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3. Towards just nature-based solutions for cities

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APPROACHING JUST NATURE-BASED SOLUTIONS

Existing nature-based solutions (NBS) approaches often use a conceptual framework of urban nature as a universal good with multiple benefits accruing equally to all urban residents. Emerging approaches seek to address disparities in access to NBS, but more work needs to be done to disentangle the ways that NBS interact with long-standing environmental justice issues. NBS can ameliorate environmental quality, enhance climate change adaptation and resilience, and improve health and well-being. NBS can provide many benefits, but these are often contextual and existing urban landscapes have large disparities in the distribution of NBS. Environmental justice literature has made it clear that there is an uneven distribution of urban nature that disadvantages marginalized communities (Wolch et al., 2005; Heynen et al., 2006; Landry and Chakraborty, 2009; Park and Pellow, 2011). Indeed, 'where we find social inequalities by race and class, we tend to also find environmental inequalities' (Pellow, 2017), including exposure to risks and exclusion from benefits, as well as exclusion from relevant decision making. While urban NBS are generally intended to redesign human–environment relationships and are broadly linked to issues of well-being and social cohesion (Cousins, 2021), NBS also present risks related to the 'dark side of transformation' (Blythe et al., 2018).

NBS risk exacerbating injustices since they are still subject to the systemic processes that reproduce or exacerbate inequalities (Anguelovski et al., 2020). In particular, NBS can exacerbate gentrification and displace marginalized communities to vulnerable areas (Dooling, 2009; Anguelovski et al., 2019). NBS in cities can create or reinforce disparities unless there is an explicit integration of principles of equity, inclusion, reparation, and emancipation (Toxopeus et al., 2020). Working towards just NBS for cities therefore demands careful analysis of 'what, where, for whom and by whom nature becomes a solution to a problem' (Cousins, 2021). In this chapter, we outline

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theories of justice that are relevant for thinking about urban NBS, whether and how justice is integrated into dominant approaches to urban NBS in the Global North and South, and ways forward for advancing justice through urban NBS.

URBAN NBS AND THEORIES OF JUSTICE

There has been a rapid rise in attention on urban NBS in research and policy-making, but the issue of 'how to address issues of justice and socio-spatial inequality through NBS remains absent or unclear' (Cousins, 2021). Social justice refers to the fair distribution of the wealth, privileges, and opportunities of society. Classic work on environmental justice has described challenges faced by marginalized communities living and working next to unhealthy waste dumps, exposed to polluted air and water, or without access to open spaces for exercise and play. Environmental justice has been defined as:

> The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no population, due to policy or economic disempowerment, is forced to bear a disproportionate share of the negative human health or environmental impacts of pollution or environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies. (USEPA, 2015)

Furthermore, approaches to Indigenous environmental justice are based on diverse Indigenous worldviews and express reciprocal and respectful relationships where humans are understood to be part of the natural world (McGregor, 2018; Gilio-Whitaker, 2019). In the following sections, we introduce three pillars that scholars have used to analyse social and environmental justice considerations for NBS: distributional justice, procedural justice, and recognitional justice. Distributional justice in this context refers to questions around the distribution of access to nature and its benefits across society. Procedural justice relates to the integration of civil participation into decision making. Recognition justice is concerned with the recognition of different needs or values for nature related to people's intersectional identities (Fraser, 2009; Toxopeus et al., 2020).

Distributional Justice

It is by now well known that NBS and the social, psychological, economic, health, and other benefits they provide are unequally distributed. Marginalized communities disproportionately tend to be located in areas without open spaces or urban green spaces, or lack access to NBS because of user fees,

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property tax regimes, security guards, or other visible or invisible barriers. The urban hazards managed by NBS are not distributed equally due to environmental injustice, which 'generally refers to a situation in which a particular social group is disproportionately affected by environmental hazards' (Pellow, 2017). Many cities, and certainly the scholarly urban literature on NBS, recognize this gap. Urban NBS can create or exacerbate injustice (e.g. through green gentrification) or it can redress injustice (e.g. co-production of green space in marginalized neighbourhoods), but it depends on who is involved in NBS planning, who benefits from NBS, and whether existing power relations are transformed through NBS design and implementation.

Access to urban nature is an environmental justice issue; marginalized or racialized neighbourhoods have fewer and lower-quality natural spaces, which means they lack access to the benefits of urban nature (Kabisch and Van Den Bosch, 2017). It is also a governance and structural issue – persistent challenges of power and subordination and suppression of oppressed communities and groups can actively reshape even well-intentioned NBS interventions to reinforce environmental injustice and inequality (Anguelovski et al., 2020).

Substantial research on the benefits of nature in cities has outlined the ecosystem and ecological, economic development, and health and well-being benefits. Urban greening provides diverse ecosystem services in urban areas (Elmqvist et al., 2016). Food production in urban areas has been linked to strengthen social connections, recreation opportunities, and place attachment (Anguelovski et al., 2020). Urban greening projects have also been shown to be an important component of climate risk mitigation, whether it is related to stormwater flooding, reducing the heat island effect or other risks (Zolch et al. 2016; Meerow and Newell, 2017). From an economic development standpoint, green spaces and parks contribute to the desirability of real estate and eventually contribute to property value increases (Conway et al., 2010). Finally, urban green space is associated with many positive health outcomes, including psychological well-being, lower anxiety and depression, lower mortality risk, and more vitality (Triguero-Mas et al., 2017; Anguelovski et al., 2020).

The expansion of NBS in cities can redress race and class inequalities related to access to the benefits of urban nature and, in this effort, many have focused on improving distributional justice by pursuing equitable access to green space. For instance, some city agencies use a threshold value for urban planning to try to ensure that all residents are within a certain distance of green space, seeking to ensure distributional justice. However, it is not just about where NBS are in the city since proximity does not necessarily ensure accessibility, quality or safety for different population groups (Kabisch and Van Den Bosch, 2017). Extensive research has also identified how green space improvement or expansion can exacerbate ongoing gentrification processes where nearby marginalized residents are driven out and do not benefit

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(Anguelovski et al, 2018; Rigolon and Németh, 2018). Scholarship on urban nature and justice warns that urban nature initiatives can have both positive and negative impacts on the health and well-being of residents (Toxopeus et al., 2020). The justice outcomes of NBS also depend on who participates in NBS planning and implementation and who benefits from NBS development (Kotsila et al., 2020).

Procedural Justice

A long-standing concern in planning and urban sustainability from a procedural justice standpoint has been how to include those that are affected by decision making, but participation processes have often fallen short in their efforts to achieve inclusivity (Owens, 2000; Fainstein, 2011; Certomà et al., 2015). A commitment to broad participation underlies NBS principles (Cousins, 2021), which means that the expansion of NBS is an opportunity to improve procedural justice outcomes. When it comes to the engagement process around NBS planning, implementation, and maintenance, scholars have also drawn our attention to the dangers of rendering NBS technical (Li, 2007), which runs the risk of creating apolitical solutions (Cousins, 2021). Research has shown that NBS that are co-produced with residents, especially marginalized groups, will allow residents to feel recognized in the NBS and develop attachments (Anguelovski, 2014). Engagement processes will also need to overcome the challenges of creating and sustaining multi-stakeholder and multi-sectoral partnerships (Cousins, 2021), which are often touted as the key to scaling up NBS (Toxopeus et al., 2020), as demonstrated by the case studies from NBS implementation in several cities in Africa in Box 3.1.

BOX 3.1 CASE STUDY OF THE URBAN NATURAL ASSETS FOR AFRICA PROGRAMME

The Urban Natural Assets for Africa (UNA) programme, launched in 2014 (ICLEI CBC, 2019a), works with local governments towards interventions for greater urban sustainability. The programme recognizes that for interventions to be effective they must be sought collaboratively through processes of co-learning and design (ICLEI CBC, 2019b). While this understanding is not novel, the practical means to do this in a way that truly empowers communities to make their voices heard, while preventing some of the tensions that arise when decision makers and community members collaborate around environmental solutions, is less well understood. The programme sought to try different means by which to ensure less hierarchical engagements and greater universal buy-in to proposed action. By way of

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example, the UNA programme trialled the use of a version of the Minecraft computer game as a means to involve citizens in the planning of a new riverside public park in Ethiopia. Here, women, vulnerable youth, and others from the community worked alongside municipal officials, using computer software, to generate a design for the public park where participants could collectively design NBS. The programme also tested the Photovoice methodology to engage community members over the course of a waste management and river revitalization project at an informal market in Malawi (ICLEI CBC, 2020). In Kenya, the programme brought together a diverse group of stakeholders to participate in an urban tinkering walking workshop (ICLEI CBC, 2020). This workshop saw local decision makers, national officials, community members, and researchers all walk along the Auji River, stopping to discuss environmental issues and challenges encountered in the field, exploring sites where pressing social and environmental issues might be addressed through 'tinkering' in the landscape in a safe-to-fail way using NBS. These methodologies proved effective in ensuring that local community voices were heard, loud and clear. Community members played a central role in designing and implementing activities and these approaches empowered often marginalized groups through neutralizing differences and disrupting power dynamics that existed between the different stakeholders. City officials noted that inclusive methodologies towards collectively designed NBS relieve them of a major burden of service delivery by easing capacity constraints and helping to slipstream activities (ICLEI CBC, 2020). Community members expressed that co-production measures allowed for increased ownership of NBS solutions as well as improved trust in their local authorities (ICLEI CBC, 2019c).

Recognitional Justice

The justice outcomes of NBS also depend on who benefits from NBS development. While nature is often treated as an unquestionable good, recent work has started to pay closer attention to people's varying relationships with and values for nature. For instance, larger parks in high crime areas may create feelings of insecurity (Anguelovski, 2014) and exclusionary practices of white residents in green space protection can impede use by immigrants (Park and Pellow, 2011). Depending on their design and governance, NBS 'differentially address deeper roots of environmental, social and racial privilege' (Tozer et al., 2020, p. 2). Scholars and community activists are working to find ways to expand urban greening while achieving economic, environmental, and racial justice outcomes (Klein et al., 2020). NBS have the potential to address justice

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issues related to urban nature, but only if NBS initiatives are pursued with a strategy to address these concerns and take advantage of opportunities to improve justice outcomes.

INTEGRATION OF JUSTICE CONSIDERATIONS IN URBAN NBS

In this section, we examine whether and how justice is being integrated into dominant approaches to urban NBS in the Global North and South.

Understanding Local Cultural Variations in Values of and Perceived Benefits from NBS

Recent work has highlighted the fallacy of associating unambiguous environmental 'goods' or 'bads' with NBS, appreciating the role of culture, socio-economic conditions, and aspects like caste, gender, age, and status in impacting values that residents derive from NBS, and in shaping perceptions of benefits and disservices from NBS (e.g. Anguelovski, 2015). In European and North American cities, with increasing proportions of migrant communities from different parts of the world, it is essential to conduct in-depth conversations with different ethnic communities to understand their perceptions of environmental quality and of the services and disservices provided by urban green spaces and NBS (Rutt and Gulsrud, 2016). For instance, a study in Berlin found that Germans prefer grassy lawns for sunbathing and locations for sport, while many immigrants seek family spaces such as barbeque areas where they can visit parks in large family groups. Women from some traditional ethnic groups may prefer to stay away from public parks because there are no areas where they can keep a distance from strange men (Kabisch and Hasse, 2014). In recently restored lakes in Bangalore and parks in Delhi, older residents and women may prefer well-visited spaces for reasons of safety while transgender visitors and parents of special needs children seek out quieter spaces where they are free to be themselves out of the gaze of public disapproval (Paul and Nagendra, 2017; Sen and Nagendra, 2020). Prioritizing recreational benefits of NBS may lead to the dis-privileging of sacred values and livelihood benefits, especially in Global South cities (Mundoli and Nagendra, 2020).

A key factor in many of these densely settled areas is to address how NBS intersect with major needs such as livelihoods and safe spaces for women. For instance, planting trees can cause concerns about increasing crime by providing cover for gangs. In contrast, marginalized communities in shrinking cities in many parts of Europe and North America have the opposite problem and are dealing with crime hotspots in large swathes of vacant land. Community agriculture has been one way to transform these areas into active community

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spaces via a mix of bottom-up and top-down initiatives (Vásquez and Dobbs, 2020).

Designing NBS at Appropriate Spatial Scales

NBS in cities can vary from the micro, such as green walls and roofs, bioswales, potted plants in apartment balconies, to the meso, such as seen in cases of daylighting rivers and networking parks via green corridors, to the macro, for instance by redesigning entire cities as sponge cities, restoring coastal mangroves and designing greenbelts to surround cities (Shi, 2020). NBS in densely settled neighbourhoods of growing cities, such as in the Global South, typically house low- to middle-income residents and battle space constraints. They need to be innovative by exploiting rooftops, walls, drains and ditches, empty sites, and roadsides to plant green infrastructure, conduct urban gardening, and create bioswales. Small-scale solutions such as planting edible *Moringa* trees to provide shade and supplement nutrition in low-income informal settlements in Bangalore, India (Gopal et al., 2015), or using GIS to locate green infrastructure to ameliorate air pollution, flooding, and urban heat island effects in areas of high social vulnerability in Detroit, United States (Meerow and Newell, 2017), seem to have the potential to address issues of social and environmental justice at the individual, household, and community levels. In such cases, NBS can be spatially networked into multi-functional solutions suited to these neighbourhoods that have often been historically deprived of access to nature, to enable influence at larger spatial scales.

However, numerous scholars (e.g. Dooling, 2009; Anguelovski et al., 2019) point out that the application of NBS at the city scale (macro), usually implemented by governments and environmental groups, and neighbourhood scale (meso), usually implemented by governments and private developers, leads to gentrification, exacerbating marginalization by displacing vulnerable communities and households to low-income, environmentally vulnerable areas. Yet macro- and meso-scale landscape planning is essential for NBS to address large, city-wide, and even basin-wide environmental problems like flooding, air pollution, and climate change (Shi, 2020). While they cannot be ignored, macro- and meso-scale landscape issues are areas where justice issues are often very complex and difficult to address, requiring special care. Some approaches such as those suggested by Gibbons et al. (2020) focus on understanding and minimizing risks of displacement because of urban greening.

Financing NBS

There is a clear need to advance the financial case for NBS, however, this is rarely done with considerations of justice in mind. Cities typically seek to

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finance NBS by approaches such as property taxes and user fees, private–public partnerships and developmental charges (Merk et al., 2012). Such an approach almost inevitably contributes to gentrification, increasing segregation between rich and poor neighbourhoods. In contrast, multi-functional approaches that combine goals of ecosystem restoration and environmental protection with urban agriculture, fishing, and grazing, providing livelihood support, improving nutritional levels, and increasing community empowerment, can provide important outcomes, such as helping marginalized migrants integrate into the city, improving health, and building social capital.

A good example is that of the East Kolkata Wetlands, which cover over 125 km^2 and filter the Indian city of Kolkata's sewage. These wetlands are constructed on natural salt marshes and constitute an area of rich biodiversity that is protected as a wetland of national importance under the Ramsar Convention. The wetlands support intensive vegetable, coconut, and rice production and cooperative fish farms, in turn supporting many low-income families including many Indigenous tribal communities. The economic services that the wetlands offer to Kolkata are high, providing sewage cleanup, carbon sequestration, and climate resilience. However, threats to the wetland complex are severe and continued, with many wetland areas outside the Ramsar-protected locations having been acquired for real-estate development (Banerjee and Dey, 2017).

Finding new ways of thinking about how to finance NBS solutions and linking these to appropriate bottom-up institutions at meso and macro scales becomes a stark necessity. Public policy, pushed by local communities, can also play a major role. Measure A, passed by Los Angeles County in 2016, makes funding available for green infrastructure projects in low-income neighbourhoods of colour which are deprived of public green spaces. Tax increment financing is another approach, now used in multiple cities, where loans can be taken on anticipated future tax revenues and used to develop green infrastructure in marginalized neighbourhoods (Gibbons et al., 2020).

Regional and Context-Specific Diversity and Divergence in the Application of Just NBS

All of the physical and psychological benefits associated with NBS emerging from research on cities in the Global North (Jennings et al., 2012) hold true for those of the Global South. Emergent trends in the Global North of gentrification following improved NBS delivery in poor neighbourhoods and associated debates around 'just green enough' are echoed increasingly in the Global South (Wolch et al., 2014). The Global South, however, has an additional thread associated with livelihoods (Davenport et al., 2012) and infrastructure and service support in the absence of municipal engineering equivalents (Shackleton et al., 2014) that is less characteristic to those benefits recorded in

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the North. The example in Box 3.2 shows how a nature reserve in Cape Town is managed to meet multiple ends.

BOX 3.2 CASE STUDY OF THE EDITH STEPHEN'S NATURE RESERVE IN CAPE TOWN

South Africa has one of the highest Gini coefficients in the world and green space in poorer neighbourhoods come under pressure for housing or livelihood needs (Goodness and Anderson, 2013). The Edith Stephen's Nature Reserve is situated on the Cape Flats, one of the poorest regions of the city of Cape Town, and bordered by a poor and informal neighbourhood (Gabrielsson, 2018). The staff of the reserve adopt an approach of ensuring their reserve meets multiple ends and offers more than just NBS to the adjacent community. Gabrielsson (2018) attributes this effective multiplicity of use as an outcome of significant and ongoing social engagement towards the production of a 'common ground'. The reserve staff recognize the need for collaboration and community engagement in ensuring the conservation of the biodiversity and rich vegetation on their small urban nature reserve. They spend considerable time in discussion with local leaders and neighbours to ascertain their daily needs and to ensure the reserve remains relevant to these important stakeholders. Adjacent communities inadvertently benefit from NBS from the reserve such as urban cooling, drainage, and recreational opportunities, but must also be offered features to meet their immediate daily needs in Gabrielsson's 'common ground'. Outcomes of these engagements have resulted in local social workers using the reserve for private counselling sessions, community groups using the reserve office space for meetings and events, and the reserve serving as a site for training opportunities for local youth. NBS must be packaged as part of larger engagement with a diversity of stakeholders towards a co-produced solution that meets the needs of broader society.

A significant factor separating urban areas in the Global North and the Global South is the rate of urbanization, where cities in the Global South are gaining people and expanding in area at unprecedented rates (Seto et al., 2013). This rapid growth often outstrips planning capacity and these cities tend to be characterized by a high degree of informality both in their economies and settlement patterns. Unsettled land can be contested for human settlement or green-space acquisition. Kusno (2011) presents the case of slum clearing in Jakarta for the reclamation of urban green space, which was an effort pursued by government and middle-class citizens at a high price for informal dwellers. Public green space, and associated NBS and benefits, is less prevalent than

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in developed counterparts and few guidelines exist to direct planning and development with public space in mind (Thaiutsa et al., 2008; McConnachie and Shackleton, 2010). Green spaces in the Global South, in contrast to those of the Global North, tend to be managed informally, often regulated by local leaders (Goodness and Anderson, 2013; Sultana et al., 2020). At the micro scale, patterns of public and private green space associated with wealthier neighbourhoods are shared across the Global North and South (Tratalos et al., 2007; Anderson et al., 2020). NBS in poorer, and often informal, neighbourhoods tend to be green space or trees and are infrequently constructed elements such as green walls. High immigrant populations seeking work and driving the expansion of cities in the Global South bring in rural farming and associated livelihood features, which, while unplanned, do present a significant NBS feature of cities of the South (Sultana et al., 2020). Urban agricultural sites or communal gardens are important NBS for their contributions to social well-being and for their nutritional value, but are frequently lost to the pressures for additional space to settle housing.

Urban greening policies emerging from noble goals like the Sustainable Development Goals and climate change considerations may not translate well between developed and developing contexts and result in injustices or negative externalities at the local level. Most global policy on NBS seems to be driven by research in temperate environments. Sultana et al. (2020) give the case of Dhaka where immigrants' use of nature for livelihood in small-scale farming or foraging is curtailed by policy fashioned on that of the Global North that is framed for economic growth and cosmopolitan well-being, but that in fact blocks access and excludes the urban poor. A crudely applied urban resilience approach with the import of NBS and green infrastructure can be readily criticized as depoliticizing the urban with a diversity of pressing issues and injustices resolved under a banner of greening (Mabon and Shih, 2018). Song et al. (2017) stress the need to develop context-relevant NBS for cities, stressing the fact that most urban NBS research emanates from temperate cities which have very different climate and ecology, as well as vastly different economic development and lifestyles, compared to tropical cities, which creates a gap in our understanding of which species tropical city managers can select that are most suited for their needs. International non-governmental organizations promoting tree planting may inadvertently overlook space requirements or access to water that could preclude informal settlements from benefitting (Sultana et al., 2020), resulting in greening in wealthier serviced neighbourhoods furthering something akin to a green Gini coefficient of NBS.

In addition to often inappropriate policy, matched by weak capacity to govern and plan in the face of rapid change in the informal cities of the Global South, Sultana et al. (2020) cite general ennui among stakeholders where the crisis-ridden daily lives of urban dwellers faced by so many demands tend to

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rob actors of their ability to act in the interests of longer-term and less immediately relevant NBS. This is not to say that NBS does not have a place in a developing context, but rather that it should be approached perhaps in novel ways.

WAYS FORWARD FOR ADVANCING JUSTICE THROUGH URBAN NBS

Here, we describe some approaches for moving forward, building on the definition of Cousins (2021, p. 6) of just NBS as 'harnessing the power of nature and people to transform the social, political, and economic drivers of socio-spatial inequality and environmental degradation into opportunities to create progressive, cohesive, antiracist, and social-ecologically sustainable communities'.

Creating Alternative Social-Ecological Relationships

Research has shown the importance of prioritizing policies, designs, and development outcomes that seek to eradicate existing inequalities (Anguelovski et al., 2020). A restorative justice lens for NBS encourages the open acknowledgement of geographies and histories of injustice and designs for NBS that aim to redress these injustices. A way forward is to recognize and redress 'both inequalities in access and inequalities that perpetuate dominant views about what nature is and for whom nature is produced and maintained' (Tozer et al., 2020, p. 2). It is not enough to assess whether projects prevent discrimination, but also whether they ensure positive rights to the benefits of NBS (Anguelovski et al., 2020). Indeed, the very definition of well-being is challenged and revisiting this in the context of environmental justice issues would be beneficial (Liotta et al., 2020). Also crucial here is opening up opportunities for the self-determination of socio-ecological relationships (Lowitt et al., 2019).

Transformative Co-Production

Co-production is one suggested approach that offers a way to substantively include diverse perspectives in urban NBS. Co-production among policymakers and residents, especially racial and ethnic minorities, makes it more likely that residents recognize themselves in urban green space and develop attachments (Anguelovski, 2014; Tozer et al., 2020). The key here is not to assume that all urban nature is equally beneficial to everyone and to focus solely on the even distribution of nature. Research on NBS in European cities recommends broadening participation, which 'means engaging beyond the

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“traditional” power hierarchies and the “usual suspects” by bringing in different urban stakeholders, e.g. volunteers, health services, religious groups and others’ (Armstrong, 2020, p. 4). Further, as the critical environmental justice literature highlights, often problematic hierarchies of knowledge production play a major role in shaping environmental justice outcomes (Pellow, 2017). A questioning of assumptions about whose knowledge and which epistemological frameworks are given greater value must therefore also take place (Grabowski et al., 2019). Taking recognitional justice into account means finding ways to accommodate the fact that diverse people with multiple identities interact with nature differently and surfacing tradeoffs between these in NBS design, implementation, and maintenance. It also means designing NBS from the outset to redress pre-existing urban inequalities (Tozer et al., 2020), as Box 3.1 demonstrates.

Forging New Institutional and Economic Arrangements

Moving forward to enable just NBS also means striving towards policies and arrangements to support anti-racist and feminist NBS (Anguelovski et al., 2020). Political commitment to social inclusion within NBS will also help to align priorities so that inequities can be meaningfully addressed (Armstrong, 2020). For example, how best can we hear how value is expressed and realized differently? How can we highlight care, connection, cultural values, or other ways people interact with nature away from property and economic valuation (Anguelovski et al., 2020)? It is essential to open up planning, implementation, and maintenance processes so that alternative ways of experiencing and valuing nature are recognized (Anguelovski et al., 2020; Kotsila et al., 2020; Tozer et al., 2020). Additionally, urban green commons can play a critical role in the management of NBS for justice. As studies in Stockholm, Sweden, Cape Town, South Africa, and Bangalore, India, have demonstrated, managing NBS as commons rather than state or private goods can help in fostering more positive social-ecological transformations that address ecological issues combined with an appreciation of social diversity and equity (Colding et al., 2013; Nagendra, 2016).

Economy, environment, and health considerations cannot be considered in isolation and, by bringing these elements collectively into urban planning and not favouring one over another, one can avoid some common snags, especially perceptional issues of economy trumping environment and social well-being (Jennings et al., 2012). Important considerations include who is involved in processes of valuation and which values are taken into account. Valuation is a key process in the design, planning, monitoring, and evaluation of urban NBS. Moving towards just NBS requires interrogation of whose value, and value for whom, at the points in that process where valuation occurs (Cousins,

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2021). Research on NBS in European cities found that multi-actor governance is more likely to improve procedural, distributional, and recognition justice if decision making is transparent on the distribution of costs and benefits, if public control over urban NBS is maintained, and if scientific expertise is used in combination with bottom-up consultation practices (Toxopeus et al., 2020). Hybrid governance models incorporating multiple public and private actors have been popular for NBS governance in the context of limited local government resources and expertise. To realize just urban NBS using this institutional arrangement, Toxopeus et al. (2020) 'recommend urban NBS that are led through hybrid governance to be purposively designed to serve a broad public'. This still begs the question of what happens when different groups have competing expectations, or even different epistemologies – in such cases, whose 'environmentality' becomes dominant in shaping planning (Lemos and Agrawal, 2006; Graham and Ernstson, 2012)? Power is the elephant in the room here. Often ignored, power inequities play a deeply structural role in influencing outcomes when hybrid governance models are implemented.

There are a number of engagement approaches that municipalities can use to substantively engage residents in NBS development. Diverse groups from different backgrounds can be brought together in formats like future workshops, round tables, participatory planning workshops, and citizen panels to engage with each other and with local government representatives in order to enhance inclusion in NBS (Hörschelmann et al., 2019). Civil society organizations can also support citizen engagement in NBS development using approaches such as district forums, appreciative inquiries and public spirit workshops, district-based community work, and environmental education (Hörschelmann et al., 2019). Reaching marginalized groups through engagement processes can be particularly difficult, but approaches that may help include advocacy planning, where experts in planning processes are employed to assist citizens to represent their interests, and community organizing, where citizen organizations are established to enable residents to shape their city (Hörschelmann et al., 2019).

Mabon (2020) notes the importance of recognition – or close attention to *who* needs to be part of decision making – to achieving just outcomes in city planning. In cases of weak governance, local champions (individuals not recognized in traditional rule-based Global North cities under what Sultana et al. (2020, p. 5) refer to as 'the stable rules of municipal administration') are often significant players in negotiating access and use where lived understandings cannot be generalized. Consideration of context is important and due recognition of greening activities already under way or in place that are locally generated in Global South cities can counter the enactment of inappropriate policy drawn from the Global North. Similarly, identifying and matching existing

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practices and competencies and skills with resources for urban greening will result in more sustainable and context-appropriate NBS for all cities.

In conclusion, urban NBS offer the potential to pursue environmental and social justice, but only if they are explicitly designed for equity. Working towards just urban NBS means creating alternative socio-ecological relationships, fostering transformative co-production, forging new institutional and economic relationships, and respecting regional and context-specific diversity and divergence in the application of just NBS.

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