well-being and quality of life

Like the film scene explained at the beginning of this chapter tried to demonstrate, life's dignity cannot be discounted. Attempts to improve other people's quality of life and well-being will likely be unwelcome when they are externally imposed. Assuming a fixed perspective on what is a life worth living is both naïve and detrimental for urban policy. Thus, just sustainabilities initiatives seek to define "improvement" from the perspective of those who seek those improvements, most often through the articulation of social movements seeking to deliver them (which does not preclude the possibilities for researchers or policymakers to co-define and co-design those improvements).

Nevertheless, definitions of quality of life and well-being may throw new light onto these debates. Any discussion of definitions of well-being refer to the Sustainable Development Goals (SDGs), the dominant interpretation of global aims for social and environmental progress. The SDGs constitute a baseline of what a life worth living means today. The most appealing aspect of the SDGs is their near-universal acceptance and the sense that they have

been developed through international consensus. The concept of universal human rights, representing the belief that every human being is entitled to basic freedoms and necessities, is an anchoring point for the SDGs.

The concept of human rights is fundamentally about human dignity (Donnelly 2013). Rather than being derived from scientifically determined human needs, human rights advance an ideological vision of what a human is and can be. Theories of morality have a long history in philosophy in Western traditions of thought; they are variously associated with philosophers like Kant and his notion of objective moral law, and Locke's theory of morality as a law of nature, or religiously inspired moral code. These ethical principles vary considerably across and within societies. By contrast, convictions about universal human rights only gained status as unassailable, even self-evident, principles after World War II – a very recent invention considering the long tradition of moral philosophy. Donnelly (2013) tracks the emergence of an internationally recognized norm of human rights to the establishment of the United Nations in 1945, the materialization of a United Nations Commission on Human Rights in 1946 and adoption of the Universal Declaration of Human Rights in 1948.

The influence of the Universal Declaration on contemporary norms related to quality of life and well-being can hardly be overstated. The Declaration established human beings as "free and equal rights-bearing citizens" (Donnelly 2013: p. 16) and stipulated specific minimum conditions under which human beings can live a life worth living. Current global objectives on well-being, such as the socially oriented SDGs, draw heavily on these principles. For example, SDG2 (Zero Hunger) aims to "end all forms of hunger and malnutrition by 2030, making sure all people – especially children – have access to sufficient and nutritious food all year round."

The discourse of human rights includes empowering elements, such as through the leverage that individuals (theoretically at least) can exercise vis-à-vis national governments (usually the actor expected to provide for basic needs) in case rights are unmet. An obvious drawback relates to enforcement: if every human being has a right to food, why are so many still starving? Political will and capacity, resources or legal frameworks to provide for basic needs for all are missing in most societies, rendering the concept

seemingly void in practice. In *Pathologies of Power: Health, Human Rights, and the New War on the Poor*, the physician Paul Farmer (2004: p. 6) argues that the human rights dogma has failed to protect the most vulnerable in society. Farmer posits that analyses of human rights abuses are empty if considered without reference to systems of economic and political power, which he argues enable systematic breaches of human dignity, or, instances of structural violence. He writes:

> The liberal political agenda has rarely included the powerless, the destitute, the truly disadvantaged. It has never concerned itself with those popularly classified as "undeserving" poor: drug addicts, sex workers, illegal "aliens," welfare recipients, or the homeless, to name a few. It is even less concerned with populations beyond national borders.

If we accept this overwhelming weakness of the human rights paradigm in its ability to address deprivation in the real world, the quest to realize at least minimum standards of living for all could still function as a moral guideline for action. However, the human rights norm also acts as a constraint on an ideological level, linked with its fundamentally Western foundation and focus on the individual. One aspect of this historically constituted notion is the anthropogenic orientation of "human" needs, which systematically and morally sets humans above other entities. The belief in rights divinely provided to all humans legitimizes social and economic development that occurs at the expense of all other species. As discussed in Chapter 3, post-colonial and eco-feminist critiques of dominant interpretations of sustainability are reinserting ideas about the inherent right of other lifeforms to live and thrive and their role in protecting a life worth living for other beings (Cilano and DeLoughrey 2007). Emerging efforts to incorporate non-human lifeforms in theories of environmental justice are, similarly, advancing a perspective of the rights of animals and plants to life and dignity (Schlosberg 2013).

Further, Western perspectives on human rights and quality of life are underpinned by rational-economic understandings of well-being. This becomes most evident in consideration of the quantitative-economic metrics associated with measuring its progress. Harvey (2012: p. 3) refers to contemporary human rights discourse as "individualistic and property-based and, as such, do[es] nothing

to challenge hegemonic and liberal and neoliberal market logics." For example, the SDG1 aim to end poverty for all is immediately associated with statistics on the number of people living with a certain income and analyses of economic growth in different world regions (UNDP 2019). Poverty is indeed difficult to measure, but the reduction of a life of dignity to economic terms shifts attention to consumption as the key metric of a life of dignity and economic growth as the main solution. Consensus around economic progress as the means to reach social well-being is not as entrenched as it used to be; GDP measurements are now competing with alternatives like the Human Development Index (UNDP), the World Happiness Index (the Sustainable Development Solutions Network), the Genuine Progress Index (Redefining Progress) or the Better Life Index (OECD). Yet, these new indices often continue to place economic development at their core; the Human Development Index, for example, uses Gross National Income per capita as a proxy for a decent standard of living. Fully decoupling the notion of well-being from economic standards would require challenging decades of thinking and development praxis, as well as the very foundations of our market-based society. While taking on the entire capitalist system seems a somewhat daunting task, alternative ideas of prosperity do precisely this. According to Agyeman (2013), this question of basic needs is not so much an issue of availability of resources as one of justice and equity in access to material resources. In conversations surrounding sustainability and development, this concept is often reduced to a question of access to basic necessities of a material form. Drawing on alternative conceptualizations of the concept (e.g., Sen 1999), Agyeman (2013) identifies a complex combination of material and non-material needs and satisfiers, including dimensions such as affection, freedom, participation, identification and creativity. Individuals express different priorities with regard to these needs and values; this recognizes that most individuals have a robust set of non-material aspirations. This insight breaks the conversation away from the irresolvable conflict between meeting rising material needs of both present and future generations and at once protecting the environment. Viewing "needs" as a complex prism of values and priorities, which places non-material aspiration on a par with resource-based necessities, allows for visions of human fulfillment that do not necessarily contribute to permanent

resource depletion. Such a concept also decouples well-being (as well as notions of identity and success) from material consumption. Agyeman (2013) envisions such a development is possible through a full transition to a post-material, post-consumerism society – a transition, he believes, that may be realized through a shift to an economy based on co-production. Such a shift, however, would also necessitate a profound transformation of social identity formation geared towards sharing and creativity. Counterpoints to economic definitions of well-being that imagine different forms of quality of life in society include Degrowth, Buen Vivir, and Ecological Swaraj (Kothari, Demaria et al. 2014). Degrowth is an explicit criticism of the dominant position of economic rationalities in Western society. As such, it emerges from Western thought but acts as a direct alternative to paradigmatic neoliberal principles of development. The theory presents paths to well-being based on less material consumption, sharing and radical redistribution. Buen Vivir and Ecological Swaraj, on the other hand, are worldviews that exist without reference to sustainability thinking. Buen Vivir is a life philosophy developed by indigenous communities in Latin America, most notably in Bolivia and Ecuador. The main departure from Western conceptions of development lies in its rejection of linear progression towards prosperity, as well as in its more limited connection with an accumulation of material wealth. Instead, the philosophy emphasizes elements such as harmony between the human and non-human world and the inviolable interconnection of elements from the social, physical and spiritual worlds (Kothari, Demaria et al. 2014). Ecological Swaraj, a set of principles derived from grassroots movements in India, represents another alternative set of ethics related to ecological integrity. The ideology is underpinned by respect for the intrinsic value of non-human species and the stability of ecosystems, equity, self-determination and diversity, and holistic definitions of well-being (based in social, cultural, spiritual and political fulfillment). The philosophies have in common the ability to produce future imaginaries disconnected from economic progress but reconnected with nature (Kothari, Demaria et al. 2014).

As argued by Robert Meister (2011), human rights are not only a Western construct, but also a hegemonic discourse that legitimizes intervention by actors in power and simultaneously glosses over historical injustice and cruelty. He traces the emergence of this

discourse to the fall of communism in 1989, when a "world community" materialized around ethical consensus and reconciliation in a post-evil world. This is a discourse that has abandoned notions of system resistance and revolt in favor of apolitical "rescue" from suffering. According to Meister, the disconnection with injustice in the past makes it impossible for current human rights perspectives to deal with current structural injustice, such as postcolonial legacies or those arising from capitalist relations. Siba Grovogui (2006) has expanded on postcolonial criticisms of the human rights paradigm, including its justification of a continuous imposition of Western value systems across the world. Grovogui explores the possibility to universalize the concepts of rights and freedoms without at once reproducing imperial systems of domination. As an alternative, he sketches the contours of a conceptualization of rights from the perspective of sociopolitical struggles for freedom in Haiti, which – among other dimensions –were fixed in notions of the integrity of the body and the spirit, representing freedom from oppression and suffering. Grovogui (2006: p. 194) concludes that "Haitian revolutionaries and anticolonialists everywhere recognized the existence of 'essential' human faculties and capacities, and, as result, made the moral choice to protect them as a means to ennobling human existence."

Another aspect of the Western understanding of well-being is the individualistic approach. As human rights are inherently tied to each human being, it follows that only individuals are entitled to them (Donnelly, 2013). By extension, communities cannot enjoy the *right* to dignity and prosperity. Yet, communities and groups exercise legitimate claims to recognition, prosperity and opportunities to thrive. Communities have needs, collective goals and suffer from deprivation. Approaches to measuring quality of life that depend on community well-being are recently emerging. For example, an initiative pioneered by Jacksonville, Florida, resulted in a community sustainability indicator framework developed by the community itself. Through this kind of approach community values and visions become embedded in governance systems (Swain and Hollar 2003).

While notions of well-being as a collective property are relatively rare in sustainability policy research, they represent long-standing knowledge in public health and social psychology. The World Health

Organization (WHO) defines "health" as a state of complete physical, mental and social well-being (WHO Constitution 1946). The organization speaks of social well-being as a condition that depends on multiple social-environmental conditions. Of the well-being of youth, for example, the WHO (Currie, Zanotti et al. 2012: p. xvi) observes that the "importance of social determinants to young people's health, well-being and development is clear. Theirs is a world of great opportunity in relation to health, education, occupation, social engagement, discovery, and fulfilment." Many contextual and relational conditions influence the well-being of a young individual, including family situation, peer relations and school and neighborhood environment. Similarly, mental health depends on social relations and surroundings, as stated, again, by the WHO:

> [M]ultiple social, psychological, and biological factors determine the level of mental health of a person at any point of time. For example, violence and persistent socio-economic pressures are recognized risks to mental health. The clearest evidence is associated with sexual violence. Poor mental health is also associated with rapid social change, stressful work conditions, gender discrimination, social exclusion, unhealthy lifestyle, physical ill-health and human rights violations. (WHO 2019)[2]

Well-being depends on all these interconnected elements, which in turn are linked to opportunities to exercise political, social and cultural rights. The importance of contextual factors and the interaction between physical condition and social context becomes apparent in studies of *experienced* quality of life. Well-being is a subjective property. Subjective well-being is studied in psychological research through the examination of multiple aspects including life evaluations (people's thoughts on life satisfaction), hedonic well-being (everyday experiences of feelings and moods) and eudemonic well-being (meaning and purpose of life) – dimensions which are linked with both physical health and social setting (Steptoe, Deaton et al. 2015). These are insights which bring us back to our point of departure of situated accounts of quality of life: understanding what a life of dignity is must always depart from experiences.

In sum, our perspective in this book is that a life worth living cannot be defined universally, although deprivation can easily be

recognized. This brings us back to situated perspectives on quality of life open for multiple interpretations. Our approach asks for a clear delinking of quality of life and well-being from aims and metrics of consumption and the development of community-based metrics of subjective value. This means understanding prosperity and happiness separately from economic indicators and even recognizing how unfettered consumption can contribute to deteriorated conditions of living for urban dwellers.

5.6 Just sustainabilities strategies to improve quality of life and well-being

Ensuring well-being and quality of life is often at the core of urban sustainability programs. When thinking about place-based action in cities and urban areas, the analytical separation between citizens well-being and environmental sustainability is untenable. In our study, we examined initiatives that considered measures to improve the quality of life and well-being of the population. This was the criteria most often addressed: only 11 percent of initiatives did not consider it at all, and 28 percent of initiatives had considered quality of life and well-being as an explicit aim (Figure 4.5). This includes a diverse set of projects to provide sanitation, housing, transport and energy. The question that was not addressed in our analysis, however, was how quality of life and well-being were defined and what the implications are of such definitions to make Just Sustainabilities achievable.

Several trends emerged in relation to the different ways that initiatives address or fail to address quality of life and well-being. The largest number of initiatives were related to the provision of housing and sanitation. These are areas where social needs often are acute and where interventions nearly always attempt explicitly to improve quality of life. Notable here is the number of measures that combined empowerment with the provision of housing for marginalized populations. Such programs may also involve agendas to make funding available for low-income families, or various forms of self-help strategies. The Integrated Shelter Delivery Programme delivered in San Carlos, the Philippines, for example, aims to secure land tenure for the urban poor through an affordable purchase scheme. The scheme is based on the incremental or multi-stage construction of basic core houses that can be altered over time according to the

family's ability to afford greater space. Financing is raised through collaboration between the project initiator, the Julio & Florentina Ledesma Foundation, and a range of other organizations (local government, government housing agencies, foreign development organizations and NGOs). The overarching aim of the program is to empower low-income, marginalized households and at once address homelessness and long-term poverty. Since its launch in 1987, the program has provided support for 45,000 low-income families and individuals in the city of San Carlos and the surrounding areas (World Habitat 2016).

Programs to provide infrastructure to previously unserved areas (informal settlements) can lead to enormous improvements in living conditions for urban dwellers. In Sub-Saharan Africa, provision of electricity and sanitation remain significant challenges, as access had only reached 30 percent and 35 percent of the total population in 2011 (Practical Action 2009, Andrés, Biller et al. 2014). A contributing factor is that urban population growth rates in Africa have averaged around 3.6 percent per year in the past decade, with the result of increased pressure on infrastructure and service providers. On average, the low population densities of African cities also makes provision comparatively more expensive and planning more difficult. Informal service provision covers this gap in many instances, while formal provision in many areas actually has declined (Foster and Briceño-Garmendia 2010). For example, data from 2005 showed that in 32 countries in Sub-Saharan Africa, only 39 percent of the urban population was connected to a piped network, as compared to around 50 percent in the early 1990s. Ethiopia has been adding about 5 percent of the population each year to the piped water network, and both Uganda and Ethiopia have limited the reliance on surface water as a main urban supply source (Banjeree, Skilling et al. 2008). One study in 2008 of 14 large African cities showed that congestion is an issue in all investigated urban areas, that less than half the roads were paved, that bus lanes were rare, and that other transport infrastructure elements were in poor condition. Sidewalks were missing on 65 percent of roads (Kumar and Barrett 2008).

"Slum upgrading programs" address these gaps by combining provision or improvement of housing with other forms of services, including access to water and sanitation, improved mobility, enhanced security or strategies to identify livelihood opportunities. An example

of this is the Kenya Slum Upgrading Programme (KENSUP) (see Box 5.1). KENSUP has created a convincing narrative for slum upgrading and sustainability planning (Meredith and MacDonald 2017), but challenges have been raised in terms of whether such upgrading programs compromise social cohesion (Mitra, Mulligan et al. 2017), the risk of capture by elites (Rigon 2014) and the extent to which expectations of local residents are met (Kimeto 2017).

Box 5.1 The Kenya Slum Upgrading Programme (KENSUP)

KENSUP was launched in 2004 by the government of Kenya in collaboration with UN-HABITAT and other stakeholders, with the aim "to improve lives and livelihoods of people working and living in slums through various initiatives and interventions" (Kenya Ministry of Transport, Infrastructure, Housing and Urban Development 2017). This involved providing low-cost housing, infrastructure and livelihood opportunities, as well as strategies to address cross-cutting issues like AIDS and substance abuse. An evaluation report of a subproject in the village of Soweto East published by UN-Habitat ten years later (2014) documents a process of dialogue with inhabitants (represented by the Settlements Executive Committee), decisions to provide water and sanitation and improve road infrastructure. Citizen surveys indicate that the interventions have significantly improved living conditions in the village. The report highlights the importance of implementing interventions supportive of existing lifestyles, as well as conflicts that emerged along the planning process and difficulties in ensuring stable financing solutions.

Programs to provide housing, water and sanitation and transport solutions in urban regions are too numerous to list. Initiatives to address shortcomings in basic necessities are ongoing in all world regions, often under a traditional "brown development" agenda. Further, we identified initiatives that advanced social well-being while simultaneously addressing environmental issues. This included strategies to

provide sanitation or housing in "environmental-friendly" ways. An example of this is ecological sanitation solutions such as Ecosan toilets, promoted among others by the NGOs ESTAMOS and WaterAid in Lichinga, Mozambique. These compost-generating latrines, which are built by communities themselves, are reported to have resulted in multiple benefits including improved hygiene, increased space (because the units are smaller), added economic value (through composting and growing food) and reduced risk of groundwater pollution (Breslin and dos Santos 2002). Another example is the SAFI SANA project in Ashaiman, Ghana, led by the NGO WASTE. The aim of the program was, first, to improve quality of life in informal communities by establishing a certified toilet services and solid waste collection network – aims directly related with improving sanitation conditions. The second element was the establishment of a re-use model including waste treatment, production and sale of bio-fertilizer to farmers, and delivery of green electricity to the grid – aims directly associated with renewable materials consumption (WASTE 2017). Both aspects are created in collaboration with multiple local partners, including service providers, farmers and inhabitants. These initiatives have to be read in a wider context of structural concerns which shape water and sanitation services (dealing with open defecation and maintenance issues, guaranteeing privacy and safety, working with the topography and environmental constraints, and addressing limitations of space and access) and that require strong commitment and intervention from the state (Tsinda, Abbott et al. 2018).

We also came across decentralized, off-grid strategies in relation to energy (e.g., provision of renewables to communities without power), transport (e.g., low carbon transport systems providing access for marginalized communities), food (e.g., urban farming projects that aim at reducing hunger, providing livelihood opportunities and improving the urban environment) and waste projects (e.g., that provide income and recognition for waste pickers and recyclers). Often, however, they are presented as an intermediary stage in the development of a fully networked system of provision. However, there is an increasing need to understand the role of decentralized efforts in delivering quality of life and well-being. Our view is that decentralized, off-grid technologies and strategies need to be part of any citizen-led just sustainabilities initiative, and that they provide community groups with leverage to intervene in their neighborhoods alongside more structured government initiatives.

Box 5.2 Cable car transport in Medellin, Colombia

An outstanding initiative, which combines low resource consumption and emission reductions with a radical improvement in living conditions, is a cable car transportation system in Medellin, Colombia, which has improved mobility for the poorest inhabitants living on the precarious hillsides of the city. The system has contributed to radically improved opportunities for mobility and accessibility for the poorest residents in the city. Prior to its construction, inhabitants in informal settlements on the hillsides had to spend hours walking through insecure neighborhoods. With the cable car, they can quickly reach the bottom of the hill, where the system is connected to a bus rapid transport system. The transit hubs have allegedly enhanced related infrastructure and amenities, such as new parks, schools, hospitals and police services. These innovations are unlikely to remediate by themselves poverty in informal settlements but contribute to the integration of these areas into urban life (Brand and Dávila 2011).

However, almost none of the initiatives discussed above used explicit sustainability discourses. Programs to improve living conditions are most often labeled as development projects, poverty alleviation strategies or sector-based agendas (housing, water, transport) – sometimes with environmental co-benefits. The multiple strands of appropriation of sustainability discourses (see Chapter 2) have meant that the most fundamental concern of sustainability is often overlooked. The SDGs may here be commended as an attempt to make it explicit that delivering quality of life and well-being is the fundamental pillar of sustainability.

Nevertheless, the empirical data suggests that initiatives in the global South establish clearer links between sustainability and quality of life and well-being. Particularly in South and Central America there are multiple attempts from communities, NGOs and other allies to empower communities and improve their living conditions. For example, the NGO USINA supports community-led initiatives and provides technical assistance to low-income families in construction of high-density housing through a participatory self-help approach ("mutirao") in Brazil. The Association of Tenements

in Central Areas (ACC) in the city of Santos (also in Brazil) has lobbied to provide decent, affordable housing for low-income families. The organization has trained community residents in building construction, management of resources and setting up small-scale enterprises. Also, many cities in Latin America (e.g., Buenos Aires, Rio de Janeiro, Mexico City, Guatemala City) have responded to the need for mobility for urban inhabitants by adopting BRT systems, which has improved mobility for millions of inhabitants. One notable example is Bogotá (Colombia), which launched its non-motorized transport plan with an integrated Bike Path Master Plan as early as 1998 (see also Box 5.2). These advances need to be viewed with recognition of the deep inequalities that characterize cities in this region, even though there is evidence that social movements and civil society are playing a role in inequality abatement (Evans 2018).

In terms of actors taking the lead in addressing quality of life and well-being in the cities in our sample, government authorities, NGOs, development organizations and communities were all prominent. Provision of services is often a core responsibility of local or national government bodies, explaining their frequent leadership in adopting city improvement programs. However, we found that local governments also engaged in "social" action with "environmental" co-benefits, which may further legitimate their work. In terms of poverty alleviation and improving the lives of vulnerable populations in the region, programs with large impacts include national-level schemes, such as India's JNNURM, which has distributed national funding for the upgrading of urban infrastructure in cities across the country. Nevertheless, the results of JNNURM have been diverse and contested. An evaluation report summarized the results of the mission bluntly:

> The mission directorate's one-size-fits-all model with its fixed set of reforms, design and procedural guidelines has strait-jacketed different cities into following a uniform pattern, one that is deeply at odds with the federal and highly diverse polity that is characteristic of India and with the different state government approaches and political imaginations of development that cities are rooted in. (Kamath and Zachariah 2015: p. 7)

Well-being and quality of life also constitute a main point of entry for international development organizations that work with

poverty alleviation. One relatively new form of intervention associated with the provision of services is sharing economy schemes. In our dataset, bike and car-sharing programs were the most widespread. Since bike sharing originated in European cities in the 1960s, it has become common in North and Latin America, but the largest programs are currently found in cities in China. By 2014, public bike-sharing systems were operated in over 700 cities worldwide, using over 800,000 bicycles. The use of bikes, however, is strongly differentiated by identity and frequently female, older and low-income citizens are less likely to use these schemes (Ji, Fan et al. 2017). Car-sharing schemes are clubs that provide vehicles to its members on a pay-per-use basis. Some forms of car sharing in communities and neighborhoods already appeared during the 1970s in cities such as Zurich or Amsterdam, but it was not until the early 2000s that it became a sizeable business model. Statistics now speak of millions of car-sharing users in the world and profitable international companies. A more radical approach was established by the city of Ulm, Germany, which established a free-floating car-sharing system whereby users could access and leave cars at any points within the city limits. Research suggests that such a scheme would contribute both to reduce carbon emissions and reduce car ownership while providing access to mobility to a larger sector of the population. The use of mobile technology has allowed for up-scaling of car-sharing practices in private companies such as Uber (Cramer and Krueger 2016), while also raising questions about regulation, unfair employment practices and the disruption of fragile networks within the urban economy.

Moreover, car-sharing and bike-sharing schemes do not necessarily challenge the underlying logic of ownership or profit orientation of the businesses that provide the service. The shared-economy concept can be radical in its approach by redefining what a service is, disconnecting consumption from ownership, and demonstrating that well-being does not depend on material ownership. Davies and colleagues (Davies and Evans 2019, Davies, Edwards et al. 2017) demonstrate the diversity of economic models embodied by shared-economy principles; this includes a range of ownership and/or organizational structures (private firms, cooperatives, social enterprises, charities etc.) and a spectrum of forms of sharing (bartering, selling, collecting, gifting etc.) (see Table 5.2). Whether or not a specific sharing system engages with alternative

Table 5.2 Modes of the sharing economy

	Mode of sharing				
Organizational form	Collecting	Gifting	Bartering	Selling (not for profit)	Selling (for profit)
For profit	Gleaning (Fruit Magpie)	Community growing (The Joinery)	Community garden (Cityzen Gardening)	Community farm (Mill Creek Farm)	Meal sharing (Eat With)
Social enterprise	Gleaning (SEND)	Food redistribution (Espigoladors)	Community Composting (Kokoza)	Meal sharing (Dinner Exchange)	Shared kitchens (Sambucus)
Co-op	Food rescue (Fruta Feia)	Food growing (The Dirty Beanstalk)	Community supported agriculture (Jivabhumi)	Co-operative gardens (Rooftop Garden)	Shared food processing (Three Stone Hearth)
Charity (not for profit)	Gleaning (Boston Area Gleaners)	Food skills sharing (3000 Acres)	Seed swapping (Seed Savers)	Food surplus redistribution (Your Local)	City farm (Newham City Farm)
Association	Mapping harvests (New Zealand Fruit and Food Share Map)	Community growing (Roots and Rays)	Seed swapping (Southern Seed Exchange)	Community gardens (Kleingärtnerverein Köln-Braunsfeld)	Urban growing (Dallas Urban Farms)
Informal	Mapping urban harvests (Fruktkartan)	Food gifting (Food not Bombs)	Collective food processing (Preserving Traditions)	Informal food parks (Houston Food Park)	Urban growing (Urban Oyster)

Source: adopted from Davies and Legg (2018).

notions of ownership and also addresses questions of well-being must be determined on a case-by-case basis (Davies, Edwards et al. 2017, Davies and Evans 2019). For example, food banks represent a sharing model set up specifically to tackle deprivation and improve well-being. Food sharing, in contrast, may have a wider range of objectives, even when the aims to tackle poverty, ill-health and social marginalization are explicit.

For example, the Stop in Toronto "strives to increase access to healthy food in a manner that maintains dignity, builds health and community, and challenges inequality" (the Stop n.d.). In the 1980s, the organization created Canada's first food bank, which has since evolved into a national organization (community food centers Canada) with replicas across the country. The bank operates on a system of distributing three-day supplies of healthy meals to households in their catchment area, supplied through partnerships and donors. The organization also offers other programs, such as community cooking events, support of individuals experiencing marginalization and poverty and urban agriculture activities. While the Stop has adopted a quest specifically to address social well-being, build inclusion and community cohesion, other food-sharing organizations have a strong environmental leaning. The London-based enterprise OLIO, for example, operates a mobile-based application that enables individuals to share food directly. On a mission to eliminate food waste, the business also aims to prevent households from remaining hungry in the vicinity of unnecessary surplus. Sharing practices around food can deliver spaces of caring, reshaping food and environmental flows across the city (Cloke, May et al. 2017). However, food banks also point towards the increasing levels of deprivation and inequality, as has been exemplified in the proliferation of food banks in the UK during the time of austerity (for an outline of the debate see Loopstra, Reeves et al. 2015).

However, there are contradictions inherent to shared-economy approaches. ICT technologies and new services like Airbnb and Uber, made possible through online platforms that connect supply and demand, are sometimes cited as panaceas for social, environmental and economic challenges (Davies and Legg 2018). Such solutions may be transformative with regard to challenging existing industrial structures or markets, yet their impact on enhancing quality of life and well-being in cities is unclear. Their role in reducing

resource consumption (by removing the need for ownership and idle resources) is only beginning to be understood (Davies, Edwards et al. 2017). Such services may affect the future of the city, for example through gentrification and new forms of deprivation related to accessibility and affordability. The ICT version of the sharing economy also prompts us to ask what values are embedded in the new solutions, and whether they really contribute to urban liveability. As observed by McLaren and Agyeman (2015), the key problem in these cases is that many sharing initiatives (such as bike-sharing schemes) were not originally created with justice and equality considerations embedded in their design. For sharing schemes to advance just sustainabilities, access and equity must be adopted as core objectives, alongside efforts to build trust, solidarity and social relations (rather than continued commodification and production of enclosures). They propose that the purpose of any sharing scheme therefore should be "sharing the whole city" – an approach that explicitly aims to disconnect the sharing ideal from economic rationalities and instead to highlight relational, intangible or even spiritual aims and values.

5.7 Conclusions

Our empirical analysis reveals a dichotomy between projects that address, on the one hand, socioeconomic well-being, and on the other, issues such as ecological integrity and biodiversity protection. This divide seems to be more rooted in the global North than in the global South. In the global South, the well-being agenda has always been tied to poverty-alleviation programs that have often been removed from broader sustainability narratives. In the global North, discussions about well-being have disappeared from sustainability programs that instead emphasize renewable energy, energy efficiency and the green economy. Communities continue to suffer from inequality and poverty in these regions, but momentum to address this deprivation through the sustainability narrative is weak. While the rhetoric emerging from the SDGs is directed towards bridging this divide there are no clear mechanisms to translate this thinking into action on the ground.

While initiatives to address quality of life are common, projects fixed in discourses of de-growth or alternative conceptualizations of well-being that decouple material wealth from quality of life are

rare, or even completely missing. The sharing economy, interventions managed through cooperatives or through co-production are to a limited extent providing alternative approaches, but many of these interventions are not explicitly linked to justice concerns. We also found few redistributive initiatives and a predominance of examples that relate to material understandings of social well-being among the interventions in our database.

In the light of these trends, what are the opportunities to realize transformations through ongoing efforts? Are there avenues to challenge deep inequalities and a system underpinned by injustice by working within the bounds of its own rationalities? Drawing on Pieterse's (2013) notion of radical incrementalism, we hypothesize that such processes of change are possible. Interventions that address urban inequality, that transform the lives of individuals through empowerment and social inclusion, that challenge underlying perceptions of ownership and consumption, may lead to radical urban change. This is not akin to believing that all change is transformative, but to seeking the roots of transformation within the life-changing moments of individuals and communities. As observed by Pieterse (2013):

> Yet we also know that we cannot wish into existence an overnight resolution that will make everything all right in the world. At the same time it seems futile simply to work away at creating the right conditions for insurrectionary revolutions that will eventually bring to life a large-scale "militant refusal" by the world's urban multitudes, as intimated by Mike Davies. This leaves one with bringing change into the world through some more discreet avenues: surreptitious, sometimes overt, and multiple small revolutions that at unanticipated and unexpected moments galvanize into deeper ruptures that accelerate tectonic shifts of the underlying logics of domination and what is considered possible. Radical incrementalism is a disposition and sensibility that believes in deliberate actions of social transformation but through a multiplicity of processes and imaginations, none of which assumes or asserts a primary significance over other struggles.

Ongoing efforts show the way towards realizing just sustainabilities, but we have only laid down the first stones of the road. Creating

quality of life for some often unfortunately happens by downplaying the needs of others: existing communities or people of the future. We will now once again need to revisit the history and conceptual foundations of the sustainability concept to understand the interlinkages between well-being and meeting the needs of both current and future generations.

Notes

1 Translated from the original Spanish by the authors.

2 https://www.who.int/en/news-room/fact-sheets/detail/mental-health-strengthening-our-response.

6 | MEETING THE NEEDS OF PRESENT AND FUTURE GENERATIONS

6.1 Introduction

> Once there were brook trout in the streams in the mountains. You could see them standing in the amber current where the white edges of their fins wimpled softly in the flow. They smelled of moss in your hand. Polished and muscular and torsional. On their backs were vermiculate patterns that were maps of the world in its becoming. Maps and mazes. Of a thing which could not be put back. Not be made right again. In the deep glens where they lived all things were older than man and they hummed of mystery. (McCarthy 2006: p. 305)

Through these words, with poetic reminiscence, McCarthy concludes the apocalyptic tale of *The Road*. In this novel, the reader follows a father and son traveling through an ashen landscape, lacking resources and direction, while terrorized by the brutal and barbaric remnants of humanity. The duo treks through an unforgiving landscape void of plant and animal life, on a thoroughly devastated Earth. It is a harsh and violent novel, but in the very last words of the saga, McCarthy finally hints at beauty. The quotation above describes a world of mystical natural splendor, of fragrance, brilliance, harmony. This paradise is our lost world – our planet Earth. It appears that, from a dystopic future, McCarthy peers back to current generations, imploring us to prevent catastrophic disaster: protect your mountain streams, your exquisite animals and their ancient perfection from yet preventable obliteration.

In 2009, *The Road* became a stomach-churning movie that reflected upon the morality of survival. The book suggests that humans will be open to an extensive menu of amoral actions to subsist, including killing and cannibalism. Facing the breakdown of human morality is all the more compelling against the backdrop of what was lost: not only a world to explore, but also, other humans on whom to rely.

The end of collaboration and subsistence haunts the novel until the last word. The cause of the collapse is unknown, as the reader merely finds herself in a bleak and irreversibly ruined world. The reason is irrelevant. What is important is to recognize *what is lost* – our current way of life, our sense of security and stability, and the fragile balance of our ecosystems.

At their best, apocalyptic tales send us a moral message to protect what we have, to allow our children and their children a chance to live in a world of amber mountain streams. This example evokes the second just sustainabilities principle, of meeting the needs of present generations while not compromising the opportunities of future generations to enjoy a comparable quality of life. The principle has been, perhaps, one of the most successful ideas that sustainable development thinking has advanced, and it is now part of popular imaginaries of environmental policy.

In this chapter, we advocate for a form of urban planning as a means to understand the needs of present and future generations. On the one hand, we call for explicit consideration of the notion of the future in sustainability, and reflection on how ideas of the future are embedded in the concept of sustainability (Section 6.2). On the other hand, this means giving careful thought to the question of knowledge (Section 6.3) and of representation as alternative approaches to planning (Section 6.4). Here, the example of the "right to the city" provides an example of the close link between self-determination and future visioning. The chapter finishes with an evaluation of some cases of how the second just sustainabilities principle is applied (Section 6.5).

6.2 Notions of the future in sustainable development discourses

> Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. (WCED 1987: Chapter 2)

The statement above is one of the most oft-quoted statements from the Brundtland Report: the very definition of sustainable development. The Brundtland Report appears, on the surface, to be greatly concerned with the needs and concerns of future publics.

The entire document is, after all, titled *Our Common Future*. The word "future" features 75 times throughout the text, often in statements related to future growth, future resource consumption, future industries, protection of ecosystems in the future, cities of the future or similar. Yet, for such an explicitly future-oriented agenda, the document displays surprisingly little engagement with the definition and understanding of future *generations*. Who are the generations of the future? And how do we know what they want or need?

Table 6.1 provides an overview of the treatment of the theme of "the future" and "future generations" in the Brundtland Report. These statements show the association between realizing a development that meets the needs of future generations and strategies of protecting the natural environment. As was discussed in previous chapters, sustainability has often come to be associated with resource efficiency and related technological solutions. From this perspective, it is possible to meet the needs of future generations by merely becoming more efficient and using fewer natural resources – thus allowing room for future development and consumption.

This approach is readily reproduced in sustainability policy strategies, as any resource conservation agenda can be enacted on behalf of the well-being of future generations. For example, the United Nations has put forward a UN Framework Classification for Resources (UNFC) that "provides countries, companies, financial institutions, and other stakeholders a futuristic tool for sustainable development of energy and mineral resource endowments" (UNECE 2018). In 2005, the European Environment Agency similarly published a report on the sustainable use and management of natural resources, "in recognition of the importance of the sustainable use and management of natural resources on the policy agenda" (EEA 2005). However, these calculative approaches assume a future in which needs materialize predominantly in environmental or material domains, and where current patterns of inequality are made invisible.

Since its inception, the formulation of needs of "present" and "future" generations was met with political and economic concerns about what a historical perspective on the environment would mean. Many of these debates took place within the confines of economic discussions about development and growth that dominated international relations in the 1990s. One debate emerged from the concern

Table 6.1 Future and future generations themes in the Brundtland Report

Theme	Explanation	Demonstrative quote
Interconnection of the needs of present and future generations, and reproduction of the patterns of inequality through time.	Depletion of global resources and ecosystems will lead to a lack of natural assets for the people of the future. We can conclude that there is a connection between the needs of current generations and people of the future – there is also an assumption that current patterns of inequality will extend to future generations. Out of those two observations (both of which we discuss below), the first is far more prominent throughout the document.	"[W]ithout agreed, equitable, and enforceable rules governing the rights and duties of states in respect of the global commons, the pressure of demands on finite resources will destroy their ecological integrity over time. *Future generations* will be impoverished, and the people who suffer most will be those who live in poor countries that can least assert their claims in a free-for-all."
Responsibility towards future generations extends to non-humans, regardless of their present value to humans.	Here, we can surmise that animal and plant species and the ecosystems in which they live must be protected to leave them intact for future generations. Moreover, such protection is crucial to achieving "sustainability." We are reminded, here, of apocalyptic warnings to protect the people of the future from ecosystem collapse and loss of animal and plant life, which may eventually create an uninhabitable planet.	"There is still time to save species and their ecosystems. It is an indispensable prerequisite for sustainable development. Our failure to do so will not be forgiven by *future generations*."
Centrality of peace, and peace as a sustainability theme.	To extend peace to present and future generations the protection of the environment is needed.	"Utilization of spacecraft for solving the problems of forestry provides a good example of the peaceful use of space. Taking into account the interests of the *present and future generations*, there is no other more favourable area of space technology application than environmental protection, to study the natural resources of Earth and control their rational utilization and reproduction."
Link between rational uses and assuming responsibility.	Environmental protection is assumed here to be an essential interest of both present and future generations. Ensuring "rational" resource utilization, on behalf of future generations, legitimizes resource management and use of space technology in this particular context.	"Recognition by states of their responsibility to ensure an adequate environment for *present as well as future generations* is an important step towards sustainable development."

Source: authors' elaboration based on Brundtland Commission (1989).

about the extent to which the external debt of countries of the South was stifling development. Around the same time, eco-feminists, ecological economists and environmental activists raised the question of the ecological debt, that is, the debt that countries of the North have towards countries of the South, whose resources and population have been exploited through colonialism (Martínez-Alier 1997, Dillon 2000, Martínez-Alier 2000, Oddone and Granato 2005, Donoso 2011). This ecological debt emerges from different areas, including carbon debt, biopiracy debts and the marketization of genetic materials, environmental liabilities and waste dumping (Russi, Ventosa et al. 2003).

Measuring this debt – so that it can be paid – is a challenge (Srinivasan, Carey et al. 2008, Goeminne and Paredis 2010). For example, McLaren (2003) accomplishes this task by drawing on the concept of environmental space: the specific amount of resources that each individual can consume while remaining within the carrying capacity of the Earth and living above the minimum required for human dignity. In 2003, McLaren estimated that each individual in the global North consumed an environmental space five times larger that that of each individual in the global South. Redistributive efforts are thus required to ensure intragenerational equity. In practice, this means that the rich world needs to provide more resources to support the rest of the world to transition towards sustainability.

The notion of ecological debt makes visible the historically and current unequal relations between the South and the North, but it does so by applying the same calculative strategies of mainstream sustainability thinking. Some of the thinkers behind this idea have already raised the importance of focusing on identifying responsibilities, rather than supporting the creation of new green markets around such ecological debt (Donoso 2011).

Both of these approaches (sustainability management and ecological debt) assume a fixed view of the past and the future, where impacts, risks and priorities can be painstakingly accounted and repaired. From our perspective, reparation requires deliberation. The ecological debt extends over many countries and in many forms and relates to multiple forms of exploitation whereby capitalism imposes a calculative logic. Such logic can only be countered with careful consideration involving the multiple perspectives on what matters for life and the planet.

In the sections below, we attempt to deconstruct the seemingly simple definition of sustainability from the Brundtland Report, by critically examining: (1) how to understand, predict and plan for the future, and (2) how to define the needs of a current or future population through strategies of representation and deliberation.

6.3 Knowledge and uncertain futures

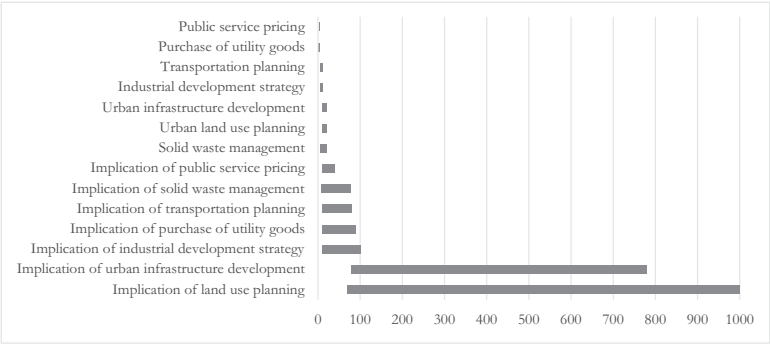
One of the most problematic components of protecting the needs of future generations is that it presupposes some knowledge of when the future will occur and what will happen there. That implies that the image of the future enables interventions in the present. Sustainability thinking often presupposes such opportunities to improve conditions for the people of tomorrow, but such assumptions require a sober consideration of the uncertainty of the future and how this constrains the ability to understand and represent future generations.

A first question related to knowledge of the future is what it means to have a long-term versus a short-term perspective. One of the most famous theories of long- and short-term perspectives in human history emerges from the thinking of French sociologist Fernand Braudel. Braudel (1958) used the concept of the *longue durée*, which describes the change that occurs over very long periods of time. The *longue durée* captures how elements of society are interconnected with physical geographies, which creates patterns that are consistent over such long periods of time that humans are unable to perceive their change. Developments that occur in the *longue durée* are so slow and complex as to unfold out of reach of direct actions and strategies of individual human beings. This has implications for the ability of humans to intervene in long-term development patterns, or at least to do so deliberately and effectively. If humans are unable to make decisions with planned implications that occur over, let's say, centuries, then how can we deal with long-term challenges such as global environmental change?

Policy scientists have long recognized the inability of policymakers and planners to deal with complex, long-term change. As described by Lindblom (1959) in his seminal essay "The Science of Muddling Through," policymakers are usually unable to rationally select policy strategies that will best solve a problem or predict the outcomes of their decisions. This dramatically limits the ability

of public plans and policies to deal with complex, long-term challenges. Lindblom's observations were followed by decades of research that documented the inherently chaotic, non-linear and non-rational nature of policy processes (e.g., Bardach 1977, Lipsky and Bureaucracy 1980, Pressman and Wildavsky 1984). These studies resulted in consensus regarding the short-term, incrementalist and messy reality of decision-making and implementation processes in most political systems.

There are, in fact, pervasive mismatches between the duration of plans and policy strategies and the time required for complex social and environmental problems to unfold. For example, sustainability researcher Xuemei Bai (2007) has illustrated the mismatch between urban planning decisions and their socio-environmental effects by mapping their durations on a timeline. As is demonstrated in Figure 6.1, the typical time-frame of planning decisions, such as industrial development strategies or transportation planning, typically extends about ten years into the future. Urban land-use plans and infrastructure development projects may have somewhat longer time-frames, possibly up to 20 years. By comparison, the environmental implications of such infrastructure and land-use decisions unfold over a hundred or even a thousand years. Such temporal perspectives are rare or impossible to apply in political decision-making processes. This issue is exacerbated by shifting political mandate periods that typically last around 4–5 years. This comparison demonstrates that what is a long-term perspective may



6.1 Temporal scale of planning processes and their environmental implications in years (adapted from Bai 2007: p. 20)

shift depending on the problem at hand and that this term takes on a fundamentally different meaning in politics and geology.

The difficulties for policymakers, planners and researchers to adopt long-term perspectives creates serious implications in terms of their ability to address sustainability challenges. This has been a problem for environmental scholars since the beginning of the environmentalist movements.

As an illustration, Julian L. Simon famously won a bet against Paul Ehrlich because he argued that resources would be more abundant, rather than scarcer, in 1990 compared with 1980. He argued that the planet was getting better, and that business-as-usual capitalism would move the world towards environmental equilibrium. In 1995 he wrote: "It is very frustrating that after 25 years of the doomsayers being proven entirely wrong, their credibility and influence waxes ever greater" (Simon 1995).

Simon's view attracted considerable attention in the media (Easterbrook 1995). His view also inspired the publication of *The Skeptical Environmentalist*, a book that laughed at *The Limits to Growth* because the world did not run out of oil in 1992, as the first model predicted (Lomborg 2003). *The Skeptical Environmentalist* created controversy not only because it contradicted most scientific assessments of the environment state, but also because of its positive reception, particularly in the popular press. However, it is unclear that Simon's and Lomborg's arguments have done a lot more than satisfy a certain desire among a sector of the public opinion to be reassured that things are all right. As we know that things are not all right, and this is increasingly patent in climate change impacts, pollution, ocean plastics and the dire state of wildlife and biodiversity (just to mention some of the issues that have featured prominently in the press over the last six months), this critique of environmentalists as doomsayers ignores the elephant in the room.

Steffen and colleagues (Steffen, Grinevald et al. 2011: p. 862) have explained that with a civilization on the brink of collapse, the insights about the massive changes taking place in the Anthropocene are met with a similar reaction to that received by Darwin's theory of evolution at its time (outrage, anger, disbelief). The difference now is that our future and the future of our children depends on us believing that we must do something to stop environmental catastrophe:

> The concept of the Anthropocene, as it becomes more well known in the general public, could well drive a similar reaction to that which Darwin elicited. Can human activity really be significant enough to drive the Earth into a new geological epoch? There is one very significant difference, however, between the two ideas, Darwinian evolution and the Anthropocene. Darwin's insights into our origins provoked outrage, anger and disbelief but did not threaten the material existence of society of the time. The ultimate drivers of the Anthropocene, on the other hand, if they continue unabated through this century, may well threaten the viability of contemporary civilization and perhaps even the future existence of Homo sapiens.

The challenge is that alongside the moral imperative for action, we need to accept that action is possible. Apocalyptic views of the Anthropocene are not liberatory but paralyzing. Doing something depends on the belief that the action will impact on having a better future. Is it possible to take seriously the warnings of the Anthropocene, as embraced by leading natural scientists of the Anthropocene, without fixing the future as a vision of inevitable disaster? In an article in *The Guardian*, Robert MacFarlane (2005) argues that we can, making a case for literary imaginations of global environmental change that steer clear of apocalyptic scenarios. The reason, according to MacFarlane, is that dystopic tales of sudden collapse clash with the incremental nature of global environmental change, which plays against rather than informs environmental consciousness. Citing the miscalculations of the alarm bells in the 1970s and 1980s (the population bomb and the end of oil), MacFarlane calls instead for attention to the creeping changes, the incremental transformation of nature and daily lives that we can observe. They may be no less unnerving but grounded in real experience and more closely associated with real concerns. Another approach to the Anthropocene theories is to translate the apocalyptic warnings into radical programs for social change. This is the perspective adopted by proponents of ideas such as deep (Bendell 2018) or transformative adaptation to climate change (Pelling, O'Brien et al. 2015), who recognize that fundamental shifts in values, discourses, behaviors and institutions are necessary to respond to global environmental change.

Groups of scientists can develop global assessments and consensual perspectives on dominant trends. Such assessments have

supported collective and broadly recognized evaluations of the state of the world internationally, for example through the work of organizations such as the Intergovernmental Panel on Climate Change (IPCC) (although the IPCC also regularly underscores the uncertainty of their predictions and the difficulty of measuring and understanding global climate change) (Stocker, Qin et al. 2018). These assessments, however, are not easily translatable into clear positions to develop policy and planning solutions at the local or regional level. Not only it is not possible to have accurate knowledge of how the future will look, but also, it is impossible to have accurate knowledge about how the people of the future will look at the values and assumptions underpinning those predictions.

The associated problem is that values and assumptions are embedded in scientific predictions, which often are made invisible through appeals to objectivity. This was pointedly raised by Lélé and Norgaard (1996) in their essay "Sustainability and the Scientist's Burden," in which they argued that the very notion of sustainability is inextricably linked to value judgments and conflicting interests. These values are embedded in all forms of knowledge – in decisions on what factors to study and in propositions about *what* to sustain. Meadowcroft (2011) illustrates this point in a similar way by arguing that visions of a sustainable future can never be separated from politics and normative judgments. The case of carbon capture and storage (CCS) is used as an example. While we may (or may not) agree that greenhouse emissions are leading to dangerous climate change, employing CCS to abate emissions may remove funding from alternatives, may lock fossil-fuel infrastructure into use for a longer time, and may have unintended environmental consequences. Whether or not CCS is a solution to climate change is ultimately a political question, and the outcome of that political decision is uncertain. A robust set of criticisms against technocracy reveal that the production of knowledge in the environmental domain always is political (see Chapter 3).

These types of arguments have led to efforts to reimagine the environmental sciences and proposals for new models of the relationship between science and policy. "Post-normal science" is a method of inquiry to be developed in situations of high uncertainty and high political stakes (Funtowicz and Ravetz 1993). "Normal science" was

the term used by Kuhn to refer to "puzzle-solving science" that precedes and continues after a change of scientific paradigm (Kuhn 1996 [1962]). Funtowicz and Ravetz document the emergence of a new type of inquiry that incorporates contributions of an "extended peer community" which includes all people with an interest and a desire to participate. Citizens are attributed the role of quality assurance in these new scientific processes (Funtowicz and Strand 2007).

Post-normal science is presented as a solution to "wicked" problems (Rittel and Webber 1973): policy issues that are persistent, hinge on deep societal problems, cannot be easily reversed, are not associated with a set of clear solutions and imply redistribution. While traditional policy approaches struggle to deal with such challenges, post-normal approaches offer alternatives to work through processes based in consultations with extended peer communities, and deliberations over long-term futures where "all" voices are heard ("clumsy" solutions) (Frame 2008).

Another proposal is called "Mode 2" science. Mode 2 emerges as a response to the blurred boundaries between science and policy, between pure and applied science and the turn towards problem-solving and trans-disciplinarity (Nowotny, Scott et al. 2001). The claim is towards a shift from "reliable knowledge" (as advocated by traditional science) towards "socially robust knowledge" (Gibbons 1999), validated outside the laboratory by involving "lay experts" (Nowotny, Scott et al. 2001). The main feature of Mode 2 Science is situating science in its context:

> The old image of science working autonomously will no longer suffice. Rather, a reciprocity is required in which not only the public understands how science works but, equally, science understands how its publics work. (Gibbons 1999: p. 15)

This new understanding of science opens new forms of inclusion of citizens in the framing and construction of knowledge (Hage, Leroy et al. 2010, Jasanoff 2004) and emerging theory and practice on citizen science (Dickinson, Shirk et al. 2012, Silvertown 2009). Also, it has contributed to new strategies for dealing with the uncertainty of knowledge. Exploring how scientific uncertainty should be interpreted in government policy making, Wynne and Mayer (1993: p. 33) observe:

> The most important point to emerge may be that the interpretation of uncertainties in and around such scientific models has been seen as a scientific matter, for scientists alone to resolve, when actually it is a process riddled with social and political implications, and requires a wider debate.

Wynne and Mayer argue that policy can be scientifically precise only by demarcating problems in specific terms and excluding the possibility of unforeseen events. This lends scientific advice an illusion of objectivity and creates credibility by excluding human and social experiences. By contrast, we see engagement with social realities, political conflict and diverging interests as the chief means to reconcile uncertainty and the construction of future visions. This can only be realized through strategies of representation and deliberation, as explained in the following section.

6.4 Identifying future needs through representation and deliberation

Let's say that we agree on current social and environmental risks and their expected impacts in the future. The next problem is how to address the needs of future generations. It is possible to assume knowledge of preferences of multiple publics of the future. In this case, sustainability planning becomes a utilitarian technocratic project, because a policymaker, engineer or ecologist is defining the preferences of the people of the future. This is a practice that is implicit in resource management agendas carried out under the banner of sustainability, allegedly for the benefit of future generations. We have criticized this at length in Chapter 2.

We argue that quantitative assessments of future needs (models, debts, inventories) do little to answer questions about the needs of future generations, as these approaches are embedded in the values of people today. If we assume that the preferences of future peoples are unknown, we must decide instead how to realize political representation for a generation of people that do not yet exist. This dilemma calls for the need to reimagine planning as a process that brings together a multiplicity of voices, confronts and reflects on these views together, and provides people the right to decide today and in the future.

In this section, we approach the question of the needs of future generations as an attempt to realize representation and deliberation.

While still an imperfect strategy to find out what people in the future want or need, we focus on what is for us the closest possible proxy: presenting people with appropriate forums in which multiple opinions can be heard and considered. Thus, the challenge is how to represent everybody fairly in political processes.

This aim is recognized to some extent in international development agendas. As declared by the UN Declaration on the Responsibilities of the Present Generations Towards Future Generations:

> It is important to make every effort to ensure, with due regard to human rights and fundamental freedoms, that future as well as present generations enjoy full freedom of choice as to their political, economic and social systems and are able to preserve their cultural and religious diversity. (UNESCO 1997)

While this statement is a good starting point, it provides us with little clues as to how future generations may enjoy their "full freedom of choice." The key problem is that the democratic process as we know does not directly address future generations. As observed by political theorist Dennis Thompson (2010), future citizens have no voice in the democratic process because they have no access to it in the now. Still, they must live with the decisions imposed on them by earlier generations. Thompson's solution to this problem is trusteeship of the democratic process itself. That is, current generations must protect democratic decision-making systems so that future generations may enjoy equal rights of self-determination. This may constitute an important step, but an approach vulnerable to weaknesses pointed out by Thompson (2010: p. 17) himself:

> Democracy is not disposed to sacrifice citizens or a whole generation for some distant future goal. It is less vulnerable to the claims of utopian idealists, religious zealots, or radical revolutionaries who call for great sacrifices from the present generation to bring about even greater good for the future of mankind . . . Nevertheless, this virtue of democracy becomes a vice when the good of future citizens are at stake. Presentism manifests itself in laws that neglect long-term environmental risks.

Thompson identifies four reasons why democratic decision making prioritizes the short term: a human tendency to discount the value of the future ("time inconsistent preferences"), the obligation of elected leaders to favor current constituencies, the temporal limits of political mandates, and a tendency to favor the needs of the elderly over the young (they are more numerous and exercise a stronger political influence).

These reflections create new perspectives on the school strikes against climate change. Inspired by Swedish teenager Greta Thunberg, these strikes are a manifestation against the adult world and its inability to produce credible responses to the climate crisis. Greta Thunberg has skipped school to sit outside the Swedish parliament every Friday since August 2018. Her protest has inspired similar action in an array of countries all over the world under the banner of #FridaysforFuture. This reaction seems the embodiment of future generations complaining in the now, or at least of a young generation exasperated because the generation in power ignores their future. The schools strike is a vivid illustration of how democratic decision-making systems discount the future and the demands of the young.

In political theory, the question of representation in decision-making reflects the logic that different populations be represented by people that stand for their group (in the case above – young generations that are overlooked by the political establishment in most countries). Hannah Pitkin (1967), in her influential publication *The Concept of Representation*, has documented the various expressions of this phenomenon, ranging from Hobbes' formalistic approach (a government represents its constituency and is therefore always representative) to the differences in *standing for* and *acting for* someone else. Representation can be realized by inclusion in the political processes of individuals from groups targeted by that process – women *standing for* the rights of women. A key argument here is that only individuals of a specific age, gender, race, migratory status, can understand the perspectives and experiences of this group, and represent their preferences in a political process. However, Pitkin observes that representation can also be realized on a substantive basis, by acting in the interest of those represented, in a manner that responds to their preferences. For example, an elected politician could *act for* the youth of the school strikes, advance their cause in political debates. Both perspectives are subject to ongoing debate. In terms of the representation of women in politics, for example, discussions are ongoing on how to

understand representation outside Western liberal democracies, or the relationship between standing and acting for (Celis, Childs et al. 2008).

Issues emerge in the realization of political representation, as important groups often do not have a voice. For example, very poor people tend not to be represented in political processes because of inherent inequalities in the structures of knowledge production and governance. Bartels (2009) has documented this difference in access in the US political system, where the deepening wealth gap has been accompanied by unresponsiveness of elected officials to the needs of the poor. Bartels describes this specifically in terms of a deficiency of representation of low-income groups, caused to a large extent by the intimate links between economic and political power. Representation of the poor takes on even greater urgency in the light of postcolonial patterns of domination. From this perspective, global institutions were created by Western powers and made to reflect the values of those societies, while the current economic-political system is built on historic injustice that favors representation of ideas and groups of the global North. Further, non-Western identities, forms of knowledge and values are systematically under-represented in discourses and institutions built on modernist, rational Western thought. This is made especially visible in the appropriation of indigenous lands and resources, where lack of political representation (in combination with disadvantages in socioeconomic power and status) prevents influence over decision-making processes. This is also an invisible problem in the formulation of sustainability futures where non-Western ideologies and worldviews often are completely missing. The problem of representation of "the other" is a political act in which such otherness is created, making at the outset an assessment based on unfair historical grounds. However, not recognizing how society conditions identity, and hence shapes life choices, would be equally unfair.

Intersectionality invites the analyst to examine inequalities not as a separate instance, but as the product of intersecting systems of oppression (e.g., Geerts and Van der Tuin 2013, Nash 2008). Smooth (2011), for example, documents how African American state legislators navigate the complex and cross-cutting domain of "women's issues," how it interlaces with questions of race and children's issues, and how policy issues are interpreted in different ways according to perspectives and life experiences. Thus, representation becomes even more challenging as every experience of inequality

is almost unique to the individual who experiences it. In this way, environmental change is experienced differently depending on each individual's positionality in structures of power and marginalization, while this position also influences opportunities to act or to shape ongoing discourse (Kaijser and Kronsell 2014). Different views on the loss of public spaces, green infrastructures and wildlife, the suffering of environmental pollution and the loss of the Earth can never be fully represented by any one perspective or person.

Further, representation is not only about humans. If we consider nature as something intrinsically valuable independent of its relation to humans, then nature would have to have a voice – as is strongly echoed in the beliefs of many environmentalists, including deep ecologists and political philosophers (O'Neill 2001). Moral justification for this claim is found in the belief that animals, just as humans, also have inalienable rights or in a broader philosophical belief in the inherent integrity of nature (see Chapter 3). The question of how to meaningfully represent nature in political processes presents obvious practical dilemmas but can not act as moral justification for not doing so. Eckersley (1999: pp. 44–45) observes:

> What is being suggested is that the requirements of rational argument that are taken to be implicit in communication (such as truth, sincerity, the absence of strategic interests, and the absence of domination through the exercise of power over others) should be extended further to guard against the domination of affected "non-human others," precisely because they are in an especially vulnerable position vis-à-vis those who are able to voice their concerns and arguments. The fairness of deliberative institutions, decision rules, and forms of representation are to be judged by the degree to which they are open to all voices, interests and concerns. Conversely, the absence of adequate representation of those not present may provide good grounds upon which the legitimacy of any decision may be impugned.

Eckersley (1999) points towards a form of "vicarious representation," which would function as a set of moral guidelines that avoid placing any "silent environmental constituency at risk." Decision-making procedures should then integrate precautionary principles vis-à-vis environmental impacts. Another proposal is to represent the interests of nature through groups or individuals that have "internalized" their

preferences – a form of substantive representation, or *standing for* nature, in Pitkin's term. We should make space at the table for representatives of nature who speak from perspectives of often overlooked human–nature relations, in particular, non-Western interpretations, such as those "speaking for" nature from an emotional or spiritual point of view (Cilano and DeLoughrey 2007).

Even if it were possible to give a voice to everyone who is on Earth, it would never be possible to provide a voice for everyone who is not, both in terms of following on from the wishes of our ancestors and delivering on the wishes of our children and grandchildren. While imperfect, we follow the beliefs of political scientists who argue that collective agreement follows the positioning of contrasting visions and the clash of agonistic views (Mouffe 2005). Alternative perspectives may be made visible through engagement and amplification of the voices of activists and radical thinkers. Another view is the need to be in continuous search of the voice of the subaltern. As sustainability scholars or practitioners, no matter how extreme we think ourselves, we are well embedded in the mainstream. Lack of reflection among ourselves and reproduction of the now paradigmatic sustainability discourse can, in the words of Michael Gunder (2006), "impose pernicious effects of injustice on those that are planned within society as well as adversely effect the environment." The task is to listen.

Bringing the discussion back to deliberation over sustainability in urban areas, we share below two strategies of representation and deliberation, applied to sustainability thinking in cities: (1) movements to claim urban sovereignty, such as the right to the city; and (2) movements that enable collective, multi-perspectival visioning, such as urban visioning exercises.

Claiming the right to the city The concept "right to the city" was originally introduced by Henri Lefevbre in 1968 as a challenge to the capitalist appropriation of the city and to re-establish the primacy of people over profit. Harvey (2003: p. 939) argues for a right to the city that extends beyond property rights and neoliberalism, reflecting:

> The right to the city is not merely a right of access to what already exists, but a right to change it after our heart's desire. We need to be sure we can live with our own creations (a problem for every planner, architect and utopian thinker). But the right to remake

ourselves by creating a qualitatively different kind of urban sociality is one of the most precious of all human rights.

In *Rebel Cities*, Harvey (2012) continues the exploration of this concept. Here, he argues that the right to the city has come to portray the urban as a main site of protest and revolt. This is an interpretation that has shifted the traditional understanding of class struggle from a relatively homogeneous group of factory workers, towards fragmented and diverse constellations of urban dwellers. To Harvey, the right to the city becomes a unifying rallying cry of the marginalized, displaced, paperless – largely against the oppressive forces of capitalism. The concept encompasses debates on realizing this right through self-determination and self-help, or radical means like invasion and squatting. Parnell (2016b) speaks of the right to the city as the new utopian discourse of cities in the global South, which involves legalization of tenure, holistic visions of the city, formalization of informal neighborhoods and universal right to shelter. As such, the notion has been picked up and reinvented by social movements around the world fighting for access to land and public space, clearly reflecting how the notion resonates with a diversity of urban dwellers in different settings. For example, the international organization War on Want (n.d.: p. 2) write in a leaflet on the right to the city:

- *What right?* People's right to reclaim, use, shape and remake our urban surroundings.
- *Whose right?* Everyone's common right, particularly people who are excluded or marginalized.
- *What city?* Your city how you choose to create it.

The same leaflet describes how the right to the city has become a unifying language for resistance against many forms of injustice and oppression in cities through rising property prices, privatization and accompanying forces of gentrification, systems of surveillance and anti-squatting laws, and commodification of urban nature. Activists have gained support from the principle as it brings together disparate causes: access to affordable housing in London, the right to a life of dignity in urban South Africa championed by Abahlali baseMjondolo ("people living in shacks"), mass demonstrations claiming the right to basic services in Brazil,

and organizations working for rights of informal traders in urban Kenya, Malawi and Zambia (War on Want n.d.).

Some of these struggles emerged as resistance against conditions of life in informal settlements, or against legal barriers to squatting in the face of empty buildings alongside homelessness. Since then, the work of many social movements moved from talking of the right to housing (too often commoditized in a sense of right to property) to a more fundamental right to the city. For example, the Right to the City Alliance (RTC), established as a national movement for urban justice in the US in 2007, picks up the struggle against "displacement of low-income people, people of color, marginalized LGBTQ communities, and youths of color from their historic urban neighborhoods" (RTC n.d.). This branch of the movement advances broader questions including indigenous and immigrant justice, freedom from police harassment, the right to democracy and participation, and environmental justice in cities.

To different extents, the right to the city has become embedded in regulatory frameworks (Brown and Kristiansen 2009). The European Charter for the Safeguarding of Human Rights in the City, produced in 2000, promotes the right to the city concerning equality, non-discrimination and political participation, but also as a collective space available for all citizens. In Brazil, the right to the city is enshrined in the City Statute law (2001), which emphasizes social dimensions of land use, participation in urban governance and provision of services to informal settlements. Sao Paulo has established a Right to the City Coordination as part of its municipal governance system, with the explicit aim of creating public policy for social inclusion. The Montreal Charter of Rights and Responsibilities, created through a citizens' dialogue in 2002, promotes democratic participation and access to adequate housing and services, as well as dimensions like environment and culture. Other examples are the Mexico City Charter for the Right to the City, developed by a set of organizations and adopted in negotiation with the local government in 2007, and the World Charter for the Right to the City, following the World Social Forum in Porto Alegre, Brazil in 2001. The right to the city represents for social movements the direct aim of challenging neoliberal logics that underpin urban development today.

Despite this recognition, the Right to the City was not adopted as a principle in the New Urban Agenda (NUA). The principle was

instead "noted" in point 11 of the introduction: "We note the efforts of some national and local governments to enshrine this vision, referred to as 'right to the city,' in their legislation, political declarations and charters" (UN-Habitat 2016a). While the NUA speaks profusely of equality and inclusion, this is reduced to access to housing and needs. International organizations struggle to adopt radical and transformative agendas. The focus on delivering a consensual process meant that those *standing for* change were not fully represented.

Visioning and transitions management The second example relates to a planning approach that is gaining ground in research and practice on sustainability transitions, namely collaborative visioning. Sustainability transitions theory is drawing increasing attention in the light of the pressing need to accelerate action to address global environmental change (EEA 2018). A transition represents a complete reconfiguration of a technological system and associated elements: social institutions, material infrastructure, markets and individual routines and behaviors. Academically, this approach is rooted in complex systems thinking, which perceives processes of change as inherently chaotic, non-linear, unpredictable and involving multiple sectors, levels and actors (Geels and Schot 2007, Grin, Rotmans et al. 2010). As a result, contributing deliberately to such processes requires long-term visions and continuous social learning (in the sense of systems thinkers like Donella Meadows).

An approach to planning that relies on these elements is promoted under the label of transitions management. Transitions management (TM) is an approach that combines construction of long-term visions through collaboration with short-term experimentation to test development pathways (Voß, Smith et al. 2009). Its proponents advocate multiple dimensions of the planning process that seek to address and overcome classic challenges: articulate visions with innovative forerunners (ensuring radical objectives), create coalitions across a broad span of interests (to realize implementation), extend the time span over decades (up to 25–50 years), update visions based on insights from experiments (back-casting allows experiments to be connected with the long-term vision) (Voß, Smith et al. 2009, Loorbach 2010). This approach deals with uncertainty through *reflexivity*: the process of allowing for ambivalence and contestation, taking care to evaluate and monitor results, and adapt experiments and visions over time creates opportunities for social learning.

Transitions management and its associated ideas have translated into both policy agendas and real-life experiments, including visioning exercises through transition arenas and living laboratories. For example, Nevens, Frantzeskaki et al. (2013) report on their work of implementing urban transitions labs (UTLs) in European cities (Box 6.1). Building on systems thinking, these steps begin from analysis and collaborative visioning, and exploration of transition pathways, move on to hands-on experimentation in urban spaces, and conclude with assessment and translation of results back into the cycle. The visioning process involves working with a group of sustainability innovation "frontrunners," characterized by thinking outside the box, who are expected to eventually disseminate the vision among their networks.

Box 6.1 The Living Street experiment in Ghent, Belgium (Gent Stad 2019, Roorda 2014)

The Living Street (leefstraat) experiment was conducted within a sustainability transition process towards low carbon mobility in Ghent, Belgium. The transition agenda included a vision of a future where streets were available for people rather than cars. To experiment with solutions to move towards this vision, car-free streets have been arranged on a temporal basis since 2013, to allow citizens to experience how the space could alternatively be used (residents were provided access to other mobility options during this time). The experiments are requested by residents living in the area and arranged in collaboration with the municipality and community services organizations. Living Streets become a new space open for appropriation, to create playgrounds for children, meeting spaces, garden spaces (flower and tree pots), benches or whatever residents prefer. The project can in this was contribute to intangible assets like community cohesion, while at the same time inspiring planners and decision makers in other settings with regards to what a low carbon mobility system may look like. As such, it is a visioning process in action, constantly created by urban dwellers themselves.

The future is a central concern to transitions management, which is addressed through the centrality of visions to the process:

> Visions are an important management instrument for achieving new insights and starting points and, therefore, a change of attractor. The visions created evolve and are instrumental: The process of envisioning is just as important as the ultimate visions themselves. Envisioning processes are very labor intensive and time consuming but are crucial to achieving development in the desired direction. This direction, as long as a sufficiently large group of frontrunners supports it, provides a focus and creates the constraints, which determine the room for maneuver within which the future transition activities can take place. Based on the sustainability vision developed, a process can be initiated in which transition paths are developed and a common transition agenda is drawn up. (Loorbach 2010: p. 175)

Visioning is a tool for managing full-blown reconfigurations of society towards sustainable systems. Implicit in this strategy is an assumption that the fundamental problem of society is one of backwardness, which can be redeemed through the introduction of new social and technological innovations (and associated social relations, markets and infrastructures). By moving forward, we can realize improvements (see a full critique of this argument in Chapter 3).

An important point for practitioners of TM to keep in mind is that this kind of visioning does not fall into traditional planning traps: inclusion of only the usual suspects, assumptions of knowing how to intervene in a complex system and engineer inherently unknowable process, and ostensibly value-neutral visions. This requires truly open-ended processes and consideration of alternative values and sources of knowledge.

In particular, exercises to create visions for the future need to remain vigilant of the ways in which such imaginaries reproduce values, relations and epistemologies of the now. As explained by Grove (2014), irresolvable uncertainty and lack of knowledge about the consequences of actions employed to shape the future not only make efforts to control it futile but may even result in exacerbating the problems they attempted to solve. Grove observes that "futurity in human experience is connected with how we realize value in our dealings with others and the world, and particularly through the production of meaning through attachment relationships and *care*."

As a result, future visions have a tendency to be fundamentally shaped by dominant social imaginaries – such as the capitalist economy or dreams of technological innovation. Instead of directing attention to the ineffective management of future events, Grove (2014, 2015) argues that responsibility towards future generations can only be exercised in the now, through ethics of care with regard to relationships in the present. Visions for technology and innovation, then, become oriented towards re-imagining institutions and aligning these with priorities of current citizens.

6.5 Local sustainability initiatives

Our empirical analysis demonstrated that it is reasonably common for local sustainability efforts to consider future generations, at least indirectly. This was the most commonly addressed criteria out of the four just sustainabilities principles, which relates to the history and influence of sustainability discourses. This criterion follows a vocabulary widely accepted and developed since at least the Brundtland Report, thus being enshrined in definitions of sustainability deployed in a variety of contexts. Below follows an analysis of trends in terms of strategies to directly or indirectly address this criterion.

Out of our sample of initiatives, 18 percent addressed the criterion explicitly, most of which were interventions based on long-term planning. The criterion is common in plans and strategies for climate change mitigation and adaptation and programs that address other future risks.

The experience of economic, social and ecological impacts of climate change, through increased frequency and intensity of weather-related events such as hurricanes, severe storms and floods, and droughts, for example, has led cities to include climate change plans in broader sustainability agendas. These plans include tools to improve resilience against flooding, rising heat and storms. An example is Philadelphia, where traditional piping is combined with open spaces to improve the city's stormwater collection, simultaneously increasing urban green space (Plushnik Masti 2014). Many adaptation schemes target the involvement of communities and particularly vulnerable populations. For example, the development of community preparedness and response plans often involves working directly with low-income communities in building awareness and capacity to deal with climate shocks. Future visioning is often central to these strategies (see Box 6.2).

Box 6.2 Collaborative visioning in TransformTO, Canada (CoT 2016)

TransformTO is Toronto's vision for a transformation towards a low carbon city. Underpinned by a long-term objective of reducing greenhouse gas emissions by 80 percent from 1990 levels by 2050, the process of formulating the strategy has relied heavily on co-creation through community engagement. In 2015–2016, the city engaged nearly 2,000 residents in dialogue, arranged through an online survey and multiple events, about their visions for a low carbon future. This included youth engagement strategies, which enrolled around 400 children and high-school students in creative visioning exercises. The ideas generated from these activities were collected into clusters of objectives (such as improved transport infrastructure and green space) that were eventually synthesized into a Community Engagement Report. This report is used to inform the selection of carbon actions, which were evaluated using modeling technology and discussed in stakeholder forums. A detailed strategy for action for TransformTO was subsequently formulated, which apart from quantitative emission targets included aims of diversity, equity and inclusion.

On the other side of the Atlantic, cities in the Netherlands are creating additional space around rivers to allow for flooding and using other nature-driven designs to protect coastal and river areas. Rotterdam's climate plan also features an industrial energy efficiency program, wind energy installations and a TechnoPark that supports green innovations, green roofs and gardens, with the overall aim of reducing emissions by 50 percent by 2025 from 1990 levels.

City dwellers in Africa are exposed to natural disasters compounded with structural factors shaping vulnerability, such as lack of access to water and sanitation (e.g., infectious diseases), risks related to poor housing (e.g., fires and indoor pollution) and to poor transportation infrastructure (e.g., air pollution and traffic accidents). Conditions of informal service provision in urban settlements exacerbate these risks (Douglas, Alam et al. 2008, HPN

2011, Adelekan, Johnson et al. 2015). Poverty-reducing measures and initiatives that improve the basic living conditions of the poor are effective in reducing vulnerability to risk. The international NGO Shack/Slum Dwellers International (SDI), which operates in 15 countries in Africa, focuses on community-driven upgrading of settlements, which can directly contribute to both risk reduction and improvement in the quality of life of urban dwellers (SDI 2016). Cities like Durban have pioneered the implementation of climate change plans that integrate community-based adaptation, sea-level rise management, reforestation and biodiversity protection (Roberts 2008).

Inhabitants of sprawling urban areas, whether newcomers or displaced internally through processes of gentrification, are forced to settle in locations that have earlier been left empty because of being unsafe for living, such as riverbeds, marshy lands and drain banks. This trend, along with continued urban growth and climate change, increases the risk of flooding in highly populated cities located in delta regions or on mountain slopes. However, resettlement – which often causes evictions – may have unbearable consequences for urban dwellers (Johnson, Cabannes et al. 2010). Involvement of communities at an early stage can make it possible to devise context-specific measures which respond both to the needs for flood protection and those of the communities (UNISDR 2012). Some cities are responding to these concerns by incorporating climate adaptation plans into their overall sustainability frameworks, often targeting water insecurity and risks of floods and soil erosion. For example, Bogotá, Buenos Aires, Quito and Sao Paulo have adopted municipal adaptation plans. The city of Manizales (Colombia) integrated environmental policy into its city development plan as early as 1995 and has worked with participatory processes to integrate the interests of local and regional government units, universities and community organizations (Hardoy and Pandiella 2009).

Disaster and vulnerability-reduction plans also include future-looking agendas. The Disaster Mitigation for Sustainable Livelihoods Programme (DiMP) at the University of Cape Town, for example, has developed a disaster risk reduction strategy that particularly emphasizes the risk of fire. This plan is directly supportive of the municipal informal settlement-upgrading plan. Another example is the Kathmandu Metropolitan City Risk Sensitive Land Use Plan (KMC-RSLUP). The document integrates risk assessment into

current land-use planning, encompasses physical, socioeconomic, environmental and cultural planning in KMC and stresses sustainable development. The project demonstrates that land-use planning can be an effective tool to lessen the physical, social and economic vulnerabilities of a city, as long as it considers histories of land appropriation and how people face evictions. Another example is the Baan Mankong Program in Bangkok, which used subsidized loans for community groups to improve settlements along the canal. The communities have invested in infrastructure that reduces vulnerability to flooding and water pollution, increases mobility along the channels and enhances safety. In doing so, the initiative aims both to improve citizens' quality of life and well-being, and to make manifest issues of representation and future planning. Explicit contributions towards protection of the natural environment is also part of the program.

Another category is planning schemes that explicitly consider present and future development trajectories, using a range of "future-oriented strategies" that have inspired new ways of thinking about visioning and the future, such as transitions management. For example, Freiburg in Germany has developed transport solutions to prevent urban sprawl and has protected a certain amount of urban green space from development. The strategy includes climate adaptation (e.g., permeable ground and "bio-swales") and climate mitigation measures. Other cities have adopted similar land-use and zoning policies that protect forest areas, hillsides and wetlands for future generations. In Canada, cities in the provinces of Quebec and Ontario are protecting high-quality farmland from urbanization, and other cities are experimenting with measures such as tax breaks for brownfield and infill redevelopments and habitat preservation, for example, the Revisols scheme in Montreal (CEGN 2005).

Urban agriculture projects in Sao Paulo and Quito are combining city greening, the creation of livelihoods and reduction of food insecurity. The Participatory Urban Agriculture project in Quito (AGRUPAR), run by Quito's economic development agency, has engaged over 12,000 urban and peri-urban farmers and almost 400 communities in over a thousand active gardens in the city. The gardens are producing around 400 tonnes of food per year and conserving biodiversity in the city by maintaining around 50 species of plants. Strategies to create a long-term supply of resources based on integrated recycling schemes – such as the water reclamation schemes

used in Singapore and Windhoek, Namibia, re-establishment of natural water cycles in Nagoya and a closed-loop water system in Kisumu, Kenya – were also included in this category.

Local governments have adopted environmental programs as part of school education policies, with the explicit aim of building a more sustainable society which will be manifest through the actions of future generations. For example, in Lleida, Spain, peri-urban vegetable gardens – with high landscape, ecological and historical interest – are under threat, because as elderly farmers leave, there are no generational replacements. To protect this "Garden of Lleida" the city council and the Higher Technical College of Agronomy have promoted the study and cultivation of traditional vegetable varieties – such as "farinetes" (pumpkin) or "llucat" (broccoli). They have also facilitated alliances between farmers, chefs or shop owners who can commercialize these products. Moreover, 50 schools have joined a Network of School Vegetable Gardens that cultivates traditional varieties of vegetables. There are also strategies to build skills and reduce the vulnerability of youth. For example, Heshima Kenya aims to protect unaccompanied and separated refugee children and youth, with a focus on supporting women and girls and providing shelter, education, vocational training, case management support and advocacy. Such programs represent a clear investment into the well-being of future generations.

6.6 Conclusions

The principle of addressing the needs of future generations has become deeply embedded in sustainability discourse. Hence, some notion of futurity is present in the vast majority of environmental initiatives in our sample (88 percent). However, by far the most common approach to realize this in practice is by indirectly addressing the criterion, typically through resource conservation strategies. This reflects the enduring impact of the notion of caring for the future as it was originally represented in *Our Common Future* – by reducing material consumption now, coming generations will be able to sustain a reasonable standard of living. This approach is unable to decouple needs from material well-being, consumption and econometric evaluations of quality of life, as was discussed at length in the previous chapter. While such initiatives can have

an empowering element (urban agriculture projects that integrate livelihoods and address marginalization, for instance), the majority take the shape of resource management programs (see also "The Continuing Dominance of Eco-efficiency Approaches" in Chapter 9 for a continued reflection on this tendency).

Counter to this trend, we also find a smaller share of initiatives that aim to secure a better future through planning: disaster risk reduction, future proofing, climate mitigation and adaptation plans and so on. Here we also encounter genuine attempts to create participatory processes, through consultations, dialogues, co-creation and community-driven action strategies. Yet, in terms of opportunities to address the needs of present and future generations, more work is needed to produce visions that reflect a genuine plurality of views and experiences. Announcing measures to address pre-defined needs of future generations is not enough. Public consultations and collaborative visioning also often run the risk of primarily including the voices of the mainstream. Harnessing the momentum of ongoing social movements to mobilize alternative visions (the zero-waste movement, the LGBTQ movement, the right to the city, car-free movements, transition towns, schools strikes, and so many others) may create viable pathways forward.

A number of important elements seem to be missing from ongoing activities. The first one consists of reflection on how the inequalities of today are reproduced into the future. Through our current patterns of consumption and production, historical injustice continues to be replicated and transmitted to future generations. Failure to tackle this reproduction of systems of power is a limitation in addressing the needs of future generations. Second, long-term sustainability initiatives tend to be those which are built on a long history of environmental action, such as the plans in Manizales, Durban and Freiburg. Looking towards the future also requires looking into the past and understanding structural constraints within a city's trajectory. The third relates to consideration of alternative epistemologies. As Escobar (2015) argues, seeking solutions to the problems produced through a Euro-modern paradigm from within dominant structures only results in the reproduction of those same challenges. Planning processes that remain characterized by dominant rationalities and power relations – that are "capitalist, rationalist, liberal, secular, patriarchal,

white, or what have you" (Escobar 2015: p. 15) – continue to make invisible alternative ways of life. Embedding what Escobar and Santos Sousa refer to as epistemologies of the South in strategies to address cotemporary urban issues is an underexplored approach in existing sustainability interventions.

The needs of the future cannot be addressed without first acknowledging the fundamental needs of the current generation and how inequality is shaping those. Many basic needs are still not met in current societies, high levels of poverty remain, and inequality within and between nations has increased over the decades since the 1990s. As noted in the Brundtland Report, current inequalities are likely to be reproduced, increasing the risk of large shares of future generations to live in poverty. Directing attention to poverty reduction and enhancing the quality of life of people of the present cannot be forgotten in the quest to create a better future. To engage further with this problem, we now turn to the third just sustainabilities principle: justice and equity in recognition, process, participation and outcome.

7 | JUSTICE AND EQUITY IN RECOGNITION, PROCESS, PARTICIPATION AND OUTCOME

7.1 Introduction

In December 2016 Charlotte Allen, a consultant on municipal governance in Mozambique, conducted a series of interviews in Maputo with both policymakers and residents. She aimed to evaluate a project – funded by the UK Department for International Development (DFID) – on participatory planning for compatible climate development conducted between 2011 and 2013. The original plan sought to develop place-based climate resilience pathways for urban development, that is, actions that would both facilitate sustainable development and increase people's capacity to respond to climate change (Castán Broto, Boyd et al. 2015, Castán Broto, Macucule et al. 2015). The central premise was that a participatory process could support the development of collaborative partnerships that, in the long term, would facilitate in situ adaptation and sustainable development.

The project aim was to demonstrate how participatory methods could help incorporate climate change as a regular consideration in urban upgrading, in projects in which communities themselves become involved in deciding and shaping improvements in their neighborhood. Over a year, it delivered an experiment in planning which adapted a well-known development tool, the Participatory Action Plan Development (Ensor 2011). The methodology included a systematic approach to identify vulnerable groups and groups that were not fully represented in local governance, as well as procedures to ensure that their voice was given proper acknowledgment.

Charlotte, who had been deeply involved in the original project, found the evaluation rewarding. Those who had participated in the project recalled it fondly. Joao Mucavele, Municipal Director of Waste Management, commended the way people were engaged, observing that "in this project, it became very clear that we have to involve the people in order to resolve their problems" (personal communication, Maputo, 2017). The project supported the formation

of a local committee, which developed multiple activities in the neighborhood from cleaning brigades to an inventory of water infrastructure. The impact on the very streets of the neighborhood was visible in transects. The project contributed to the requalification project of a sub-serviced neighborhood in Maputo that provided insights for upgrading other similarly poor neighborhoods elsewhere in the city. Organizations which had not been involved in the original project found the methodology compelling.

Charlotte was surprised to find that while policymakers were eager to praise the project, very few people among the local communities actually remembered its specifics. The literature often speaks of participation fatigue (Cornwall 2008) to describe the phenomenon of people who feel they are enrolled continuously in participatory exercises but see it as a useless process which delivers little benefits to their lives. According to Charlotte's data, people in this specific community either did not recall the project clearly or could not distinguish it from other local governance initiatives. Beyond participation fatigue, Charlotte's evaluation suggested that it is difficult to link an urban intervention with actual improvements in the neighborhood, even in a project whose explicit objective was to include local people.

Action to advance just sustainabilities always encounters a conundrum between the need to give due attention to the process of development and implementation, while at the same time delivering outcomes. Even when specific action can be tied to results, it is difficult to evaluate the extent to which that evidence can be attributed to those actions. This conundrum also emerges because of the false dichotomy of considering justice in terms of a trade-off between process or outcome, a dilemma linked with a long tradition of thinking in the West. Just sustainabilities action should be based on integrative approaches that help thinking about justice in terms of participation, process, recognition and outcomes. These recommendations map the complex multidimensional nature of justice and the importance of recognizing parity between what is done and how it is done: both the delivery of actions and the results need to match the aspirations of just sustainabilities. For us, three messages are relevant in this regard:

- First, we need to transcend the dichotomy between processes and outcomes by focusing on their complex interlinkages and opportunities to address both dimensions (Section 7.2).

- Second, we need to understand procedural justice in the light of the changing nature of environmental governance and the ascent of cooperative, people-based approaches to think of environmental futures (Section 7.3).
- Third, we need to incorporate principles of recognition to ensure the emancipatory aspirations of cooperative environmental governance are met: approaches to participation that preclude recognition will continue to exclude vulnerable groups (Section 7.4).

The empirical analysis of cases shows that any process of making decisions around the access and use of environmental resources is a profoundly political and social question. These sociopolitical dimensions often become visible through strategies to enhance participatory or redistributive elements (Section 7.5). However, while participation and recognition are explicitly addressed in some initiatives, they tend to be fixed in affirmative rather than transformative rationales, which may paradoxically reinforce current patterns of injustice rather than undermine them. We argue, therefore, for explicit attention to interventions that tackle structural drivers of injustice, as well as to impulses of change that materialize beyond the boundaries of formal sustainability policy and planning.

7.2 Results or mode of delivery: an environmental justice dilemma

One of the most enduring debates that have shaped conceptions of justice refers to what should receive most attention: the outcomes of action or the process whereby such action is reached. In the following sections we explore this dichotomy by reflecting upon influential debates on justice. These are presented here in a schematic manner, as more thorough treatments of environmental justice debates are already available elsewhere (Agyeman 2013, Agyeman, Schlosberg et al. 2016, Walker 2012). Moreover, these debates emerge from a Western tradition of political thought, and need to be presented not as foundational but as shaping how discourses of justice can be mobilized in environmental action. Nevertheless, these debates have played a key role in shaping conceptualizations of just sustainabilities, putting the challenges of redistribution and recognition at the center of environmental decisions.

Justice through outcome Theories of justice from the perspective of outcome relate to a notion of distributive justice. The concept of distributive justice rests on the idea that society contains a certain amount of benefits (goods or resources), including intangible assets such as class and access to political power, that could be distributed fairly in society if only a perfect mechanism of allocation would be devised (e.g., Cohen 1987). In other words, distributive justice is a question of outcomes of political processes.

Utilitarianism, introduced by Jeremy Bentham, is a principle that assumes that a just distribution of social goods is that which maximizes the utility of the largest number of individuals. Within this tradition, Rawls (1971) proposed to treat "justice as fairness." He followed a philosophical tradition which has proposed adopting a "veil of ignorance" to make moral decisions. In Rawl's version, this entails suspending knowledge about the self to prevent self-interest considerations from clouding fair decisions: the argument goes that individuals able to imagine themselves in other positions in society will be able to take decisions which are fair for all. By abandoning differences between individuals, we are able to adopt a universalist point of view. As Iris Marion Young (1990) has argued, this difference means covering historical differences with a dangerous veil of pretended impartiality which not only privileges that impartial view but also denies the need for restitution of societal differences.

David Miller (1979: p. 20) defined justice as a state of affairs "in which each individual has exactly those benefits and burdens which are due to him by virtue of his personal characteristics or circumstances." Among major philosophies related to defining what an individual may be "due," Miller identifies considerations of desert (individuals should get what they deserve), need (individuals should get what they need – at least minimum needs), or notions of rights by private ownership. These are all arguments that are present in environmental action, but their link with achieving justice is not always clear. What an individual has achieved may depend on the historical context in which they are situated, and hence, calculating what they deserve requires understanding the complex history whereby an outcome was delivered. Needs may also be open to discussion and assessment across society (see Chapter 8).

The latter idea is associated with liberal ideologies advocating protection of historic entitlements, legal rights and minimal

state interference as means to ensure justice. In urban areas, this perspective on justice has had an especially strong influence in debates and conflicts related to land titles. Peruvian economist Hernando de Soto, for example, argued that absence of land property rights lies at the core of poverty in most developing societies (De Soto 2000). Only by granting officially recorded land ownership could the poverty cycle be broken. At an early stage, Peru did in fact take steps to provide formal ownership of land in marginalized urban areas. In 1961, a law was issued that recognized occupation of land in urban fringes, with the objective of securing housing rights in informal areas (Calderón 2004). The Commission for the Formalization of Informal Property was formed in 1996 to speed up the process of formalizing land titles for poor city dwellers, which contributed to legalization of over one million land holdings in the late 1990s. However, De Soto's neat solution has been described as a "populist dream" (Gilbert 2002). Poverty and inequality still define everyday life in Peruvian cities. Titling initiatives not only reinforce an individualistic model of property and society, but also fail to acknowledge the dynamics behind exclusion and poverty. Distributing land ownership rights is not directly linked with just outcomes. In fact, it can work to exacerbate existing inequalities. In the case of Cameroon, for example, land tenure regulation has served to reinforce the power or the bureaucratic and political elite (Njoh 2013). Attempts at distilling liberal conceptions of justice into recommendations for action often face the fact that actions are situated in historical and political contexts where those carefully developed philosophical arguments do not hold ground.

Philosophers adhering to principles of equal access to goods have often concluded that justice only can be realized through redistribution, which legitimizes state interference in the re-allocation of resources. These ideas are the inspiration behind much of the world's historic and current class struggles and form the central tenet of communist and socialist political ideals. The most obvious is Marx's portrayal of a society in which the ownership of capital of production would be evenly distributed across the population rather than accumulated in the hands of the bourgeois. In the Manifesto of the Communist Party, Marx and Engels imagined a society in which individual property ownership and rights of inheritance were

abolished, incomes were heavily taxed and education was free for all children. They proclaimed:

> You are horrified at our intending to do away with private property. But in your existing society, private property is already done away with for nine-tenths of the population . . . Communism deprives no man of the power to appropriate the products of society; all that it does is to deprive him of the power to subjugate the labour of others by means of such appropriations. (Marx and Engels 1848)

Can we imagine a world without private property, a world without money and markets, or a world without material differences, how do we address the deep, embedded differences that relate to people's cultures and identities? Social justice cannot involve a distributive outcome alone, but also, it must address the multiple social structures that constrain individuals and social groups (Young 1990).

Nevertheless, distribution-based approaches have been central in the development of environmental justice discourses and the support of environmental justice struggles. The concept of environmental justice originally grew out of political activist movements in the United States, through grassroots and community-based struggles related to the unequal distribution of pollution and incidence of toxic waste affecting socially marginalized groups. This is a classic question of distribution (or environmental outcome), in terms of allocation of environmental "bads." A milestone in this movement was the publication in 1987 of the report *Toxic Wastes and Race*, which presented hard empirical data on the link between ethnic make-up of communities and the location of uncontrolled toxic waste sites in the United States. The report states conclusively (UCC 1987: p. xii): "Race proved to be the most significant among variables tested in association with the location of commercial hazardous waste facilities. This represented, a consistent national pattern." In the US, environmental justice activists were successful in linking questions of identity and recognition with concerns about the distribution of negative environmental impacts, through the framing of the environmental justice movement as a civic struggle.

Robert Bullard has written extensively on this form of injustice, grouped under the banner of "environmental racism." In *Confronting*

Environmental Racism (1993), he addresses the inequitable treatment of ethnic minorities across the US (indigenous peoples, African Americans, Latinos, Asians and Pacific Islanders), which is connected with deeper forms of oppression, discrimination and separation, such as clustering into areas like ghettos and reservations. Bullard explains this oppression as being a result of remnants of colonial patterns of exploitation and domination on the American continent and the complete disregard for indigenous traditions in managing their lands. At the same time, it is linked with long-term social neglect of ethnic minority communities, producing under-development and undignified living conditions that were at the core of the civil rights movement in the US. Further, it is an unintended consequence of NIMBY-ism (not in my back yard) pushing a variety of unwanted land use forms into poor, marginalized settlements – this includes structures from incinerators and waste dumps to industrial production sites. Bullard's work reveals the close interlinkages between social and environmental health and risks, as well as of politics, planning, poverty and power. Cole and Foster (2001) continued this work by juxtapositioning forces of the political economy that underpin this structural injustice with the transformative power of the environmental justice movement.

The environmental justice movement eventually expanded beyond racial dimensions to encompass socioeconomic considerations, revealing unequitable patterns of environmental conditions related to age and gender, indigenous peoples, immigrant populations, disabilities and other socially marginalized groups (Walker 2012). The use of the term also extended beyond the distribution of environmental "bads" to access to environmental "goods." The movement and the concept spread across diverse geographical regions, from local to global applications, and into a variety of policy domains, including housing, transportation, urban planning, health, energy, water and smart development (Sze and London 2008).

Distributional aspects remain central to understand environmental justice struggles. A follow-up study to the seminal *Toxic Wastes and Race* published in 2007 established that, 20 years on, race continues to be the number one factor predicting locations for toxic waste in the US (UCC 2007). Climate change, for example, is inherently an issue of historic and current inequitable access to and consumption of energy resources in the global North, and disproportionate impacts on communities in the global South. New perspectives are created on

this issue through debates on energy poverty, which can be defined in terms of the share of income that households spend on energy, which is a widespread problem among low-income cities across the world. Water and food poverty in cities are other challenges likely to increase in severity through impacts of climate change, which are directly linked with uneven access to environmental resources among the urban poor. However, environmental justice cannot be achieved by distributional means alone; nor is there a single panacea that can be applied to evaluate how such distributional justice has been applied. Calls for theoretical purity distract from the diverse means in which justice is advanced while, at the same time, each advancement is a precarious achievement that may need further justification, as time goes by, in relation to the changing conditions in which any achievement is made. The lack of categorical answers to justice questions calls for the pluralistic involvement of multiple points of view while at the same time bringing into focus the structural inequalities that shape those points of view and the possibility to express them in decision-making forums.

Justice through procedure Theories of distributive justice have long been criticized for overlooking the social and political processes through which structures of allocation are created, reinforced and permeated (e.g., Young 1990). By contrast, ideas of procedural justice emphasize equal opportunities of participation and access to political processes as key components of social justice. This approach assumes that as long as decision-making processes are dominated by groups privileged by the current system, justice can never be achieved. Allowing disadvantaged groups to create rules of distribution is one strategy to address the problem.

The logic of the difference in justice through outcome and process is captured in theories of procedural ("input") or substantive ("output") political legitimacy. Procedural legitimacy is produced through political processes that meet subjective criteria of inclusion, representation and participation – to be contrasted with substantive legitimacy which is based on outputs of a decision-making process ("output" legitimacy). Fritz Scharpf (1999) illustrates this difference. He explains that procedural legitimacy implies governing *by* the people, which suggests adherence to the rule of law, and inclusive, participatory and transparent decisions

that are based on the preferences and/or consensus of those governed. Substantive legitimacy instead represents governing *for* the people, realized by producing decisions that are effective, solve problems and create results. Scharpf applies this perspective to the European Union to explain a persisting "democratic deficit" caused by the lack of input legitimacy. Nevertheless, he argues, the union persists partly because of its ability to solve collective action problems ungovernable by individual nation states – resulting in output legitimacy. Deliberations on trade-offs between the two are perennial in environmental politics, with interventions in China currently constituting a subject of much debate. What is more politically legitimate: to generate results (let's say by constructing enormous dams for hydropower that provide both access to electricity for millions and displace fossil fuel use), or to make the decision-making process more democratic (by considering the displaced communities relocated by the dam project)? From a just sustainabilities perspective, we find this dichotomy obscures that both the political legitimacy of procedures and that of outcomes depend on each other.

An area of literature that has contributed significantly to ideas about just procedures is democratic theory. Political scientist Robert Dahl (1956, 1989), for example, introduced five widely employed criteria that evaluate whether a political system can be considered democratic: (1) adequate and equal opportunities of participation, (2) voting equality, (3) informed understanding of political issues, (4) public influence over political agendas and (5) inclusiveness. The democratic criteria reflect widely accepted norms of procedural justice, such as access to political campaigns, freedom of speech, rights to education and information and of association and assembly.

Theories of participation are as old as the idea of democracy itself (the origins of which are traced back to ancient Greece). In the late 20th century they enjoyed a revival through discussions on deliberative forms of democracy and, in urban environments, collaborative planning (Healey 1997). The revival of theories of communicative action is often attributed to Jürgen Habermas, who argued that the public sphere of modern society is in a severe state of decline. This was associated with the rise of mass consumerism and the expansion of the welfare state, which in combination contributed

to a shift from a participatory to a representative democracy. Other scholars, such as James Fishkin and John Dryzek, picked up this idea by arguing that societal deliberation is an essential component of democracy. The concept of deliberative democracy suggests that without informed discussion, citizen engagement in political issues and strategies to debate and reconcile conflict, the democratic process becomes void, merely symbolic. Fishkin and Laslett (2008) reflect on the real-life implications of transferring face-to-face deliberations to mass society. What form of institutions are needed (the authors suggest "deliberative polls" as one example)? Can deliberation be extended beyond the borders of the nation state to deal with cross-cutting issues such as environmental change? These reflections propose practical alternatives for bringing citizens back into the democratic process and strengthening procedural justice.

Departing from its origin in distributive concerns, environmental justice debates successively extended to procedural issues. As David Schlosberg has pointed out (2004), activists and social movements fighting for environmental justice have long since moved beyond the narrowly construed idea of justice as the distribution of burdens and benefits. He observes, for example, that environmental activists are demanding a seat at policy-making tables as part of their struggle for justice. Current governing global institutions – the IMF, the World Bank, WTO, UNFCCC – are criticized for their lack of channels for citizen participation, transparency, accountability and, as a result, democratic legitimacy. Likewise, he describes resistance against the industrial, global food system as a protest against the lack of local participation in decision making and production; a deficit of democratic control. All of these activities relate to procedural dimensions of justice.

Through the ascent of collaborative and communicative forms of environmental governance, which we discuss in Section 7.3, participatory elements have been integrated into processes of formulation and implementation of environmental objectives in a number of ways. Still, assumptions of how participation should be realized create systemic barriers to inclusive realization. Gibson-Wood and Wakefield's (2013) interrogation of approaches to the participation of Hispanic communities in environmental issues in Toronto documented numerous forms of exclusion: economic

marginalization and precarious immigration status acting as barriers to participation in civic life, assumptions about education and access to technology, narrowly constructed definitions of "the environment" that exclude a range of social issues, environmental agendas only accessible to high-income groups (such as organic food) and the "whiteness" of environmental activism more generally. Participatory processes help to sustain dialogue; yet, underlying social relations tend to reproduce the conditions of social injustice, particularly when dealing with complex environmental issues (Castán Broto 2013). Clearly, participation is not easy: there are many questions about elite capture of participatory processes; about the extent to which participatory processes may be manipulated for the convenience of development agencies and donors; and about whether conflict needs to be avoided (Bardhan 2002, Platteau and Gaspart 2003, Bardhan and Mookherjee 2006). Participatory planning needs to be suited to the specific conditions of planning and contextual challenges (Beaumont and Nicholls 2008). As noted by Geczi (2007), we must also exercise caution when promoting the introduction of participatory planning approaches in different political systems. In many political settings across the world, deliberative elements are fundamentally lacking and private interests exercise a disproportionately large influence over decision-making processes. There are thus inherent difficulties in advancing a consistent, pluralistic notion of environmental justice in a context permeated by structural inequalities.

Transcending a false dichotomy Patel (2009), writing on environmental policy in post-Apartheid South Africa, illustrates how Environmental Impact Assessment (EIA) procedures introduced to protect sustainable development have paved the way for elitist domination, co-optation by lobbyists and exclusion of local knowledge and values. The poor and disenfranchised become increasingly marginalized through these supposedly participatory processes. Patel concludes that the focus on procedure, in this context, paradoxically leads to increasingly unjust outcomes for those that are most deprived. Thus, we are back once again to the trade-off between procedure and outcome. The encounter between both ways of thinking tends to create two opposed interpretations of what is just in governance, as summarized in Table 7.1.

TABLE 7.1 Some trade-offs between procedure and outcome

Extremes of a false dichotomy		
	Outcome	Process
Justification of focus	Justice is advanced by creating a more equitable distribution of benefits and burdens.	Justice is advanced by creating access to decision-making processes.
If extreme leads to. . .	Disregards for minority/ individuals by favoring the majority; interventions that may damage existing institutions and trust; dominant interpretation of problems eliminate debate and alternative worldviews.	Rule- or participation-oriented process with no effectiveness.
Receiving groups disengage because of. . .	Lack of ownership of solutions, many perspectives are not heard.	Participation fatigue, perceived lack of results.
May be justified if. . .	Democratic institutions are already strong, and/or results are urgently needed.	There is a participation deficit that means existing processes will never address underlying structures of injustice

Source: authors' elaboration.

Working towards just sustainabilities requires breaking away from this dichotomy. Patel herself identifies one possible way to do this, by challenging the broader political context in which a decision-making process takes place. She argues for the need to address tensions "at a much deeper level of economic and institutional transformation" (Patel 2009: p. 108). Similarly, Morello-Frosch (2002) describes how the forces of the political economy produce specific patterns of environmental injustice. This relates to the dynamics of industrial development, labor markets and economic restructuring, which creates burdens for certain groups that may be difficult to target within regular political decision-making processes.

We can illustrate this argument by considering the case in Maputo described above, in which marginal communities have developed settlements in areas susceptible to flooding (Castán Broto, Macucule et al. 2015). Often, relocating communities may

seem like the only feasible alternative open to policymakers: if the land cannot be protected, then communities in high-risk areas will have to be relocated elsewhere. Of course, moving people who have social and economic networks in one part of the city to other areas where services and local markets operate differently will be actively opposed by those who are going to be relocated. A participatory process will reveal that relocation is unacceptable for many residents, who may perceive that relocating requires them to restart their lives. What would be more just, reducing the environmental risks that people are exposed to or giving them a say on what is to be done, with the likely outcome of keeping them in unsafe areas? We are faced with an impossible choice between what to do and how to do it. This impossible trade-off is, however, artificially constructed: there are other choices and there are other ways of thinking about the problem:

- There is a history and context of urban development that has led to the current pattern of settlement. In the case of Maputo, for example, the economic development of the center of the city makes peripheral areas susceptible to flooding desirable. Desirable areas may become gentrified, using risk as an excuse that is later addressed through technology, once poorer communities move out. Broader drivers of urban development are the first thing to be considered in this kind of situation.
- There is a context of socio-ecological relations, in which alternatives to flood management can be found beyond the neighborhood. This includes thinking, for example, about whole water basin management or mangrove restoration.
- There is a context of structural vulnerabilities whereby populations exposed to flooding risks are both less mobile and less able to respond to emergencies.

In Maputo, historical questions of justice intersect to produce this situation. The interaction of structural drivers, socio-ecological relations, structural vulnerabilities and pressures related to gentrification need to be addressed before considering the dichotomy between outcomes and process. This requires a process of planning for sustainability that starts from people's concerns and that uses those concerns to mobilize resources that benefit people. In many cases,

this requires acknowledging the specific socio-ecological context in which they are situated. Such acknowledgment requires social learning by experts and citizens, to understand how the representation of the future transforms today's perspectives.

7.3 The rise of cooperative environmental governance

Environmental governance happens against a backdrop of a changing social-political landscape. When we first studied environmental policy in the late 1990s, textbooks would distinguish between two approaches to environmental policy: regulatory or market mechanisms (Barde 1994). Both approaches were based upon the same description of environmental problems as an "externality" to normal economic activity – something that could not be regulated within the normal operation of the market. Regulatory "command-and-control" approaches presumed that the role of the state was to address those externalities through appropriate regulations and standards that would force companies to reduce their levels of pollution. Market approaches proposed financial mechanisms – taxes and incentives – as the key mechanism that would change polluters' perspectives. Both approaches posited the state and the market as the key actors intervening in climate change governance.

In the 1990s, a series of changes questioned well-established assumptions of the modern capitalist state and came to profoundly shift these perspectives. Globalization of the economy and the perceived inability of national governments to exercise control over increasingly interconnected international phenomena led to a series of changes that shook the grounds of state-led policy as it was advanced, at the time, by industrialized nations in North America, Europe and Australia. These changes included:

- the increasing role of super- and sub-national authorities in political processes (in particular in the European Union) (John 2000, Sweet and Sandholtz 1997);
- the paradigmatic position of neoliberalism, privatization and the growing responsibility of firms in the delivery of public goods, services and infrastructures (Rhodes 1996, Terry 1998);
- the emerging position of NGOs in political debates and the consolidation of a global civil society (Rosenau 1995);

- calls for greater integration of public participation in policy making and planning (e.g. Freeman 1996, Counsell 1999).

Political processes became characterized by complexity, fragmentation and the involvement of multiple actors. These shifts translated into the environmental domain where they contributed to a variety of responses which we can collectively group under the concept of cooperative environmental governance (Glasbergen 1998). Cooperative environmental governance perspectives emphasize management regimes as forms of "social regulation in which groups originating in different spheres of social life, and reflecting distinct perspectives and interests, participate in debate and negotiation to achieve a common understanding of a scientific problem, and then implement a collective plan for its resolution" (Meadowcroft 1999, p. 22). This implies processes that bring together a cross-section of actors with different interests congregated around a common problem (Glasbergen 1998). Thus, political justice (and effectiveness) can be achieved by allowing the public and a diverse set of stakeholders to participate in decision-making processes, state their preferences and tackle conflict through dialogue.

Cooperative governance approaches constitute a means to engage with the complex notion of justice that relates to both what is achieved and how. We focus particularly on three approaches. An institutional approach that emphasizes multi-institution collaborations (multi-level governance), an organizational approach that emphasizes partnership as a structured form of collaboration, and a people-oriented approach that emphasizes a tradition of participatory engagement as a means to empower communities to shape governments in ways that respond to their needs.

Multi-level governance Ideas of multi-level governance (MLG) developed initially in Europe to understand mechanisms of institutional coordination across different scales of governance, in contexts of fragmented and diffuse agency and control (Hooghe and Marks 2001). The approach represented novel theoretical interpretations of societal steering, which was associated with a conceptual shift in focus from "government" to "governance" (Pierre and Peters 2000). MLG became an alternative to government and its incapacity to solve complex problems, through which government actors shifted

to strategies of horizontal collaboration, dialogue and communicative problem solving.

MLG ideas quickly became influential in research on environmental politics and governance. One reason is the inherently multi-scalar and cross-border expressions of contemporary environmental challenges – biodiversity loss and ocean pollution refuse to be contained within national borders. The ultimate example is climate change. While caused by locally embedded structures and practices, greenhouse gas emissions mix in the atmosphere and create local impacts that are disproportionate to local emission activities. Actor collaboration in climate change strategies spans not only government levels but also geographical scales. City engagement in climate action involves strategies to access information and resources and engage in policy processes located beyond the territorial bounds of the city (Betsill and Bulkeley 2004, Bulkeley and Betsill 2005). This includes political struggles carried out in coalitions and institutions that stretch across nested scales and involve not only public actors but also other stakeholders (Bulkeley and Betsill 2005). Collaboration between government levels (Holgate 2007), government departments (Collier and Löfstedt 1997), and across international or supranational institutions (Monni and Raes 2008) are strategies to overcome institutional barriers and conflicts in climate agendas. These characteristics call for new divisions of responsibilities as well as for new forms of collaboration in both formulation and implementation of environmental objectives, which can be realized through MLG arrangements.

Although MLG theory emerged through observations of political realities in Europe, the concept readily spread throughout geographical and political contexts. The concept has been applied to climate governance dynamics in North America (Betsill and Rabe 2009, Rabe 2007), South America (Romero-Lankao, Hardoy et al. 2015), Asia (Francesch-Huidobro 2016, Schreurs 2010) and Africa (Leck and Simon 2013). The approach has gained normative currency through its association with governance strategies that represent fluid and inclusive alternatives (Castán Broto 2017). MLG processes grounded in collaborative policy strategies can promote institutional arrangements that shift the boundaries between society and publics vis-à-vis knowledge production and

science (Corfee-Morlot, Cochran et al. 2011, Corburn 2009). Climate initiatives realized through hybrid actor constellations may contribute to experimentation with new ideas and solutions, resulting in social and technical innovation (Bulkeley, Castán Broto et al. 2012). Consolidation of a multiplicity of interests and innovative forms of engagement with publics and communities can help create legitimate policy objectives (Cashmore and Wejs 2014). Engagement with communities may also disrupt static notions of partnerships (Castán Broto, Macucule et al. 2015, Chu, Anguelovski et al. 2016) and unearth alternative logics of low carbon action (Aiken 2016). It is therefore seen as central not only to broadening participation, but also to integrating dimensions of justice into climate change planning processes (Shi, Chu et al. 2016).

In the last years, and particularly since the agreement of Paris, we have seen a shift in notions of cooperative environmental governance. From nations to local governments, to businesses and citizens, there is an increasing realization that interventions happen increasingly in isolation, amid isolated aspirations and conditions. People try out things that work in different contexts, sometimes inspired by similar initiatives elsewhere, sometimes moved by a problem in their community. This trend towards experimentation in environmental governance (Bulkeley, Castán Broto et al. 2014, Turnheim, Kivimaa et al. 2018) has been accompanied by a landscape of fragmentation of action. The response has been one oriented towards finding opportunities for coordination.

As voluntary approaches have come to dominate environmental policy – especially since their reaffirmation in the 2015 Paris Agreement for climate action – there has been a growing emphasis on the need for coordination of separated action, and the important role played by multiple intermediaries in facilitating such approaches. In 2013, while much of the focus in climate action research was directed towards non-state actors and multilevel interactions in networks, Hale and Roger (2014) instead re-focused on the traditional players on the global governance stage. Their research suggested that states and intergovernmental organizations initiate and guide much of the ongoing climate action in networks, a dynamic which they named orchestration. In this way, distinctly bottom-up dynamics blends with authoritative steering, at once allowing for pluri-centricity and multiple

forms of agency, and at the same time addressing the difficult issues of fragmentation associated with transnational modes of governance. Thus, orchestration is seen as a pathway to greater effectiveness in global governance. Yet, it is also associated with democratic shortcomings. Bäckstrand and Kuyper (2017) argue that orchestrated efforts led by the UNFCCC displayed major limitations in values associated with democratic performance, in particular in terms of accountability, but also to some extent from the perspectives of participation, deliberation and transparency. This brings us back to where the chapter started – an apparent trade-off between enhanced effectiveness and shortcomings in procedural legitimacy in complex governance processes.

Coordination in sustainability processes, especially in relation to urban services and infrastructure, can also be provided by intermediaries. Guy and colleagues (Guy, Marvin et al. 2011) describe how transitions to new socio-technical systems in cities – reconfigurations that involve new forms of technology and material infrastructure – rely on the facilitation of actors operating between regulators, users and utilities. This includes a heterogeneous set of actors, such as consultancy firms and organizations working with performance labeling, which play a key role in the governance of socio-technical change. The support functions provided by intermediaries are multifold, including facilitation of learning, diffusion of information and knowledge exchange, resource provision, and enhancing accountability and transparency (Intarakumnerd and Chaoroenporn 2013, Iturrioz, Aragón et al. 2015, Warbroek, Hoppe et al. 2018). However, we find that, in practice, MLG perspectives are most often directed towards the harmonization of existing institutions than towards an in-depth challenge to the structural conditions that shape environmental inequalities. MLG appears to be a contributing but in no way sufficient condition to deliver justice in urban environments.

Partnerships Partnerships represent a specific form of multi-level governance arrangement. They are defended as an answer to the important question of how to create forms of institutionalization, solid, long-term interactions, which enable the delivery of environmental action. The notion of partnership is most often deployed in relation to the public–private partnership model, as a contractual

mechanism whereby the private sector can come to the rescue of a public sector portrayed as lacking the capacity to deliver public services. This form of partnership often advances neoliberal logics, making the investment landscape attractive to private business, without delivering a parallel benefit for the public good (Siemiatycki 2011). Such partnerships are also used to advance unsustainable growth models and land appropriation, for example through legitimization of neo-extractivist policies in the Amazon (Baletti 2014) or in development projects that impact the lives of the urban poor in Indian cities (Sengupta 2013). Partnerships, thus, have been approached with caution both in terms of their potential appropriation and the extent to which disadvantaged groups can participate meaningfully in the process of constitution and implementation (O'Malley 2004).

An alternative approach, cross-sector partnerships, refers to the diverse and flexible association models that emerge to facilitate the urban governance of the environment (Castán Broto and Bulkeley 2013). A collaborative partnership entails not just agreeing to deliver common action in relation to each partner's capacities, but rather the fulfillment of an agreed common goal, the sharing of both responsibilities and risks and the transfer of skills and know-how between partners. Brinkerhoff defines partnership "as a dynamic relationship among diverse actors, based on mutually agreed objectives, pursued through a shared understanding of the most rational division of labor based on the comparative advantages of each partner" (Brinkerhoff 2002: p. 21). Forsyth (2005: p. 429) redefines partnerships "as sites where norms of environmental concern and political accountability are formulated and replicated." In this context, deliberative public–private partnerships are directed towards maximizing opportunities for public debate among a wide range of actors within the spheres of government, market and civil society, with an explicit focus on inclusiveness and establishing the relevance of the partnership goals to local needs.

Understood in this way, partnerships offer the opportunity to link the actions of diverse actors operating at different scales and may be flexible enough to deal with uncertain futures and changing development demands (Okereke, Bulkeley et al. 2009). Partnerships can constitute a fluid mechanism to foster multi-scalar forms of collaboration in cities that climate change requires (Leck

and Simon 2013). Savings groups and mechanisms for land sharing are all manifestations of examples of successful informal and temporary partnerships that may contribute to the general improvement of urban environments. The deployment of partnerships, however, depends on the conditions of creation of those partnerships and the different narratives that shape how partnerships are conceived of and implemented (Castán Broto, Boyd et al. 2015). Partnerships are open to appropriation. For example, the fossil fuel industry has long dominated the metropolitan area of Concepción (Chile), generating a conflict-shaped landscape. Partnerships with some communities in one part of the city are perceived as being detrimental to the whole community as they do not address the root causes of environmental degradation (Castán Broto and Sanzana Calvet forthcoming).

Participation and coproduction In every participatory initiative, there are a lot of implicit assumptions about what participation is and how it can be advanced. The question that interests us here is "why participation?" We distinguish between those who argue that participation is a necessary condition for more efficient decision making and better outcomes, those who see participation as an inescapable fact of democracies, and those who see participation as an empowering mechanism (see also Fiorino 1990). For example, Table 7.2 presents a series of different criteria to evaluate participatory planning actions. Following the table, we can engage with different dimensions of participation. In the context of the need for urgent action, we can argue that participation leads to better outcomes, as it allows for an understanding of the precise needs and possibilities for action in context. Participation must be justified as a means to facilitate the empowerment and representation of the views of deprived communities.

During the last 20 years there have been examples in which an emphasis on participation was crucial to deliver both sustainability and justice. From pioneering experiences of waste management and pollution control in cities such as Porto Alegre (Menegat 2002) to the incorporation of participatory processes in strategic planning (Steinberg 2005), participatory planning is a key tool to deliver just sustainabilities. Participatory approaches have demonstrated that local communities are a reliable source of

TABLE 7.2 Criteria to evaluate participatory planning

Dimension	Criteria	Means of evaluation
Effectiveness dimension	Accuracy in the identification of local needs and requirements	To what extent the process addresses the needs of deprived urban communities
	Understanding of means of intervention	To what extent the processes takes advantage of existing resources
	Context exploration and understanding	How sensitive the process is to the existing context
Communicative dimension	Inclusion	Who actually participates and what arenas are open to all
	Deliberation	Is there a possibility of deliberation or are there systematic biases that influence the outcome
	Democratic participation	Quality of decision making and participant freedom
Empowerment dimension	Primacy of participatory forums	How does the process relate to other ways to access available resources from government, private actors or international organizations
	Scope and importance of participation issues within local planning processes	What resources are allocated for participation and how that relates to social justice
	Degree of participatory power	How much does the participatory process influence government actions and how much authority have bureaucrats or politicians to overrule participatory decisions
	Self-regulating and constitutional aspects	To what extent participants can determine the rules and manner of their participation

Source: inspired by Baiocchi and Ganuza (2014).

information about their priorities; that participation helps understand the needs of, especially, the urban poor; that participation increases local ownership; and that overall, it may improve local processes of governing and accountability (Labonne and Chase 2009). Participatory budgeting, in particular, appears as a widely applicable strategy to ensure a degree of inclusion in municipal budgeting (Box 7.1).

Box 7.1 Participatory budgeting as an environmental governance strategy

Participatory budgeting allows for citizens being actively involved in deciding how to use resources. Habitat II already promoted participatory budgeting as a key innovation in urban finance and governance, but the last 20 years of participatory budgeting experiences speak to its potential (Cabannes 2014). In relation to urban environments, participatory budgeting fosters a collective process of dialogue and negotiations that emphasizes how multiple problems are connected, from education to sewage and pollution (Baiocchi 2005). Participatory budgeting has been particularly effective to deliver short-term interventions – from paving streets to cleaning drainage – that can immediately improve the neighborhood environmental quality, but there is less evidence of participatory budgeting being used to advance long-term environmental objectives (Wampler 2007). In Brazil, where participatory budgeting has been implemented in local municipalities for more than 20 years there is substantial evidence that public participation leads to socially conscious budgets with an increased investment in programs for education and health, although critics highlight that there is not clear evidence of whether these investments translate directly into measurable outcomes in terms of improving quality of life and well-being (Boulding and Wampler 2010). From a just sustainabilities perspective, the tangible effects of participatory budgeting need to be balanced in relation to its benefits to the democratization of the decision-making process, empowering citizens and improving transparency in local municipal governance (see discussion in Baiocchi and Ganuza 2014). One feature of participatory budgeting is that it has traveled widely across cities in different regions but not as the repetition of a best practice example, but as the reinterpretation and re-imagination of participatory budgeting experiences in different contexts. The extent to which participatory budgeting has been appropriated as an instrumental tool to gain legitimacy rather than, as originally conceived, as a transformative tool to enable collective dialogues and the emancipation of citizens needs to be evaluated in context.

At the same time there has been a consistent critique of participation. Perhaps the most prominent criticism in urban environments has been the way in which participatory processes are deliberately used to side-track processes of negotiation which recognize the structural inequalities in which participatory processes are embedded (Metzger 2017). Participation can add a veneer of legitimacy to decisions that are entirely unacceptable. Participatory processes are open to the same political struggles as any other decision-making process, and they can be appropriated in ways that reproduce forms of injustice. At the same time, participatory processes should not be held to impossible standards of political or social purity. Participation is a key tool that, alongside activist strategies, enables accessing decision-making processes.

More recently we have seen the substitution of the ideas of participatory management of natural resources by ideas of "coproduction" which have been particularly influential in urban environments. The difference from traditional strategies is that coproduction is organized around a common goal. Ideas of service coproduction emerged in the US, particularly in connection with Ostrom's Workshop of Political Science and Policy Analysis at the University of Bloomington. The original idea was that involving "service customers" would make the provision of services more efficient (Percy 1984, Warren, Rosentraub et al. 1984, Weschler and Mushkatel 1987). Elinor Ostrom's interest in its application in development, on the back of her institutional theory for the management of natural resources, helped to cement coproduction as a means to democratize environmental governance and enact polycentric forms of governance (Ostrom 1996).

In a historical review of the use of the concept, Miller and Wyborn (2018) explore the multiple meanings of coproduction. In science and technology studies, the concept ties into a long history of thought on the coproduction of knowledge. Here, the term reflects the insight that there is science embedded in society and that scientific facts always in some way are socially and politically produced. These insights became reinforced in theories about "sustainability science," which explicitly call for interaction between scholars and stakeholders in the definition of problems, search for evidence, and evaluation. One application of the term to governance lies in involving multiple producers in creating policy and knowledge (see also Chapters 2 and 6).

Another application relates to the coproduction of public services, through governance arrangements that recognize complexity and interaction of multiple actors. Ideas of coproduction have been mobilized in the delivery of multiple services from health to waste management (Kim 2004, Marschall 2004, Bifulco and Ladd 2006, Corburn, Curl et al. 2014). A particularly influential strand has looked into how coproduction of sanitation and waste services can directly benefit deprived urban communities (McGranahan 2015, McGranahan and Mitlin 2016). Coproduction can also be used as a strategy for grassroots movements to gain political influence. Mitlin (2008) draws on the examples of the Orangi Pilot Project in Karachi (Pakistan) and the Shack Dwellers Federation of Namibia to demonstrate how coproduction models open access for citizen involvement in areas previously unavailable to them and create channels of communication and negotiation with decision-makers, which in turn can be empowering for both the grassroots organizations and the communities. However, like participation, coproduction should not be thought of as a panacea. Coproduction is open to the same criticisms we have subjected participation. Castán Broto and Neves Alves (2018) argue for a careful consideration of the different dimensions of coproduction through an intersectionality lens – asking key questions from whose views are included to what values have shaped the process – as a means of evaluation of the coproduction process.

Coproduction is a rising discourse in explaining governance of the environment in urban contexts, where there is an explicit goal to include deprived urban communities (Sudhipongpracha and Wongpredee 2016, Vedeld, Coly et al. 2016, Chowdhury, Jahan et al. 2017, Moretto and Ranzato 2017, Nastiti, Meijerink et al. 2017). However, recent assessments have also raised questions. In an examination of a coproduction initiative to deliver water in an urban settlement in Lilongwe (Malawi), Adams and Boateng (2018) found that while the project improved access to water, certain structural barriers remained that could only be addressed by the government. In seeking to use coproduction as an empowering governance model, it cannot be used as an excuse for lacking state interventions, or to transfer responsibility to those that lack access to urban services.

7.4 Justice as recognition

We want to reactivate a commitment to cooperative environmental governance as an inescapable conclusion of the need to achieve just sustainabilities. But participation and inclusion in decision making are not sufficient to enable the transformative intent of sustainability action because of imbalances in power, capabilities and contexts. The final dimension of justice consists of recognition alongside an appreciation of the intersubjective relations that shape any possibility of self-realization.

In the 1990s, Iris Marion Young disrupted justice debates with the publication of *Justice and the Politics of Difference*. Young, frustrated with the obsession with outcomes in theories of justice, argued that distributive perspectives are blind to patterns of oppression and domination. Attention needs to be paid to the institutional context of decision-making processes, the social relations that mediate these procedures, and structural dimensions of power. In Young's terms (1990: p. 34), justice "coincides with the political." Realizing justice requires *recognition* of how groups are excluded from self-realization and self-determination through existing social relations, institutions and perceptions.

Fraser (1996) described how concerns about redistribution of socioeconomic resources occurred alongside justice movements based on identity politics. A new social justice paradigm was being fixed in battles for recognition of ethnic, racial and gender differences. Fraser perceived this new paradigm as different from preceding redistributive claims by its emphasis on cultural marginalization, which includes cultural domination, non-recognition and disrespect. She also emphasized that injustice emerges from framings that preclude alternatives by following divergent ontological assumptions. These problems need to be addressed through processes of revaluing these groups and identities. Fraser (Fraser and Honneth 2003, Fraser 2009) advocates a multidimensional concept of justice that promotes redistribution alongside the politics of emotional, personal and political recognition.

Since their inception, environmental justice movements have represented a struggle for recognition. As Schlosberg (2004) reflects, many of the early environmental justice movements linked to distributive injustice were inextricably also quests for recognition.

For example, racialized communities were not dealing with the disproportionate incidence of toxic waste for no reason – this injustice occurred in the first place because they were a group in society that lacked social and political recognition. Similarly, the destruction of land inhabited by indigenous communities can be seen as a question of access to environmental resources or inclusion in decision making, but it is indivisible from questions of recognition.

For example, in 2012, Ecuadorian President Rafael Correa pleaded to the international community to provide funds to prevent drilling for oil in Yasuní National Park. His proposal invited wealthy nations to provide Ecuador with $3.6 billion to compensate half of the foregone profits of planned fossil fuel extraction. President Correa described these donations as "co-responsibility in the face of climate change"; it was in the interest of the Earth as a whole to protect precious ecosystems in one of the most biodiverse locations on the planet.[1] The world failed Ecuador. Out of the requested $3.6 billion, the country received a mere $13 million in international donations. In response, President Correa announced the decision to begin preparations for drilling. From a global perspective, the incident cast doubt on the fundamental principles of common but differentiated responsibilities (an instrument adopted by the UN Framework Convention on Climate Change in Rio de Janeiro in 1992 to secure justice in global emissions reduction efforts). From a local perspective, the exploitation of Yasuní casts light on deeper questions of political power related to rights to the environment. Yasuní is home to numerous indigenous peoples, whose way of life, sustenance, culture and identity, and ancestral land are threatened in the process of oil extraction. Representatives of these peoples have risen in protest against the destruction of their homes – a process for which they have not provided consent. The drilling for oil in indigenous territories began in 2016 in spite of protests and continues today. Oil drilling is conducted in the vicinity of the lands of two indigenous peoples living in voluntary isolation from modern society. Their voices will never be heard, and in consideration of significant profit that will be generated through drilling, their perspective on the value of the land is completely overlooked. Unfortunately, the complete lack of recognition for the needs, aspirations, values and worldviews of indigenous people is not an anomaly of Ecuador. It has been replicated in political

processes across the world, through exploitation and marginalization in countries as diverse as the United States, Canada, Nigeria, Sweden and China.

As discussed in Chapter 3, lack of recognition is a widespread concern among feminist thinkers. Lack of recognition is a widespread concern among feminist thinkers. In the feminist literature, lack of recognition is directly related to practices of othering. As formulated by Simone de Beauvoir (1997: 16), "[s]he determines and differentiates herself in relation to man, and he does not in relation to her; she is the inessential in front of the essential. He is the Subject; he is the Absolute. She is the Other". She aims to tackle the perpetual reproduction of this divide for women to find pathways towards liberation and full membership in society. Eco-feminists extend this question of othering to encompass nature, as they view this dichotomic relationship of domination to be replicated by humans in their relationship with non-human species (see also Chapter 3). As explained by Plumwood (2002: 4):

> The category of nature is a field of multiple exclusion and control, not only of non-humans, but of various groups of humans and aspects of human life which are cast as nature. Thus racism, colonialism and sexism have drawn their conceptual strength from casting sexual, racial and ethnic difference as closer to the animal and the body construed as a sphere of inferiority.

Plumwood argues that challenging these systems of exclusion and control will require deep rethinking and reconceptualization of existing paradigms, for example by endowing nature with agency and intentionality. Another strategy is offered by Spretnak (1996), who advocates for a philosophy of radical non-duality to simultaneously challenge dichotomies and the Western modern-rationalist tradition of thought. The principle of radical non-duality recognizes the links that connect all beings, for example as expressed through perceptions of spiritual links with nature or in cosmologies that view Earth as a holistic being. While drawing on diverse political theories and advocating different programs of action, ecofeminist theory generally calls for a revaluation of the inferior other, which involves recognition of downplayed identities and worldviews.

Ecofeminist theory calls for a revaluation of the inferior other, which involves recognition of downplayed identities and worldviews.

TABLE 7.3 Justice through affirmative or transformative action

	Affirmative action	Transformative action
Redistribution	Liberal welfare state	Socialism
Recognition	Mainstream multiculturalism	Deconstruction
Representation	Token participation	Coproduction

Source: adapted from Fraser (1996) and Fraser and Honneth (2003).

The very process of othering is under question, as life becomes examined against the dominant norms. Beyond critical perspectives on gender and race, this calls for a break from views of nature and non-human species as inferior, subordinated and open to instrumental use. Similarly, Schlosberg (2007) argues for recognition of nature in terms of ecological justice, which implies acknowledging the rights of animals and other species to exist and to flourish.

Returning to Nancy Fraser's perspective on recognition, we can move from the question of justice into the realm of social transformation. Fraser proposes that achieving urban equality requires looking at both process and outcomes. Simultaneously, she looks into the difference between affirmative and transformative action, where "strategies of affirmation" seek to correct inequitable outcomes without disturbing the underlying political framework, and "strategies of transformation" seek to correct inequitable outcomes by restructuring the underlying generative framework. Regarding this distinction, Fraser (1996: pp. 45–46) states:

> Affirmative redistribution can promote, rather than undermine, the differentiation of social groups . . . [transformative redistribution] seeks to redress end-state injustices precisely by altering the underlying framework that generates them. By restructuring the relations of production, transformative redistribution would change the social division of labor, reducing social inequality without creating stigmatized classes of vulnerable people perceived as beneficiaries of special largess.

Justice can be sought through redistribution, recognition or representation via strategies of either affirmative or transformative action (Table 7.3). Accordingly, redistribution may be sought through affirmative action, for example through liberal welfare policies, or

through transformative action, for example using strategies that seek radical redistribution. This framework helps transcending the dichotomy of process versus outcomes, and helps situate cooperative approaches within a broader political context in which transformative change towards environmental justice becomes possible.

7.5 From incremental to transformative paradigms of sustainability action

In our sample, the criterion of equity and justice in recognition, process, participation and outcome was much less prevalent in sustainability initiatives compared with addressing well-being and meeting the needs of current and future generations. The criterion was directly addressed in only 18 percent of the initiatives and indirectly in 24 percent.

Out of the 18 percent of initiatives that met this criterion, some strategies were more common than others. Discourses of participation permeate many local sustainability strategies, while initiatives that promote recognition occur to some extent, and redistributive efforts are rare. However, in practice, these dimensions often overlap, especially approaches to enhance inclusion and recognition, which may be indistinguishable from each other (as noted by Schlosberg 2004), but also in terms of participatory exercises that also address access to resources.

Strategies to realize justice in outcomes Initiatives that aim to improve well-being and quality of life are often the interventions that most directly engage with improvising access to resources (provision of housing, sanitation, water, energy, mobility), but these are typically not implemented under schemes of explicit redistribution. However, using public funding to provide social goods to previously unserved groups can be seen as strategies of re-allocation. For example, Bayamo LA21 in Cuba used spatial planning and infrastructure provision to promote non-motorized modes of transport (such as the bike-taxi) that facilitate the mobility of previously marginalized urban poor. At the same time, this kind of scheme rarely involves radical rearrangement of ownership structures or environmental goods in the urban environment.

Other examples that fall under the remit of redistribution include social housing initiatives, whereby public funds facilitate access to accommodation for low-income households. In Eastern Europe, for

example, there is a legacy of social housing as a policy tool. Many municipal governments have launched far-reaching retrofit campaigns to address the issue of the refurbishment of existing housing stock, thereby combining social housing provision with environmental interventions. The Municipality of Ljubljana in Slovenia, for example, achieved considerable savings in energy consumption by restoring old socialist blocks with energy-efficient ceilings, new windows and doors and by recuperating the original ventilation technology that employed thermal shutters (Castán Broto 2012).

Some initiatives have attempted redistribution in access to economic resources in lending programs. For example, the green mortgage program in Mexico, managed by the Institute for the National Workers' Housing Fund, is a housing finance scheme that provides funding for low-income households to invest in eco-technologies. The program has enabled over 900,000 recipients to improve their homes through energy-saving appliances, thermal insulation, solar and gas heaters, water saving devices and similar upgrades. Users benefit from reduced resource consumption, which translates into lower costs and improved household economies (World Habitat Awards 2012). Nevertheless, questions have been raised against the green mortgage, which is seen as an instrument to facilitate the financialization of the lives of the urban poor in Mexico.

With schemes aiming for the (re-)allocation of benefits, we reconnect with the issue of evaluation of outcomes discussed at the beginning of this chapter. A major problem in assessing the distributive impact of urban interventions is that their effect is often not monitored and measured. As explained in Chapter 3, decisions on whether and what to measure are themselves political: deciding what to know is in itself one of the decisions that pertain to achieving procedural justice. As a result, it is often difficult to determine whether ambitious urban schemes to provide housing or transport, in fact, make a real difference in the lives of urban dwellers.

Strategies to realize justice in procedure and participation Many interventions in our database addressed the principles of inclusion and direct participation. This covers a wide range of strategies, from inclusion in municipal planning, partnerships, community-led management and coproduction approaches.

Many cities have adopted participatory procedures or institutions as part of their environmental planning systems. For example, the Citizens' Committee for a Green Seoul aims to build a sustainable city through citizen participation, programs for public participation in protecting biodiversity and natural habitats have been introduced in the city of Bonn, and Belo Horizonte's Municipal Sanitation Plan relied on participatory planning to provide urban sanitation. A two-decade initiative for the democratization of municipal management for equitable and sustainable development in Cotacachi, Ecuador, used planning mechanisms to facilitate the equitable distribution of economic and material resources.

One early example of a partnership-based financing model was the Luanda Sul (Angola) self-financed urban infrastructure program, launched in 1994 as a synergetic partnership between cash-strapped municipal agencies, the private sector and communities. The private sector has provided large amounts of funding by entering into contracts with the government, which has generated capital for social investments, in turn jump-starting micro-economies and a real estate market. Land has been made available for investment, and the project has contributed to investment into 70 km of water pipes, rain and drainage systems, power lines, roads and housing.

Community-led planning initiatives are numerous. For instance, the Naga City Participatory Planning Initiative in the Philippines involved local community leaders and stakeholders in local planning processes. The aim was to actively involve local community leaders and stakeholders to become leaders in the undertaking of plans with a dual objective: issues related to health and the environment. The Building in Partnership – Participatory Urban Planning project in Kitale, Kenya, helped create a broad-based participatory institutional framework for urban planning in Kitale, giving the urban poor a voice in decision-making processes. The dialogue between local communities and Kitale Municipal Council which the project initiated is continuing, especially through the Strategic Ward Development Plan process, which emphasizes the active participation of residents in the planning process to ensure that their needs are addressed.

There were also examples of initiatives to upgrade infrastructure and services through co-management and knowledge coproduction, such as the upgrading of the Audi União informal settlement in Curitiba. Another example was seen in Aandur Municipality, India,

which used a public–private sewerage scheme that was financed in part through contributions from the local population. Over 10,000 connection seekers paid for the system, which was eventually extended to cover latrines on demand from inhabitants in informal areas. Similarly, Ahmedabad Municipality worked with inhabitants in informal settlements to upgrade their infrastructure, based on micro-financing and voluntary cost contributions, leading to the upgrading of housing for almost 25,000 people.

Latin America and the Caribbean was the region with the largest number of initiatives that directly address equity and justice in procedure and participation. Alongside participatory decision-making processes launched by municipal governments in this region, NGOs and communities participate actively in the political life of the region. The region with the second largest number of initiatives which address equity and justice was Sub-Saharan Africa, where many local and international NGOs have launched projects that put justice at their center. Relatedly, civil society organizations (especially local NGOs) are the type of organization that most often addresses both well-being and procedural justice in their sustainability initiatives.

Strategies to realize recognition Strategies to realize recognition in our sample most frequently emerged in initiatives that challenge perceptions of previously excluded populations, and create a political agency for these groups, for example by opening up formal channels of communication. We came across some local initiatives aimed specifically at building recognition for overlooked social groups. In particular, these initiatives often targeted informal settlements or informal sectors of the economy.

For example, in Windhoek, Namibia, the Shack Dweller Federation, formed in 1992, is a network of community-led savings groups working to secure land, shelter and infrastructure services. The national government of Namibia has accepted their participatory community approach and is working with SDFN by providing both funding and access to loans in most of the urban areas of Namibia, now over 20,000 low-income urban households. The approach has also been applied in urban areas in Zimbabwe by savings groups and by Malawian authorities. A similar approach was adopted by Zambia Homeless and Poor People's Federation in Lusaka. The non-profit

Asiye eTafuleni in Warwick Junction in Durban, South Africa, is working with local government to provide recognition and protection for informal vendors (Maasen and Galvin 2018).

We also identified waste collection initiatives and housing provision projects that aimed specifically to build an improved social image. An illustrative case is the waste-pickers collective ReviraVolta Expocatadores in Sao Paulo, Brazil. In this collective, workers participate in daily labor and have access to voluntary crafts activities that use collected waste as raw material, while providing cultural programs and substance abuse rehabilitation. Those who collaborate and show interest in continuing in the program continue to earn responsibilities and possible placements in related programs and companies. Forming the cooperative has changed the recyclers' lives, self-esteem and understanding, as well as their relationship with local authorities and society. Similarly, the SWaCH Pune Seva Sahakari Sanstha in Pune, India, is a worker-owned waste-pickers cooperative that both enhances waste collection effectiveness and integrates waste-pickers into the formal economy (Maasen and Galvin 2018). An example of an initiative that addressed the exclusion of specific ethnic groups included the Dweller-driven Upgrading of Roma Settlements Model in Belgrade, Serbia, which worked to provide improved living conditions for Roma People and help the Roma community. We also encountered numerous urban agriculture projects that provide food or livelihoods for migrant populations living under precarious living conditions, and depend on the initial recognition of their status as citizens of that city or settlement.

There were also programs that worked with gender injustice and improving opportunities for women. For example, the Gender and Citizenship in the Integrated Program for Social Inclusion of Santo Andre, Brazil, sought to develop a sustainable strategy for social inclusion in urban territories marked by processes of exclusion, thereby expanding the possibilities for families to achieve autonomy. The cooperative UFAMA al SUR in Montevideo, Uruguay, provides affordable housing for low-income women-headed households through a mutual-help cooperative approach. The organization aims to contribute towards the improvement of living conditions of the Afro-Uruguayan population in Montevideo and rehabilitate an area that is meaningful to this community. Another example is the NGO Trees for Cities in Addis Ababa (Ethiopia),

which teaches vulnerable populations, especially women, to plant and maintain fruit trees and has created livelihood opportunities for almost 15,000 people and contributed to urban greening and the reduction of food insecurity.

7.6 Conclusions

Social realities nearly always display deep inequalities in terms of distribution of resources, ability to exercise agency and authority, and patterns of participation and recognition. Our analysis reveals systemic barriers that prevent the incorporation of justice and equity principles into sustainability efforts and contributes to this distortion.

- First, managerial and technocratic planning approaches continue to dominate urban planning and development (Watson 2009). This is linked with a large number of initiatives that perceive the environment in a narrow sense and exclude social considerations completely. Relatedly, strategies of affirmation have dominated debates, for example, by emphasizing the association of environmental protection and urban health; recognizing that flourishing needs are not the same as those for mere survival; incorporating participatory methods in environmental governance; and redefining methodologies to acknowledge the resource basis of the economy. These are strategies that seek to address injustices, but they do not necessarily challenge the fundamental structures of social organization and knowledge production that produce injustices in the first place.
- Second, while participation is common, it may also be used to legitimize planned interventions and provide a limited opportunity for publics to fundamentally shape plans and projects. In our empirical data, we detect a divide in approach between the global North and the global South, where the former presents broad municipal sustainability plans with some form of public consultation process representing participation, and the latter reflects the ongoing efforts of development organizations and NGOs to realize community-led management approaches.
- Third, there is a continued lack of recognition of a large number of social groups. Where initiatives to build recognition exists, they are scattered and small-scale, and hardly conducted at a scale in which the initiatives challenge underlying systematic injustice or

structures of power. It is particularly difficult to identify recognition strategies that address urban history and historical disadvantages. Moreover, few initiatives link recognition explicitly to the need to build capabilities for effective participation.

- Fourth, the political difficulty of realizing redistribution appears to be significant, as such interventions are overtly missing from our sample. This may be an expression of dominant neoliberal logics and comparatively downplayed communitarian or socialist rationalities worldwide, which limits political momentum to realize radical re-allocation.

In the light of these barriers, how can justice and equity be better incorporated into sustainability initiatives? We reach two conclusions. The first is that participatory planning approaches have demonstrated success across geographic locations and organizational contexts, but these may not be sufficient to engage with the need to make visible the forms of conflict and tension that is needed to address underlying injustices. Geczi (2007: p. 387) observes: "before deliberative democracy can deliver the promise of greater inclusion and justice under 'unjust conditions,' it must conceive of structural differentiation as a political resource, rather than as something that must be transcended in the quest for a 'common good'." Approaches to participation need, according to this perspective, to integrate conflict as a necessary component of inclusion and seek explicitly to address exclusions based on race, gender, migratory status or other sociocultural dimensions.

Our second conclusion reinforces the need to reinstate sustainability as a political project. Sustainability is "a vocabulary for political opportunity," powerful enough to mobilize activists and communities for a better environment and better quality of life (Agyeman, Bullard et al. 2003). The principle of just sustainabilities reasserts issues of equity into sustainability objectives and represents a paradigm for transformative change that challenges dominant systems of authority and patterns of social injustice (Agyeman 2005, Agyeman 2013, Patterson, Thaler et al. 2018). Agyeman (2005: p. 6) observes that if "sustainability is to become a process with the power to transform . . . justice and equity issues need to be incorporated into its very core." Sustainability only can be addressed by engaging with the structural causes of environmental degradation, including fundamental shifts in power

relations (McLaren and Agyeman 2015). However, just sustainabilities is not about power alone, it is also about the role of multiple ecologies in supporting urban life, a question explored in the next chapter.

Note

1 https://www.theguardian.com/world/2013/aug/16/ecuador-abandons-yasuni-amazon-drilling.

8 | ECOSYSTEM LIMITS

8.1 Rethinking abundance

A bright Saturday in early December 1985, three children run across the square of a little town in the Pyrenees, in northern Spain. They race because they all want to be the lucky child who will hold the tail of the pig in the town square. Even though the pig belongs to one of the houses, the whole town is there helping to hold the pig while it is killed. A complex system of favors will enable compensation for those who are helping, whether this is by supporting them when they kill their own pig or sharing some of the products of that day's event. The square smells foul because the pig has been bathed in boiling water to remove its hair. Men hold the pig's legs, and the first child to reach the square holds the tail. One of the men cuts the pig's neck, while one of the women makes sure all the blood is collected in large pails. When the pig stops kicking, everyone waits until all the blood is drained. Then the pig is opened with a single, clean cut along the middle of the belly and hung in the first floor of the house's patio. From now on, everybody has to wait until the vet returns the result to indicate that the meat of the pig is safe for eating.

When positive results are in, labor starts. Everybody has a clear task, to make sure every part of that pig will be used. The most urgent task is to process the blood. Half of it will be mixed with rice and spices to make blood sausages and the other half will be mixed with flour and aniseed to make blood cakes, a children's favorite. All blood sausages and cakes will be boiled in a giant cauldron to preserve them. Over the following week, the different parts of the pig will be cut to progressively advance through different processes of meat conservation. Pork belly and pork legs will be salted, better cuts of meat will be prepared to eat them raw, and lower quality meat will be mixed with spices and turned into different types of sausages and chorizo, bagged in the entrails of the pig (the big intestine is used in blood sausages and the small intestine is used in chorizos and similar

preserves). Pig's feet and ears will be boiled into jelly, and even the head and brains of the pig will be eaten in a celebratory meal. By the end of the week, the pig will be treated entirely to ensure every part of it is eaten in one way or another. The last collective activity in the process will take place two months later, in February, when the pig's lard will be used to make sweet pies in the baker's oven. The killing of the pig involved a great party and hours of collective effort in a complex choreography of food-related labor. The three children are happy having enjoyed many of their favorite foods over those months in an atmosphere of collective, hard labor.

Many villages in the north of Spain had similar rituals during the decades leading up until approximately 1985. A three-generation family with four to six children, in a village such as the one described above, would kill two pigs a year and that would cover their pork needs for the rest of the year, including presents and favors for neighbors and extended family members who participated in the ritual. The pigs were reared within walking distance of the house, fed with household organic waste. Now it is very difficult to see this ritual performed. When asking those who participated in the killing of the pig every year why they stopped they would give a range of answers which, in the end, could be summarised in one statement: it was too much work and, instead, it was easier to buy what was needed in the shop. In the end, regulations made it impossible to maintain these practices. Life changed and with it, rituals disappeared.

Central to this experience, there was a sense of thankfulness towards the pig, a recognition of its centrality to the village life, the recognition of a kinship of gratefulness embedded in most human experiences (following Haraway 1997). The example enables us to reconsider the notion of limits and abundance through the eyes of a child. The pig's ritual emerges from a context of scarcity: from the need to use and divide up every part of the pig to ensure the family's and village's survival. This very concern for survival reveals the complex nature of abundance. The layered processes to deal with different parts of the pig offer an abundance of choice which is hardly reproduced in the average supermarket. In addition, the pig was linked to a rhythm of abundance in those villages. It marked a moment of the extreme abundance of meat during the year that worked in balance with other moments of the year where other products would abound, integrating social life with the rhythms of nature. Abundance was related to

specific moments along the year, to existing processes, to a variety of imagined products, to collective life. This notion of abundance as seen through a child's eyes is very compelling and present in many books. A memorable one is Salman Rushdie's *Midnight's Children*, in which he evokes the variety of smells and tastes in chutney.

Here, abundance is linked to variety, to commitment, to individualized labor and personal relations. It is not a variety of different products (e.g., different parts of the pig or different chutneys) that makes abundance, but rather, it is the experience of multiple forms of food. The paradox is that with chutney, as with the preservation of the pig, it is the strategies to manage scarcity that led to a perception of abundance.

Contrast this with the more common understandings of scarcity which have come to dominate dystopian science fiction literature. One particularly compelling example is provided in Frank Herbert's science fiction opus, *Dune*, which centers on the "inevitable" dependence of human civilizations upon their natural environment.

> "Those are date palms," [Yueh] said. "One date palm requires forty liters of water a day. A man requires but eight liters. A palm, then, equals five men. There are twenty palms out there – one hundred men. (Herbert 1984: 8.24)

On the desert planet Dune, a nomadic culture has learned to survive in an extremely inhospitable, arid climate. The nomads wear full-body suits that recycle the water that leaves their bodies through breath and perspiration. Dead bodies are emptied of liquid before burial to keep the dead members' water in the group. Power and wealth is measured in access to water. The saga revolves around efforts and dreams to transform the fragile ecosystem of Dune into a lush abundance of green. Ultimately, these efforts reveal unexpected interdependencies and connections throughout the ecosystem that evade human control, and the novel instead illustrates how humanity remains permanently shackled by its reliance on finite natural resources, ecosystem limits and human competition.

Dune is a retelling of Hardin's "Tragedy of the Commons" (1968). Hardin imagined a world in which cattle herders would maximize their individual benefits from a common pasture, until it is destroyed in its entirety. Regulation was a necessary condition to ensure the continuity of (nature's) pastures. These myths deny the

possibility of human cooperation. They assume instead that a human would actually "calculate" the water in a palm, or the amount of pasture won from the local commons to maximize utility. While it is easier to imagine nomads developing multiple practices and rhythms of water use, including the draining of dead bodies, it is a lot more difficult to imagine anyone calculating in an extreme situation that "a palm equals five men." Instead, it is likely that Yueh is making a complex judgment of what he and his group need, rather than a cold, sharp quantitative estimate in which all things – palms, water, men – are objectified.

These ideas relate to the notion of limits, which is central to just sustainabilities theory. Agyeman and colleagues (2002: p. 78) explain that ecological limits are at the heart of sustainability, but also that they are inseparable from questions of equity and justice:

> A truly sustainable society is one where wider questions of social needs and welfare, and economic opportunity, are integrally related to environmental limits imposed by supporting ecosystems. This emphasis upon greater equity as a desirable and just social goal, is intimately linked to a recognition that, unless society strives for a greater level of social and economic equity, both within and between nations, the long-term objective of a more sustainable world is unlikely to be secured.

The notion of "limits" has been at the core of most environmental thought since the publication of *The Limits to Growth* by the Club of Rome. We argue, however, that the dominant interpretation of limits is not useful, because it prioritizes calculative approaches that do not recognize the forms of abundance that enable human life to flourish. Instead, we argue for a reinterpretation of the notion of scarcity, considering the paradox of the forms of abundance that are generated in scarcity contexts. One thing is to recognize ourselves as vulnerable humans living in a finite world, and another is to rationalize that realization of fragility in futile inventories that bear little influence on the practices of everyday life. There is a trap in a certain type of scarcity building that depoliticizes environmental thinking through the development of quantitative assessments. Instead, we believe that limits call for a sense of shared responsibility and collective engagement with nature to generate cultures of abundance.

8.2 The concept of limits in sustainable development thinking

The idea of limits evokes a sense that the world's pie is limited and that we either divide the pie appropriately or eat less pie. Through its origin in the natural sciences, its central position in environmentalism and its intimate connection with elaborate calculations, it often beckons in sustainability conversations as ultimate and inescapable truth. Conceptualizations of limits have shifted over the years, drawing on different schools of thought and feeding into different political arguments. In this chapter, we begin with a brief history of the concept of limits and show how different interpretations have been linked to contemporary problems. The concept of limits is relational because it connects human demands on the environment with their impacts.

One common way to look at ecological limits is to think of them in relation to the population. This is commonly thought of as a "Malthusian" perspective in reference to Malthus, whose book *An Essay on the Principle of Population* (1798) warned against population growth, which – in his view – followed an exponential trajectory. Such growth would lead to depletion of food and the inevitable march towards famine, poverty and chaos. Population was represented as a plague, some sort of marabunta, whose destructive impact on the environment can hardly be controlled. Ehrlich's publication of *The Population Bomb* in 1968 reframed this issue as a contemporary concern. Ehrlich perceived population growth as an inevitable cause of mass starvation; indeed, hundreds of millions of people were predicted to be doomed to starve to death in the 1970s as a direct result of population growth. Ehrlich (1968: p. xii) warns us:

> It cannot be overemphasized, however, that no changes in behaviour and technology can save us unless we can achieve control over the size of the human population. The birth rate must be brought into balance with the death rate or mankind will breed itself into oblivion. We can no longer afford merely to treat the symptoms of the cancer of population growth; the cancer itself must be cut out.

The only way to avoid such calamities was to exercise strict population control, through draconian measures such as mass sterilization campaigns. Limits appear as a means to control biological life.

Although the above quote perhaps comes across as rather archaic, the approach itself is by no means outdated. The UK-based organization Population Matters, for example, advocates against childbearing as a solution to realizing a healthy, biodiverse planet (Population Matters 2019).

Another way is to look at limits is in relation to individualistic interests that override the good of all. A highly influential (although arguably erroneous) work that introduced this principle was Garrett Hardin's (1968) article "The Tragedy of the Commons." While the theoretical impact of this publication lay in conceptualizing collective behavior with regard to the maintenance of public resources, it also highlighted debates on resource depletion. "The Tragedy of the Commons" expands the argument of William Forrester Lloyd, who had previously studied trends in overgrazing of cattle as a consequence of the self-interest of the individual. Hardin (1968: p. 1244) complains:

> Each man is locked into a system that compels him to increase his herd without limit – in a limited world. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.

Hardin concluded that in contexts of unregulated consumption of common resources, the outcome must always be undesirable over-consumption and eventual resource depletion. Increased regulation, restricted freedom in resource consumption, and population control were policy recommendations derived from this analysis. This theory has become a classic argument to explain global trends such as over-fishing and global warming, but it is also a theory that denies any possibility for collaboration, solidarity or voluntary sharing.

The report *The Limits to Growth* (Meadows, Randers et al. 1972) shifted the discussion to the technological possibility to maintain growth in the face of finite natural resources. *The Limits to Growth* situated ideas of environmental limits, which are closely linked with exponential (population) growth, within a wider systems theory framework. In doing so, the publication emphasized that those limits applied to multiple resources deemed necessary for humans to

sustain a modern lifestyle. For example, the production of food for the growing number of people of the future can only be realized with sufficient resources of land – a resource that is finite. Even with a quadrupling of productivity (realized primarily through enhanced agricultural technology), an inflection point between the size of land needed to feed the world's population and available space would be reached around 2050 (ignoring pressures created by the increasing area of built-up land, soil depletion, pollution and erosion), according to the Club of Rome's calculations. The current and future conditions of food production and starvation were analyzed as follows:

> There is no question that many of these deaths are due to the world's social limitations rather than its physical ones. Yet there is clearly a link between these two kinds of limitations in the food-producing system. If good fertile land were still easily reached and brought under cultivation, there would be no economic barrier to feeding the hungry, and no difficult social choices to make . . . This is a social problem exacerbated by a physical limitation. (Meadows, Randers et al. 1972: p. 52)

We can understand from this conclusion that limits are produced through the interaction between finite physical resources and social conditions. This approach appreciates understandings in systems theory about the complex interactions and feedback loops between multiple domains. For the Club of Rome, limits remain inseparable from the inevitability of exponential population expansion, rising costs of resources due to scarcities and the continued production of industrial capital.

In 1976 the United Nations Conference on Human Settlement (Habitat I) expressed deep concern over the fact that living conditions for vast numbers of people remained "unacceptable," as a result of inequitable economic growth, social and ecological deterioration, continuing population growth and uncontrolled urbanization. While many of the socio-environmental challenges identified by the Vancouver Declaration were not new, the conference marked the emergence of international recognition of the link between sustainability concerns and urbanization. A summary and observation on the proceedings reflect on the conference as follows:

> What is actually being discussed is the threatening growth in the world's numbers, the grain to feed them, the safe water to restore their health, work to end hopeless unemployment, the skews to income that are bitter with injustice, the energy – the safe energy – to carry on the whole human experiment. Never before has the world's housekeeping been thus discussed. (Ontario Ministry of Environment 1976)

More recently, several reinterpretations of the notion of limit have been situated in relation to theories of ecosystems. This includes the concept of "carrying capacity," which is defined in terms of the number of individuals of a species that can be sustained indefinitely by their environment, considering their pressure on habitat, water, food and similar parameters. The theory was originally devised to understand ecosystem dynamics in relation to plant and animal species, but eventually transferred to human populations and became especially popular in economic theories of the environment, such as ecological economics. For example, Edward Wilson (2002) employs the approach in *The Future of Life*, where he calculates that the maximum carrying capacity of Earth in terms of the human species reaches 10 billion individuals. Wilson's estimate is based on limited amounts of fresh water and constrained capacity to produce food (bearing in mind that the 10 billion count presupposes an all-vegetarian population). Wilson (2002: p. 28) warns us in a familiar language:

> The constraints of the biosphere are fixed. The bottleneck through which we are passing is real. It should be obvious to anyone not in a euphoric delirium that whatever humanity does or does not do, Earth's capacity to support our species is approaching the limit.

The concept of carrying capacity has applications in terms of defining practical policy concepts, such as the idea of environmental footprints and environmental/eco-budgets. The environmental footprint measures the current influence of human activities on the environment in terms of resource consumption and waste production. It is defined, according to the WWF, as "the impact of human activities measured in terms of the area of biologically productive land and water required to produce the goods consumed and to assimilate the wastes generated" (WWF 2019). This tool allows for

a variety of illustrative comparisons and evaluations of how consumption patterns and lifestyles of individuals and societies relate to their natural environments. For example, the organization Global Footprint Network makes global comparisons publicly available on its website. It shows the nations in the world with the highest per capita ecological footprints, measured as a composite of pressures on fishing, built-up land, grazing and cropland, carbon emissions and forest. Qatar, Luxembourg, the United Arab Emirates and Mongolia consume around or over 10 "global hectares" per individual. The average per capita consumption needs to be 1.7 for the world to sustain human consumption, according to the organization, indicating an enormous overshoot in demand on natural resources.

Similarly, "environmental budgets" are management systems that assume natural constraints as a reality and attempt to plan future consumption in line with those limits. For example, ICLEI (n.d.) has introduced the tool ecoBUDGET, developed to facilitate sustainability efforts of local governments, which allows authorities to plan for the conservation of natural resources (land, air, water, species diversity), set political targets and implement these using a package of technical tools. Carbon budgets is another planning instrument enjoying widespread recognition. These estimate the amount of greenhouse gas emissions that can be emitted for the global temperature increase to remain within 1.5 or 2 degrees Celsius and avoid dangerous and irreversible impacts of climate change (e.g., UNEP 2018). Such estimates are typically associated with complex modeling that produces predictions of future trends, which, however, remain fundamentally disconnected from human behaviors and relations. In all these theories, there is an assumption that normative assumptions and functions of the economy remain constant and that sophisticated quantification is a prerequisite for correctly tackling environmental degradation.

Limits is, above all, a discourse and as such, it is also a political tool. In *The Politics of the Earth*, Dryzek (1997) argues that ideas related to limits to growth are expressed through a dominant global narrative that he labels "survivalism." According to Dryzek, this discourse reached a paradigmatic status around the 1970s but was then outpaced by the optimism surrounding the sustainability discourse in the 1990s. Thus, there is an element of social representation and political framing in the characterization of certain situations as having limits. This perspective explains how political programs and policy

options become legitimized through their association with dominant narratives, while alternative options are foreclosed. Dryzek notes, in the 2013 republication of the book, that the limits discourse may enjoy a significant upswing through the popularization of ideas about the Anthropocene and planetary boundaries, as discussed below.

Table 8.1 summarizes different interpretations of the notion of limits and their central assumptions. They all imply a simplification of human life and its situation within complex webs of socio-ecological relations, which are not easily defined within a predefined set of environmental thresholds. This critique is incorporated –albeit implicitly– in what is to date the most sophisticated notion of limits, the concept of planetary boundaries.

8.3 Planetary boundaries and doughnut economics

The most recent incarnation of the idea of ecological limits in international environmental policy is the concept of "planetary

Table 8.1 Summary of key theories on limits

Theory	Notion of limits	Assumptions about the relation between humans and ecosystems
Malthus, *The Population Bomb*	Finite resources available for human survival (especially food)	Humanity as a plague which requires infinite amounts of food
Tragedy of the Commons	Finite resources over which humans have conflicts	Humans are individualistic and profit-maximizing individuals who take advantage of free resources at the expense of others
Limits to Growth	Finite resources needed to sustain modern lifestyles and capitalist economy	Population growth is exponential; there is a fixed range of resources depleted through perpetual capital investment
Ecological theory	Ecosystems have a limited carrying capacity to sustain humans	The resources of natural ecosystems are incompatible with the demands of humans and the size of human populations
Environmental politics	Central concept of a key discourse of survivalism	Humans experience resource scarcity in relation to their own beliefs, assumptions and institutions

Source: authors' elaboration.

boundaries" (PB). This framework contributes a science-based analysis of the risk that human perturbations will destabilize ecological systems at a planetary scale.

The idea of planetary boundaries is – in the spirit of limits to growth – based on advanced modeling and computer calculations that quantify available resources, pace of depletion and threats to the global ecosystem. The concept was introduced in 2009 by a group of scientists led by Johan Rockström at the Stockholm Resilience Centre. The conceptual framework considers the complex interactions that allow an ecosystem to function and thresholds that may not be crossed if these functions are to be maintained. The Stockholm Resilience Centre identifies nine planetary boundaries that must be maintained to avoid pushing the global ecosystem into large-scale abrupt or irreversible environmental changes (SRC 2018). The nine boundaries are: climate change, novel entities, ozone depletion, atmospheric aerosol loading, ocean acidification, biogeochemical flows, freshwater use, land system change and biosphere integrity (Steffen, Richardson et al. 2015). The theory articulates a complex framework of terminology of limits (Table 8.2).

The nine boundaries define a "safe operating space" for humanity, that is, a metaphor of the physical space within which the use of resources is sustainable (Rockström, Steffen et al. 2009). Human activity has to be maintained within this safe operating space to survive. Rockström and his team argue that at the introduction of the concept in 2009, two of these boundaries had already been crossed (Rockström, Steffen et al. 2009). Six years later, seven of the nine boundaries appeared to have been transgressed (Steffen, Richardson et al. 2015).

The concept of planetary boundaries has inspired renewed thinking about the economy that has permeated numerous policy discussions. The first one relates to the extent to which planetary boundaries can help redefine the human economy. One of the most influential approaches has been to think of the economy as contained within two concentric "resource boundaries" that form a "doughnut" (Raworth 2012, 2017). The external boundary defines the safe operating space, that is, the nine resource thresholds developed in the framework of planetary boundaries. The internal boundary refers to the minimum resource use required to support human

TABLE 8.2 Key terminology to define planetary boundaries

Term	Definition
Thresholds	"Non-linear transitions in the functioning of coupled human–environmental systems" (Rockström, Steffen et al. 2009: p. 3)
Planetary tipping points	"A tipping point or threshold is a nonlinear relation between a driver (e.g., climate change or pollution) and the eventual state of the ecosystem when it finally equilibrates" (Hughes, Carpenter et al. 2013: p. 390)
Boundaries	"Human determined values of the control variable set at a 'safe' distance from a dangerous level" [in relation to thresholds] (Rockström, Steffen et al. 2009: p. 5). Planetary boundaries are lower than planetary tipping points
Limits	As per limits to growth: "World development within the biophysical limits of a stable Earth system has always been a necessity" (Steffen, Richardson et al. 2015: p. 8)
Minimum standards	"Favoring preservation in the face of irreversible environmental damage, unless the social costs of forgone development . . . are unacceptable" (Crowards 1998: p. 303)
Tolerable windows	"The main idea is to follow an inverse path, starting from a set of hypothetical climate evolutions considered tolerable with respect to their 'anthropogenic interferences'" (Petschel-Held, Schellnhuber et al. 1999: p. 305)

Sources: Rockström, Steffen et al. (2009), Griggs, Stafford-Smith et al. (2013), Steffen, Richardson et al. (2015).

needs. This internal boundary is defined using the assumption that there are some finite human needs, which are measurable and can be aggregated into indicators (following the work of Manfred Max-Neef). In this case, the internal boundary of doughnut economics is defined in relation to "universal indicators" derived from international development policy. In this way, doughnut economics defines a "just and safe" space for human activities that allows for dignified conditions of life and the preservation of core earth functions. These ideas drew on the existing notion of environmental space, which in a similar way had combined quantification of environmental limits with the minimum resources required for a dignified life, as advocated by the organization Friends of the Earth in the 1990s (McLaren 2003; see also Section 6.2).

The second novel approach addresses how this economy relates to existing processes on Earth, such as the current footprint of human activities. This interpretation assumes, for example, that planetary

boundaries can be downscaled to national equivalents, which can then be synthesized into regional environmental limits, hence developing a clear model of allocation of resource budgets across regions, nations and provinces (O'Neill, Fanning et al. 2018). O'Neill and colleagues (2018: p. 88) argue:

> Physical needs such as nutrition, sanitation, access to electricity, and the elimination of extreme poverty could likely be met for all people without transgressing planetary boundaries. However, the universal achievement of more qualitative goals (e.g. high life satisfaction) would require a level of resource use that is 2.6 times the sustainable level, based on current relationships.

According to this analysis, the Earth could only sustain a population of 7 billion human beings, assuming that basic physical needs were met for all. The authors recommend, based on this conclusion, that resource consumption needs to be reduced in wealthy nations and that further attention is required to social provision systems and the pursuit of non-material wealth.

This kind of thinking is reproduced in other attempts at establishing ecological limits. For example, the Greenhouse Development Rights Framework (Baer, Kartha et al. 2009) departs from the share of global emissions attributable to each country but sets emissions reduction responsibilities in proportion to per capita income levels. A "development threshold" is defined as the level of welfare below which individuals cannot be expected to contribute to climate mitigation at all, ideally set above the poverty line. Responsibility and capacity of emissions reductions are determined in relation to this threshold, based on remaining income above the threshold and per capita carbon emissions. A resulting Responsibility Capacity Index would allocate the largest share of emissions reduction responsibility to the United States (33 percent), while China would be allocated only around 5 percent despite its large aggregate emissions profile.

Overall, the concept of planetary boundaries is about the non-negotiable planetary preconditions that humanity needs to abide by to ensure survival (Rockström, Steffen et al. 2009). One key issue is that the global tipping thresholds are unlikely to manifest in sudden and synchronous collapses which enable diagnosis; they will instead proceed through slow progress up to the point

of no return, in which the biosphere's equilibrium will be transgressed (Griggs, Stafford-Smith et al. 2013). The dilemma is how to address the challenge of increasingly unfeasible continuous growth, with challenges in governance and massive gaps of data. Biermann (2012) argues that a wide consensus among scientists and policy networks will be needed to agree on planetary boundaries, particularly when there is lack of precision in the scientific means to estimate some of them. Rather than set specific "limits to growth," planetary boundaries interrogate the limits of the total human impact on planetary systems.

For that reason, the planetary boundaries framework could apply to concerns at the global level, at least in terms of an approach that builds consensus around the urgency of current global environmental change. However, it cannot be applied so readily to issues at the local level where the just sustainabilities paradigm is located. This approach generally assumes equity of distribution in geographies, needs and constraints. Indeed, planetary boundaries warn against the "downscaling" of the global framework to specific locales, as this was not intended in the design of the framework (Steffen, Richardson et al. 2015: p. 9). A key problem is the use of a downscaling logic that allocates environmental "budgets" according to certain characteristics, such as population, income or biophysical limits (with indicators or criteria fixed in local development conditions). The focus on the development of global sustainability pathways overlooks the fact that those pathways, particularly just sustainabilities pathways, need to be context-sensitive and socially diverse.

8.4 Limits as a political project and scarcity as a social construction

In a discussion on the social construction of environmental thought with Roland Clift – one of the academics that brought sustainability thinking to common engineering practices – he resisted the negotiable character of limits. "Everything could be socially constructed," he argued, "except the laws of thermodynamics" (personal communication, n.d.). In saying this, he was stating the impossibility of creating more energy or more matter on Earth. By contrast, we argue that people live with limits all the time. It is capitalism, not people, which extracts value from a limited

range of highly differentiated products that are sold massively, rather than taking advantage of the whole gamut of human flourishing perspectives that nature opens for us. Even how the absolute thermodynamics limits of Earth affect humans is always socially constructed, dependent on the interpretation of and responses to scarcity in particular moments of time. The question of limits needs to be approached from within a historical perspective, in relation to the political and social processes that create perceptions of scarcity and abundance.

Reinterpreting limits from a just sustainabilities perspective leads to two main critiques of calculative, quantitative approaches: (1) There is an absence of radical policy solutions related to equality and systems of economic distribution, linked with the inability to tackle limits as a political issue; (2) They mask the social construction of the problem and alternative conceptualizations of both scarcity and abundance. We discuss these limitations below.

The concept of planetary boundaries is based on systems theory, which accounts for a diversity of human activities, yet the frameworks steer clear of social prescriptions. Steffen, Richardson et al. (2015: p. 9) state that "the PB framework does not as yet account for the regional distribution of the impact or its historical patterns. Nor does the planetary boundaries framework take into account the deeper issues of equity and causation." The scholars behind the framework in fact explicitly aspire for the approach to remain apolitical: "The PB framework does not dictate how societies should develop. These are political decisions that must include consideration of the human dimensions, including equity, not incorporated in the PB framework" (Steffen, Richardson et al. 2015: p. 1).

The problem is that the concept of planetary boundaries is inherently linked to questions of equity, allocation of responsibility and the basic functioning of the global capitalist economic system. Questions such as land use patterns, industrial emissions and freshwater consumption can simply not be separated from social mechanisms of distribution, access and structures of power. Taking a just sustainabilities approach to ecosystem limits implies incorporating a redistributive or equity perspective into the concept. Thus, maintaining resource use within the carrying capacity of the planet cannot only imply restricting consumption under currently highly inequitable patterns. Instead, it is necessary to reduce

environmental pressures through means that primarily target the world's most affluent populations and challenge dominant economic rationales.

While acknowledging that ecosystem limits are "very real," Agyeman (2013) argues that it is essential to combine calculations of material limits with notions of social justice and social needs. Agyeman builds on the notion of environmental space (see McLaren 2003) as a strategy to realize this combination. Along the principles of the doughnut economy approach, this concept assumes that every individual has the same right to resource consumption, but that this consumption must remain within the carrying capacity of the planet. Agyeman argues that three strategies of decoupling are required to realize this in practice: decoupling material consumption from resource use (efficiency), decoupling delivery of well-being from consumption (sufficiency), and decoupling fundamental needs (such as political freedom and identity) from consumption. The first of these can be constructed as a technological question, and as is discussed in Section 8.2, it is by far the most common strategy in practice to address ecosystem limits at the local level. The latter two are political or philosophical in nature. As discussed in Chapter 5, they are far less widespread in local programs to address well-being and satisfying basic needs (see Sections 5.6 and 5.7).

One political response to limits is degrowth and a-growth (see also Section 5.5). A-growth is a concept that recognizes the limitations of GDP – an indicator of costs rather than social welfare – as a measurement of well-being (van den Bergh and Kallis 2012). As stated by Leach, Raworth et al. (2013), "Dominant conceptions of human well-being and societal development essentially focus on material wealth and use gross domestic product (GDP) to track progress. From a social-ecological systems point of view, such conceptions are inadequate." Van den Bergh and Kallis argue that embracing a-growth would make it possible to abandon GDP as an overriding political objective and make it possible to shift to systems that are more expensive but allow for enhanced social well-being and environmental protection (e.g. from fossil fuels to renewable energy). Degrowth represents the ideal of downscaling of the economy to make it consistent with biophysical boundaries (Van den Bergh and Kallis 2012). Latouche (2009: p. 3) writes:

> To say that exponential growth is incompatible with a finite world and that our capacity for consumption must not exceed the biosphere's capacity for regeneration is so obvious that few would agree. It is, on the other hand, much more difficult to accept that the inevitable effects of production and consumption have to be reduced (by almost two-thirds in the case of France) and that the logic of systematic and dramatic growth (which is driven by finance capital's compulsive addiction to growth) has to be called into question, as does our way of life.

Degrowth is, according to Latouche, a radical criticism of progressivist notions of development and production. Proposals of degrowth therefore include creative notions about the economy that imagine social well-being without economic expansion, such as strengthened social security systems through redistribution and taxation, localization, reductions in working hours and encouraging alternative and/or traditional economic spaces existing outside the market economy. However, it also implies shifts in values and conceptualizations of notions of scarcity and abundance. Foster (2011), unconvinced by the theoretical underpinnings of degrowth, questions what realization of the term would actually mean in practice. Writing in the context of the 2008–2009 recession in Europe, degrowth proponents provided little guidance for unemployed workers – highlighting the issue of what the alternative to growth actually consists of in practice. Foster argued that degrowth advocates miss the core of the problem by focusing on expansion rather than capital accumulation (the essence of the capitalist economy) and calls instead for renewed attention to communist and socialist criticisms of the economy.

Taking a more optimistic attitude towards the degrowth proposition, Kallis and March (2015) search for alternative entry points into this debate. To do so, they draw on Ursula Le Guin's novel *The Dispossessed* to illustrate the social construction of abundance and scarcity. The novel contrasts societies on two planets: the harsh desert planet Anarres, where people live in a communal sharing economy, and abundant Urras, a capitalist economy. In spite of the hardship on Anarres, it is paradoxically the population on Urras who perpetually perceive themselves in a state of want and need. Kallis and March (2015: p. 363) observe:

> Capitalism produces relative scarcities by enclosures, by positional inequalities, and by the promise of unlimited choice. In framing scarcity as a universal, production-related problem, capitalism is legitimized as the system best suited to expand the means of production. Only a society that "has had enough" can refrain from accumulation and liberate itself from capitalism . . . It is in materially wealthy Urras that people live in perceived scarcity, whereas the materially poor residents of Anarres experience abundance.

This is not to say that life under conditions of physical scarcities can produce no hardship (in the case of Anarres it certainly does). Rather than to deny material realities, Kallis and March argue that the experience of scarcity is a question of perception and experience, which links to dimensions like self-limitation (self-imposed freedom from material wants and needs) and opportunities of sharing common resources. This points instead to solutions such as work and resource sharing – communal systems, co-housing, co-management. In the words of Kallis and March (2015: p. 364), "sharing in common establishes equality and equality dissolves the relative comparisons that breed a personal sense of scarcity and unsatisfied want."

Another example of the social construction of scarcity is provided by Maria Kaika's (2003) exploration of the politics surrounding water in Athens. Kaika centers this examination on a drought that hit Athens between 1989 and 1991, which appeared to suddenly transform water from an abundant (and centrally managed) resource to a source of crisis. Through the emergency measures that followed, the political establishment built on the notion of scarcity to introduce a set of extreme management measures, including a steep retroactive hike in water prices. These interventions, and the following political process of commodification and privatization of water resources were made possible by invoking scarcity as a natural, and therefore inevitable, crisis. By contrast, Kaika argues that the apparent scarcity was not "natural," but a result of increasing consumption over time, illegal use and lack of long-term planning. The drought became a crisis due to the naturalized expectation that water would always be available in taps, despite this not having been the case throughout most of the city's history. Scarcity, from Kaika's perspective, is always produced through relations between society and nature.

For Charles Eisenstein (2011), our current economic system is not characterized by scarcity, but by abundance. The global North even suffers from superabundance, in which our quantities of wasted food alone, for example, would suffice to feed the hungry of the global South. Similarly, enormous amounts of resources are, in Eisenstein's view, spent on war, arms, gigantic houses occupied by few people, appliances with a short life-span and trinkets that people do not need. The constant perception of scarcity is, however, a fundamental axiom of economic theory, which is reflected everywhere in our society and politics and reinforced as a central truth (economics, according to most textbooks, "is the study of human behavior under conditions of scarcity" (Eisenstein 2011: p. 29)). Eisenstein's answer is not to reject materiality, but to emotionally re-attach to material objects and reinstate a culture of care and maintenance that he refers to as "sacred economics." Sacred, in this sense, refers to the experience of something as irreplaceable and unique and imbued with social relations – the opposite of things that are distant and anonymous. As economics and reductionist science strips the world of sacredness by understanding everything through a lens of universality, Eisenstein calls for rethinking our relationship with money and objects, including reappreciation of gift economies and restoration of the commons.

We can also reinterpret the notion of growth by reimagining abundance. For the French philosopher Bataille, any attempts to deploy an ideal to control and contain the material world encounters a base matter that cannot be easily reduced to the ideal. For example, he describes modern economies as restrictive, in opposition to the general exchange economy that they attempt to domesticate (Bataille 1993). This encounter between the ideal and base matter generates "an excess" of "energy" that cannot be accumulated. Such excess manifests as all that cannot be conferred rational meaning or understood in a utilitarian way, but it would not be correct to understand excess as irrational (in contrast to utilitarian, rational values) because this would constitute another attempt to give excess the meaning it lacks. Instead, excess can be apprehended through its experience, which led to Bataille's fixation with ritualistic approximations to social life. Within existing frameworks of rational thinking and utilitarianism, excess emerges as cataclysm, as a disorder, as human depravation. At the same time, excess is also linked to passion, creativity and motion. Indeed, we can posit excess at the root of human

desire, as a manifestation of what posited truths do not acknowledge and explain. As such, excess would provide impetus to the dialectical movement and would generate contradictions as a snapshot of a given moment, in which the wholeness of human experiences encounters the limitations of rationalism. What Bataille is doing is helping to rethink abundance. If we consider what Bataille refers to as the general exchange economy, it will always contain a superabundance of energy (referred to as wealth). Humans are destined "in a privileged way, to that glorious operation, to useless consumption" (Bataille 1988: p. 23). This excess can be squandered, unknowingly channeled into destruction (warfare, chaos) or transformed into luxury, sumptuous spending and giving. Rather than having too few resources in society, from this perspective, we always have a surplus. Whether deliberate or not, this abundance will somehow be spent, and rather than being concerned with scarcity, we should take care that this excess is not translated into violence, but into creativity and generosity. Degrowth theorists are already engaging with the possibility of considering "radical abundance" as the abundance that is implicit in the distribution of available resources (Hickel 2019). The challenge is to reenact the experiences of abundance that may be inherent to certain forms of cooperative living, whether this is making chutney or dividing a pig equally among the town villagers.

8.5 Local sustainability initiatives

In our sample, the criterion of limits was the most rarely addressed (7 percent). The discourse of ecosystem limits has not entered into mainstream sustainability agendas, in spite of the longstanding debate on limits to growth and the influential position of the planetary boundaries concept. This may also relate to the optimist discourses that, according to Dryzek, dominated environmental thinking until, at least, the turn of the millennium. We may still only be at the beginning of a new time in which limits-related discourses become more prominent.

Moreover, programs that aimed at integrated resource protection were rare. Instead, most initiatives in this category focused on the protection of urban biodiversity and ecological systems (green spaces, wildlife habitats, wetlands or similar within the urban area). These strategies rarely involved formal consideration of carrying capacities, current rates of resource consumption, or anthropogenic impacts on ecosystems. Here, we considered that initiatives met the criterion if

they had an explicit aim of ecosystem protection and resource conservation that expressed a concern with limits.

There were a number of examples of municipal action to protect ecosystems, including the initiative of Cape Town (South Africa) to preserve the Table Mountain National Park within its city limits. The park contributes to the city by maintaining cleaner air, creating jobs in the tourism industry, functioning as a space for recreation and conserving biodiversity. Durban (South Africa) has used a strategy of maintaining open spaces in the city to preserve ecosystems and habitats. These spaces help to maintain and recycle water, contribute to erosion control, nutrient cycling and food production, as well as to the well-being of citizens. In Asia, Hong Kong is developing a Greening Master Plan for each of its districts, and within the city, only 20 percent of the land is built up, with a large share left as nature reserves and green space. In 1989, the city of Baguio (Philippines) embarked on biodiversity protection through the Adopt-a-Park mission, where civic organizations were encouraged to take responsibility for safeguarding urban green areas. Rio de Janeiro has had programs directed to the preservation of the local rainforest. The state has created 46 protected areas and relies on funding from donations, carbon credits and environmental compensation from industry to protect the areas (World Bank 2012). Another project, led by the Rainforest Trust, aims to create a network of preserved rainforest around the urban area. The initiative, inspired by London's Green Belt Project, is to be implemented in cooperation with municipalities on the outskirts of the city.

The shortcoming of this type of initiative is that they often lack a sociopolitical transformative edge. The weakest examples in this category are projects aiming towards ecosystem protection at a very localized scale, for example, wildlife parks and protection of wetlands. While important, these interventions rarely engage with broader trends of consumption or production that constitute the underlying threat to ecosystem boundaries. Moreover, they often present traditional, expert-led approaches to ecosystems management.

The second form of initiative consisted of strategies to create inventories of species or resources that exist in the city. These initiatives were more explicitly geared towards quantifying parameters, thus constituting a closer approximation to boundaries notions. This group of initiatives also includes strategies to link ecosystem protection with novel socioeconomic institutions, such as eco-budgets and conservation funds.

For example, the city of Trang (Thailand) has used a participatory approach to map the biodiversity along the Nam Jed Canal, illustrating how cooperation with local communities can result in a broad identification of species and greater awareness towards conservation.

Financial tools are central to think about material and biodiversity constraints. For example, the ecoBUDGET tool has been absorbed by municipal governments in different world regions (Box 8.1). Another strategy consists of setting up a funding arrangement to protect natural resources over the long term. For example, the Quito Water Conservation Fund was established to ensure long-term financing of the protection of watersheds in Quito, Ecuador. The fund receives economic resources from multiple sources including government bodies, utilities and NGOs.

Box 8.1 EcoBudget initiatives

The Guntur Municipality, India, adopted the ecoBUDGET methodology in 2006, incorporating targets and indicators for water quality and quantity, waste management, size of green space and air quality. The municipality prioritized water management, and results from the period included monitoring of a larger number of water pollutants, structural improvements and improved metering of the water supply system, which has increased the size of the urban water supply. Other positive outcomes include an increase in waste collection to 60 percent and segregation to 70 percent, and an increase in green space per person from 78 m^2 to 90 m^2 per 1,000 inhabitants. A key benefit has been the incorporation of environmental concern into the city's political and administrative processes, and the strong involvement of the public in these issues. Some challenges in Guntur included getting all stakeholders on board and coordinating cross-sector action. Often, resources were the limiting constraint, but the coordination of different governments was also crucial. During the implementation of the ecoBUDGET of Tubigon (Philippines) the municipality found that implementation required support from higher levels of government in order to be realized smoothly and that an investment model may be easier to realize than a target implementation model.

A common means to tackle both ecosystem limits and social concerns was urban agriculture projects that focus on food insecurity and food poverty. We have already mentioned above some of these projects in Sao Paulo and Quito, because of their participatory component. In addition, most of these projects also engage with questions of resource limits, particularly in terms of access to land. For example, city authorities in Casablanca (Morocco) and Dakar (Senegal) have used urban agriculture schemes to encourage the use of recycled water and introduce eco-agriculture in peri-urban areas to increase food production. These projects hold the potential to reduce vulnerability and increase resilience while at the same time addressing ecosystem integrity and maintaining the supporting ecosystems of the city.

8.6 Conclusions

In spite of decades of integration of the notion of limits into sustainability discourse, and alongside the recent revival of the concept through the planetary boundaries framework, we found that this principle is rarely explicitly embedded in sustainability action on the ground. The two forms in which the criterion appear both have limitations. On the one hand, there are attempts to protect ecosystems and biodiversity within urban environments. These projects often remain disconnected from the structural drivers that cause habitat fragmentation and environmental destruction. On the other hand, efforts to map and quantify ecosystem parameters are tried out in different urban settings. However, we found scant evidence of the ability of such strategies to challenge broader patterns of spatial planning or economic development.

The underpinning problem in both cases is a resistance to embrace the notion of limits because it challenges the growth-dependency paradigm that is at the heart of contemporary planning thought (Rydin 2013). Growth means different things in different contexts, but still captures the imagination of urban managers. Hence, achieving just sustainabilities requires a deconstruction effort towards the redefinition of the functioning of contemporary economies, by addressing both the material basis of the economy and how people thrive through processes of sharing and collaboration, rather than just exchange (McLaren and Agyeman 2015). At the same time, ideas of "radical abundance" should be directed

away from an implausible optimistic technological future, to consider instead how abundance emerges from collective sharing practices

Considering limits is not a question of calculating a fair division of the Earth's pie. Calculations may be useful to do certain estimations of availability, to balance multiple needs simultaneously and to reveal current patterns of injustice in resource consumption. However, the crucial challenge here is to use the notion of limits as a means to renegotiate socio-ecological relationships in urban areas. None of the initiatives included in the database did that. Nevertheless, political ecology and anthropology literatures are full of examples of multiple, constructive socio-ecological relations that do not entail denying human nature or human needs.

Ultimately, what is missing in ecological limits debates is the emotional connection between humans and nature, a dimension which can never be calculated or quantified. To address this shortcoming, we believe that consideration of ecological limits could draw more explicitly on the feminist principles of ethics of care. As explained by Virginia Held (2006), ethics of care relates to ethics that reject appeals to a universal and abstract system of morality, but instead is grounded in personal experience. She argues that this implies attention and sensitivity to the needs of others, to trust, and the ability to fix these considerations in emotions and relations. Ethics of care clearly encompass both humans and non-humans (Donovan and Adams 2007). As Plumwood (2004: p. 57) puts it:

> Countering the human/nature dualism associated with human-centredness gives us two tasks: (re)situating humans in ecological terms and non-humans in ethical terms. The first is apparently the more urgent and self-evident, the task of prudence or care for self, while the other is presented as optional, the inessential sphere of ethics or care for the other. But this is an error; the two tasks are interconnected, and cannot be addressed properly in isolation from each other.

Ecological limits discourse tends to portray humans as entities disconnected from natural systems, as agents consuming a resource to a greater or lesser extent. An ethics of care approach reminds us

that humans are embedded in nature – part of it not only through resource dependence, but through emotional and other forms of connections with the non-human. Re-entering individual and collective relationships with the environment into sustainability interventions opens up for approaches based not on resource conservation but on maintaining these fragile interrelationships of which we are a part.

9 | CONCLUSION

Sustainability may have been co-opted and appropriated, but it can also be re-appropriated to deliver just environmental action. We believe in the just sustainabilities framework because it accepts ethics of diversity and the embeddedness of social action. It recognizes people's right not only to achieve freedom and the quality of life they want, but also their ability to define the collective future they want. Just sustainabilities defends not only what matters to people, but also, what matters to nature. Just sustainabilities action aligns with the intrinsic value of the urban non-human and protects urban natures beyond utilitarian interests. In this way, just sustainabilities emerges as a set of principles that embraces the possibilities to achieve social justice while supporting and protecting the urban ecology.

Just sustainabilities emerge from within a Western tradition, even if this is within a tradition of emancipation and resistance. Action today takes place in a particular context and the rhetorical tools at our disposal emerge from a colonial tradition of knowledge. We still lack a reflexive review of just sustainabilities in practice that engages with its limitations: its origins in sustainability and traditional development thinking, the limited consideration given to intersectionality questions, and its complicity in the advancement of techno-economic discourses. There is a need to exercise caution before advancing principles that aspire towards universalism and towards subsuming alternative versions of what sustainability and justice is for the people who live in the places that have to be transformed. We need to renounce the idea that a fair and objective view on what sustainability is can ever be achieved. Instead the paradigm must be continuously constructed with those suffering deprivation and multiple forms of oppression. This is also precisely why just sustainabilities are always expressed in plural – it refers to a concept that is perpetually open to contestation, interpretation and re-imagination.

As important as the process of appropriation is who appropriates sustainability and for what purpose. Urban development projects are shaped by the interests of big multinationals, business developers, dogmatic government departments, international aid organizations more concerned about their own survival than their goals, and communities that feel threatened and take refuge in exclusionary discourses. Behind these social groups are people: people who can be reached and changed, people who can be enrolled in fundamental transformations. While discourses by themselves do not make the world, they do create opportunities for legitimization of certain discourses of action over others. Changing discourses is a big step towards social learning.

At the same time, we cannot risk engaging with just sustainabilities as a set of abstractions that do not reflect concrete experiences or do not lead to action. For that reason, in this chapter we finish with reflections on why just sustainabilities is not always realized in practice (Section 9.1) and by presenting a set of principles that we find helpful to bridge theoretically engaged thinking with the possibility of action (Section 9.2). Finally, we discuss how just sustainabilities principles can help to achieve urban transformations (Section 9.3).

9.1 Shortcomings in realizing just sustainabilities in practice

Could just sustainabilities become a new paradigm that responds to the concerns of 21st-century cities? It can certainly become a practical response to the challenges following the United Nations adoption of SDG11 (Making cities inclusive, safe, resilient and sustainable) and the NUA. Just sustainabilities is a discourse already present in local agendas of environmental action. It can be enacted within existing frameworks. At the same time, just sustainabilities is not a conciliatory menu of solutions that can be picked off the shelf to address any problem. Rather, just sustainabilities is a discourse that makes existing contradictions manifest, that enables contestation through the articulation of visible and invisible conflicts around society and the environment. The last thing we would wish for would be the application of a just sustainabilities framework as a single, consistent ideology for urban environmental management. Instead, just sustainabilities can be used as a diagnostic tool that can help to identify contradictions and reveal the structural relationships that shape them.

Civil society organizations and local community organizations have already made substantial contributions to demonstrating and acting upon the nexus between social justice and environmental sustainability (Agyeman, Bullard et al. 2002). These are initiatives that recognize the need for people to participate in environmental decisions; the imperative to meet people's basic needs' and the normative requirement to preserve the integrity of nature for future generations (Faber and McCarthy 2003). This suggests that a transformation of urban policy informed by just sustainabilities approaches is possible. However, there are significant obstacles to a progressive urban environmental agenda.

The continuing dominance of eco-efficiency approaches We found two expressions of a tendency of ongoing sustainability efforts to be captured by dominant eco-efficiency discourses. The first was an overwhelming majority of initiatives that only indirectly addressed the just sustainabilities criteria, which was the case in three of the four just sustainabilities principles. As illustrated by Table 9.1, this included a vast number of interventions geared towards traditional environmental management (such as air and water pollution) or the administration

TABLE 9.1 Types of initiatives that indirectly advance just sustainabilities aims

Indirectly targeted	Share	Trend
Well-being	62%	Programs to reduce air pollution and waste management or clean-up schemes (indirectly related to public health benefits), city greening or ecological protection/restoration initiatives and eco-city plans (indirectly related to improved living environments), non-motorized transport plans and renewable energy and energy efficiency projects (indirectly related to access or deprivation issues).
Future generations	70%	Measures that aim to prevent or slow down the speed at which current populations deplete natural resources, such as energy efficiency schemes, water conservation schemes and recycling schemes, which may leave future generations with a larger surplus.
Ecosystem limits	55%	Interventions that tackle conservation, reuse and natural resource protection, which indirectly contribute to the aim of protecting ecosystem limits (the notion of carrying capacities or limits is not explicit).

Source: authors' elaboration.

of sectoral issues (such as transport and energy). This typology of intervention suggests that, despite decades of research on the inseparable character of social elements in environmental degradation, local governments' initiatives, whether they are done by themselves or in partnership with other city actors, continue to display an unshakeable faith in the proposition that environmental deterioration can be effectively separated from complicated social concerns.

The second expression of this trend was represented by a typology of projects with objectives that completely excluded social well-being (11 percent) and – to a larger extent – social justice (58 percent). This included climate mitigation initiatives that consist of investments into factory retrofits, green business programs, renewable energy plants, and energy and water efficiency schemes based on reducing the consumption of natural resources. In particular, large infrastructure projects and technology-oriented efforts often fail to address justice considerations. These are, at the same time, very common in addressing environmental concerns (Table 9.2). In these

TABLE 9.2 Examples of sustainability initiatives that overlook concerns of justice and equity

Sector	Description	Examples
Water	Water projects often emphasize infrastructure (piping and treatment plants) or water body protection. In the global North, much focus is on efficiency and saving.	The Saving Water partnership in Seattle, USA, aims to reduce per capita water consumption through a variety of water saving programs.
Energy	Energy interventions often focus on large-scale generation projects. In the global North, attention is largely directed towards efficiency and saving.	Energy efficiency retrofits of a cement factory in Taishan, China, which relies on waste heat recovery, and construction of a wood biomass plant in Vienna, Austria, which aims to result in the reduction of carbon dioxide emissions.
Air	Air pollution reduction strategies in cities are often aimed at reducing emissions from motorized transport.	Low emission transport zones in Hong Kong, adopted with the objective of encouraging a shift to higher emission standards in vehicles.

Source: authors' elaboration.

cases, a positive effect on well-being and justice can be achieved only if and when combined with social objectives, such as improving (equity of) access (in particular for marginalized groups and informal settlements) or reducing poverty.

The regions with the lowest number of initiatives directly addressing the justice criterion were the East Asia Pacific, North Africa and the Arab states in the Middle East. In Asia, this trend is most likely associated with the techno-economic orientation of sustainability discourse (Westman and Castán Broto 2018). Private sector actors were least likely to consider all forms of justice and equity dimensions. Partially, this may be a result of lingering effects of traditional divisions of responsibility in urban environments: government actors are expected to be in charge of the provision of infrastructure and services, civil society of social issues that fall outside the remit of the public sphere, and the private sector of securing economic growth, technology development and innovation. Another explanation for this division is the large number of initiatives associated with smart city construction, eco-city developments and recycling economy projects. These projects are usually implemented by large corporations, architecture firms and consultancy companies that advance a particular form of technology- and capital-intense sustainability projects. While these interventions in theory need not be separated from the consideration of social objectives, in practice they often are. This tendency is associated especially with efforts to build urban environments characterized by luxury and exclusivity and that are rarely accessible to communities that suffer deprivation.

Many of the programs listed in Tables 9.1 and 9.2 were designed and implemented in a top-down, technical fashion, geared towards solving a narrowly defined environmental issue. This trend must be interpreted in the light of the appropriation of sustainability debates by neoliberal discourse. Thus, a remaining barrier to the widespread incorporation of social well-being into "sustainability" initiatives is this emphasis on technology innovation, eco-efficiency and green growth, which constructs sustainability as a fortuitous investment agenda.

Bringing government back in In terms of addressing future generations and ecosystem limits, our sample of initiatives point to missed opportunities of engaging with known strategies of planning.

For example, 13 percent of the interventions focused only on the provision of services and infrastructure, without any explicit consideration of long-term implications. Most common among these were traditional development projects that focus on addressing urgent current problems, such as programs to provide housing, water and sanitation to marginalized communities. While it is understandable that this form of initiative focuses on the urgent needs of the now, there is an opportunity for enhanced impact by considering the long-term effects of such interventions. Programs that to some extent succeed in doing this include interventions that provide infrastructure or services for deprived communities and at the same time consider aspects such as environmental impact and/or future risks. Further, as much as 39 percent of initiatives did not have a recognizable component that addressed the notion of ecosystem limits. The absence of initiatives that combine ecosystem limits or carrying capacities with a redistributive or social agenda is a cause for concern. In terms of Agyeman's (2013) three forms of decoupling, we can clearly establish that the first is prevalent, while decoupling well-being and political freedoms from consumption is much less frequent. Moreover, behind this argument there is the unanswered question of how projects are delivered and with what impacts. Justice is not only determined by intentions, but rather, as argued in Chapter 7, by a combination of drivers and effects that shape and are shaped by processes and outcomes.

In view of these limitations, we believe there are good reasons for, to paraphrase Theda Skocpol (Evans, Rueschemeyer et al. 1985), bringing government back in. While a diversity of actors is required to mobilize just sustainabilities action, there may paradoxically be a parallel need for the revitalization of planning, coordination and redistribution. For example, a shortcoming in addressing future generation and ecosystem limits is the well-known issue of short-term political targets. Many plans fail to extend beyond ten years into the future, as discussed extensively in the public policy literature and planning. While it is common for cities to adopt plans with reasonably long-term objectives (climate strategies often adopt targets for 2050, for example), we suspect that the true ability of plans and programs to address long-term issues could only be captured by monitoring implementation. Often, long-term objectives may be stated but never realized. Some regions are more vulnerable to

this limitation than others, as the ability of municipal governments to enforce policy agendas is associated with a range of political-cultural factors (effective institutions, economic and human resources, incidence of corruption etc.). However, we observe that the availability of documentation featuring the monitoring and evaluation of progress in a transparent manner is scant across all world regions. Furthermore, some targets – most notably emission reduction objectives – are systematically missed, which lends little credibility to existing plans. On the other hand, the release of publicly available progress reports can function as inspiration for both the public and other cities (for instance, the Greater London Authority publishes an online report on environmental progress in multiple sectors).

Relatedly, we found a lack of initiatives that used collective visioning to create future visions. This may be because the process of creating a vision is not reported, or because visioning exercises take place on a smaller scale and are not reported as part of broader urban planning processes. The data suggests that collaborative and communicative strategies for creating future plans are rare. To the extent that a diversity of voices is involved in shaping urban sustainability plans, this is usually realized through consultation processes, which may be reactive in nature. Alongside this trend, we notice an attachment to "future-proofing" strategies, which may fizzle out in hypes. Many local governments have published a climate change mitigation and/or adaptation plan, just as almost every local government had adopted a sustainability agenda a few years ago. There is a risk that this emphasis may lead to overlooking actual current and future needs. For example, in African urban areas the cumulative impacts of everyday hazards, such as diarrheal disease and fires in informal settlements, are at least as important as those of large future disasters, although they generally receive less attention. While impacts of climate change may exacerbate other risks, it cannot be taken for granted that adaptation is the most pressing concern. Externally imposed programs, such as donor schemes, must keep this point in mind. On the other hand, when adaptation plans address the structural drivers of vulnerability, they may deliver outcomes that address broader sustainability concerns. Further effort is required to represent a broad range of interests in visioning exercises to imagine alternative urban futures.

Another area where stronger government action is needed is in relation to redistributive efforts geared towards both present and future generations. While the discourse of intergenerational equity has become a paradigm, this has not translated into a powerful agenda to address inter- or intra-generational injustice. By far the most common interpretation of the needs of future generations is the narrow formulation of resource conservation for the sake of future consumption and consideration of direct environmental risks. Redistribution can arise beyond the boundaries of the state (as witnessed in sharing schemes, for example). Government-led initiatives traditionally hold strong legitimacy with regards to redistributive schemes. Granting agency to non-state actors must therefore not be used as an excuse for local governments to avoid playing an active role in creating a more just distribution of resources.

9.2 Moving forward with the notion of just sustainabilities

Throughout this book, we have identified a number of "suspect" theories that block the pathway towards sustainability as a strategy for freedom and justice. Each just sustainabilities principle is associated with appropriation, divergence from its original objectives and reasons for caution:

- Quantitative-economic diagnoses of quality of life have dominated policy and practice for so long that they by now seem almost inseparable from definitions and understandings of well-being (Chapter 5). These perspectives are reinforced by paradigmatic perspectives on development, progress and modernity that attach Western ideals of well-being to societies around the world. On top of this, social dimensions are routinely removed from mainstream sustainability projects.
- Proposed foresight and future-making theories discount not only the uncertainty of predictions, but also the impossibility of representing future generations (Chapter 6). Yet, environmental interventions are routinely legitimized by reference to imagined needs and wants of the people of the future.
- Universalist theories of justice are translated into watered-down forms of participation, while radical notions of recognition and redistribution are systematically neglected (Chapter 7).

- Conceptualizations of planetary boundaries create justification for rethinking environmentalism as accounting (Chapter 8). Old concerns with scarcity re-legitimize the de-politicization of environmental interventions and obliterate the social construction of needs.

Throughout this book we have also attempted to identify principles that matter to advance just sustainabilities and grounds for a sustainable politics of optimism. We formulate four responses to reappropriate the four just sustainabilities principles:

- What constitutes quality of life can only be determined by those whose lives are to be improved. Rather than constituting a full abandonment of direction, we believe that much can be learned by adhering to feminist standpoint theory (e.g., Harding 2004) and Haraway's (1988) advice to privilege the partial perspective. This is a call to reinstate sensorial experience as the point of departure of determining what a life worth living is and to begin this exploration from the perspectives least likely to be known and understood.
- While the suggestion may inspire fear, we must have the courage to abandon the need (and illusion) of control. We will never know the future. Just sustainabilities operates on a principle of trust: trust in people and trust in ecology. The principle of trust is not akin to naïve technological optimism. Instead, facilitating the enabling conditions for people to realize their own potential, and at the same time combating the marginalization of non-dominant worldviews and values, may be the most effective means of making sure that future generations have similar opportunities to do so.
- Justice and equity must stem from a radical politics of recognition, which takes a more immediate meaning when we consider ourselves living in a postcolonial world. While participation and distribution are important objectives to simultaneously consider, we believe that sustainability discourse most urgently lacks critical reflection of intersectional oppression and historically constructed systems of domination.
- We live in a world of limits only as long as we accept the dominant interpretation of scarcity suggested by a capitalist society

and associated quantitative-economic definitions of well-being. Radical abundance theory serves as a means to reimagine limits alongside the social construction of perceptions of abundance scarcity across societies.

The situated approach advocated above points to opportunities of embodying change, through politics of passionate engagement, radical openness and a politics of optimism and change. This requires questioning power where it leads to oppression and exclusion: something that, according to bell hooks, requires a permanent commitment to examine the structural drivers of difference.

While the social and environmental challenges of today are urgent, perspectives of doom and gloom are unlikely to foster either hands-on solutions or transformative change. A politics of optimism means that we accept that while some of the principles that sustain cultural hegemonies remain unassailable, we can question them with humor, art, experimentation, creativity and humility. The Sustainability Oscars are a mainstream example of how this can be achieved. The nominations celebrate artistic contributions such as David Attenborough's decade-long quest to kindle love for nature, the depiction of a girl fighting against environmental destruction in the Samoa Islands in Disney's cartoon Moana, or the effort to immerse the audience in the Amazon Rainforest in the film *Under the Canopy* (Edie Net 2017). None of these examples is particularly radical or revolutionary but they all point to depictions of a deeply emotional engagement with nature and environmental change. If techno-economic arguments remove emotions from the environment, there is an important case to be made for bringing passion for nature – in line with an ethics of care approach – to the center of the debate.

9.3 From just sustainabilities to urban transformations

Research on global sustainability (including sustainable production and use of energy) increasingly goes hand in hand with calls for social transformations, and for the production of relevant knowledge to help deliver it (Leach, Raworth et al. 2013). Transformation is understood in this context as a profound, substantial and irreversible change (Leach, Raworth et al. 2013). However, with the diffusion of this concept across scholarly realms, the term has come to signify a number of different things. Socio-technical transitions scholars refer

to the reconfiguration of social systems that consist of technological, institutional and material elements. The socio-ecological systems literature speaks of transformation in relation to interconnected processes and functions of human societies and nature. This perspective departs from systems theory and recognizes the complexity of change: coevolution of multiple processes, activities across multiple activity spheres, and social learning. In policy documents, references to transitions and transformation reflect a growing recognition of the need to accelerate sustainability action in response to the accumulating impacts of environmental destruction (EEA 2018).

Despite the focus on fundamental reconfiguration assumed in these studies, narratives of transformative capacities often draw on neoliberal accounts. This fails to bring us forward because of a paradoxical focus on incremental action, which proposes solutions fixed in efficiency, reduced resource consumption and individual (consumer) actions. It also overlooks the coproduction of values, politics and actions in practice. Progressive discourses (transformative capacities and transitions management) can also be camouflaged to advance neoliberal agendas in a different way, by building directly on a managerial discourse.

Transformation implies above all a fundamental redistribution and reconfiguration of power structures, and a restructuring of societal relations that produce inequality, oppression and deprivation. Moving from a just sustainabilities paradigm into a discussion on transformation requires direct engagement with the radical politics of such change.

One approach to link just sustainabilities with transformation is to connect the four principles with Nancy Fraser's indicators of transformative action: distribution, recognition and representation (Chapter 7). As illustrated by Table 9.3, this allows for a systematic approach to consider how strategies to achieve environmental integrity and justice can contribute to the rearrangement of agency and power in urban spaces. In particular, linking just sustainabilities with Fraser's approach to transformation brings the much-needed question of structural oppression and intersectionality to the fore of sustainability debates.

As noted at multiple points in the text, radical distribution measures are notably rare among contemporary sustainability interventions – especially those that involve *re*-distribution (see "Strategies to Realize Justice in Outcomes" in Chapter 7). At the

Table 9.3 The links between just sustainabilities and transformative action

	Distribution (socialism)	Recognition (deconstruction)	Representation (coproduction)
Well-being	Redistribution of resources for the benefit of those who are most deprived	Recognition as a strategy to identify structural oppression and associated deprivation	Coproduction as a strategy to deliver well-being
Future generations	Redistribution to address intergenerational and intra-generational equity	Recognition as a means of privileging the partial perspective and give voice to the broadest possible spectrum of interests	Coproduction as a means to deliver a just ownership of environmental and social processes now and in the future
Justice	Redistribution to achieve equity in social and environmental outcomes	Recognition as a means to empower socially, politically and culturally marginalized groups	Coproduction as a strategy to achieve justice in procedure and participation
Ecological limits	Redistribution as the chief means of addressing consumption that exceeds ecological limits	Recognition of alternative perceptions of well-being that allows for reconstructing notions of scarcity and abundance	Coproduction as a means to design public services that respect ecosystem limits

Source: authors' elaboration.

same time, there are efforts to address the four just sustainabilities criteria through distribution among initiatives that are ongoing. For example, distribution projects that address well-being for the most deprived include the provision of housing or sanitation (a classic case of distribution if the measure is based on government funding raised through taxes) (Section 5.6). Participatory budgeting exercises can also be mobilized as a means to distribute funding towards socially prioritized issues, possibly targeting groups with the largest needs. In these cases, distribution can simultaneously be used to address equity, by shifting resources towards groups in poverty or other forms of socioeconomic marginalization. We have also indicated examples of service provision strategies that incorporate environmental considerations, although the consideration of ecological limits in these cases tends not to be explicit.

In terms of recognition, we have found many strong examples that also combine concerns with well-being and justice issues (see "Strategies to Realize Recognition" in Chapter 7). These cases are often social movement-based and led by groups that work for recognition, such as waste pickers or residents of informal settlements. The right to the city movement is another illustration of efforts to build rights and inclusion for marginalized groups and at the same time deconstruct dominant notions of capitalist society. Again, parallels with ecological limits are not always apparent, but can be a strong component depending on context. For example, the Chipko movement's resistance to deforestation was at once a call for recognition of identities and ways of life threatened by economic forces, and a struggle to protect the environment. Similarly, the transition towns movement (although more clearly fixed in a Western context) represents to some extent an attempt to challenge a consumption-based society and build recognition for alternative lifestyles.

Coproduction initiatives tend to address the four just sustainabilities criteria. In initiatives aiming to improve quality of life and simultaneously securing ownership of socio-environmental programs, community-based interventions involving participation are most common. While this participation can be problematic and employed cynically as a legitimizing strategy (see "Participation and Coproduction" in Chapter 7), we advocate for further engagement with the difficulties of realizing processes that are empowering, rather than abandoning the approach. The same rationale applies

to collaborative governance schemes, which range from co-opted partnerships to truly co-created decision-making processes. Sharing economy projects are rare instances of voluntary redistribution happening on the ground, which may also involve co-ownership of interventions. Here, synergies with ecological limits emerge through programs that seek to re-distribute resources that would otherwise go to waste (food sharing and platforms for sharing used goods, for instance). Many of these cases need to be interpreted through the lens of radical incrementalism, and their ability to surreptitiously build new practices, values and lifestyles.

The re-appropriation of a co-opted discourse represents a strategy for us as committed researchers to infiltrate mainstream narratives. Given that sustainability is immensely popular with the economic and political elites (and it thrives in business management settings), it offers a point of entry for progressive agendas to reach conversations otherwise dominated by neoclassical economics principles and neoliberal jargon.

For the purposes of this book, just sustainabilities constitutes a frame of orientation to analyze the complexity and contradictions of sustainability action in urban environments. Just sustainabilities can be many things, as it emphasizes the

> nexus of theoretical compatibility between sustainability and environmental justice, including an emphasis on community-based decision making; on economic policies that account fiscally for social and environmental externalities; on reductions in all forms of pollution; on building clean, livable communities for all people; and on an overall regard for the ecological integrity of the planet. (Agyeman and Evans 2003: pp. 36–37)

Just sustainabilities do not provide a ready-made recipe for action, but instead, it adopts an expansive notion of environmental justice, which foregrounds the just practices of everyday life (Schlosberg 2013). Just sustainabilities can be a *compass* to deliver sustainability and justice in contradictory contexts of urban governance.

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