From Asking Why to Thinking How: Emerging Challenges for Urban Climate Action

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Abstract

The latest special reports from the Intergovernmental Panel on Climate Change suggest that more forceful action will be required to keep the world in a sustainable development pathway, keeping global average temperature changes under 1.5 degrees Celsius. Urban climate action is needed to step-up climate change ambitions. Empirical evidence shows that diverse actors, including local governments, private enterprises and communities, are already responding to climate change in cities and settlements. At the same time, the rapid pace of urbanisation in many regions of the world cast urban climate action as a race against time, as action is directed towards creating new urban infrastructure that avoids carbon lock-in and reduces the structural vulnerabilities to climate change. While the call for urgency is well taken, two challenges related to urban climate action are emerging. On the one hand, the current means to evaluate effectiveness of urban climate action in terms of emission reductions or reduction of risks do not capture the sometimes-imperceptible impacts of action taking place in cities and settlements. On the other hand, there is a risk that urban climate action may lead to unintended negative consequences, when the harms of climate action exceed its potential benefits.

Note: this briefing elaborates the insights from the journal article Castán Broto, V. and Westman, L.K., 2020. Ten years after Copenhagen: Reimagining climate change governance in urban areas. *Wiley Interdisciplinary Reviews: Climate Change*, 11(4), p.e643.

Introduction

The IPCC Special Report on Global Warming of 1.5°C[1] made the case for stepping up climate action to keep temperature changes under safe levels. It also outlined the need to align climate action with the requirements of the Sustainable Development Goals, adopted by the United Nations in 2015 to ensure a sustainable future for all. The C40 Cities Climate Leadership Group, a network of cities that aims to tackle climate change from within urban areas, commissioned a Summary for Urban Policy Makers that called all urban policy makers to seize the climate opportunity within the next two decades.[2] This report argued that cities can address climate change in an integrated way, can act faster than other levels of government, and open up opportunities to support innovation than can be further propagated elsewhere. Urban climate action is increasingly seen as a cornerstone of sustainable urban futures.[3] These calls have fostered social innovation for urban climate action involving local governments, private enterprises, and community groups.

These calls for urban climate action are happening simultaneously with unprecedented rates of urbanisation. Urban climate action is required to avoid carbon lock-in in rapidly growing areas that demand new infrastructures. At the same time, rapid urban growth is associated with the growth of informal settlements, in which urban communities may lack basic services. Urban climate action must deliver infrastructures that build resilience while allowing every citizen to thrive. We examine this challenge through a systematic literature review of the last decade of cities and climate change research. From the literature, we observe that the rapid pace of urbanisation casts urban climate action as a race against time. While the call for urgency is well taken, two concerns related to urban climate action are emerging. The current means to evaluate effectiveness of urban climate action in terms of aggregated emission reductions or reduction of risks do not capture the sometimes-imperceptible impacts of action taking place in cities and settlements. On the other hand, is urban climate action just or are there social groups who suffer disproportionately the negative impacts of climate action? There is a risk that urban climate action may lead to maladaptation (unintended negative consequences), when the harms of such action exceed its potential benefits.

1 IPCC (2018) *IPCC Special Report on Global Warming of 1.5 Degrees Celsius.*
2 C40 (2018) *Summary for Urban Policy Makers.*
3 Many other examples exist, including UNFCCC (2020) *Urban Climate Action Is Crucial to Bend the Emissions Curve.* Available at: https://unfccc.int/news/urban-climate-action-is-crucial-to-bend-the-emissions-curve and UN-Habitat (2020) *World Cities Report: The Value of Sustainable Urbanization.* Available at: https://unhabitat.org/wcr/

Taking stock of urban climate action

In the last decade, a wave of optimism has characterised sustainable development agendas and urban climate action in academic debates.[4] This wave of interest peaked around 2016, with the adoption of a Sustainable Development Goal on sustainable cities and communities and the presentation of the New Urban Agenda at the 2016 United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito, Ecuador.[5,6]

During these years, two approaches to thinking of climate action in urban areas came together. The first focused on the reduction of carbon emissions. The interest in climate mitigation in cities emerged in the 1990s, alongside the formation of the first international municipal networks for climate protection. In the mid-2000s, interest in climate change adaptation led to an increase in urban adaptation studies that incorporated considerations of justice, equity, informality, poverty, and gender as embedded in risk, vulnerability, and resilience agendas.[7] The cross-fertilisation of work across adaptation and mitigation research led to overlapping research between mitigation and adaptation. While trade-offs between the two areas exist, there are also important synergies that call for integration between the two areas of work in areas such as social policy, infrastructure development and nature-based solutions.

Since the adoption of the Paris Agreement for Climate Action in 2015, there have been multiple calls to evaluate global emission reductions systematically. For example, the Global Stocktake is a periodic exercise to evaluate the progress in achieving collective goals via national intended contributions. This focus on evaluation is also reflected in urban climate action, in efforts to measure the aggregate impact of both mitigation and adaptation action at the urban level. Thus, if at the beginning of the decade in 2010 we saw a wave of urban optimism, the second half has been characterised by what we could call urban pragmatism in the scholarship on cities and climate change.

4 Barnett, C., & Parnell, S. (2016). Ideas, implementation and indicators: epistemologies of the post-2015 urban agenda. *Environment and Urbanization*, 28(1), 87-98.

5 SDG11: Make cities inclusive, safe, resilient and sustainable

6 For a summary of the conference see Castán Broto, V. (2016) Here's what happened at Habitat III – the world's biggest conference on cities. *The Conversation*. Available at: https://theconversation.com/heres-what-happened-at-habitat-iii-the-worlds-biggest-conference-on-cities-66146

7 A summary of the debates at the time is presented in Satterthwaite, D. (2007). *Adapting to climate change in urban areas: The possibilities and constraints in low-and middle-income nations*. London, England: IIED.

Insights from the urban climate experience

Calls to step up efforts in urban climate action follow decades of research on cities and climate change. This literature provides important insights into how to support and foster urban climate action.

One insight relates to the factors that drive urban climate action. Since the late 1980s, city mayors, local leaders, and officials have voluntarily taken up diverse responsibilities for climate mitigation and adaptation. One motivation is the possibility of deliver co-benefits. For example, the possibility to ameliorate energy poverty among disadvantaged urban populations has long been a motivation for programmes to retrofit social housing in countries such as the UK, Germany or Slovenia. Another important factor is an abstract concept which we can call political leadership. This refers to contexts in which mayors tackle climate change as flagship projects or distinctive policies that resonate with their constituencies.[8] Specific events, such as climate-related disasters, may make those constituencies more visible. The recent spread of climate emergency declarations among local governments, for example, have demonstrated the impact of civil society action in urban climate politics.[9] More recent work has evaluated the combinations of multiple motivations for climate action.[10] For example, local governments may have to balance political will with autonomy and the availability of resources.

Another set of insights relate to the institutional arrangements that facilitate urban climate action. For example, the 2015 Sustainable Development Goals have promoted a vision of urban climate action as being inclusive, partnership-based, and equitable, even if those values are not always deployed in practice. At the same time, some strategies have become commonplace in urban climate action. Recommendations include collaborating with multiple stakeholders, integrating action across sectors, mainstreaming climate ambitions across municipal operations, cooperating across levels of government and with non-governmental actors, and focusing on long-term goals. There are, nevertheless, important challenges. For example, jurisdictions and competencies vary across countries, and it is not always possible to ensure appropriate divisions of responsibility across levels of government. Moreover, local governments and other actors may not have the capacities to maintain communication, share resources, and learn across sectoral divisions.[11]

Finally, there has been a great interest in the role of transnational municipal networks, such as the C40 and ICLEI (Local Governments for Sustainability). These networks have increased the influence of cities in international climate policy.[12] There is abundant evidence of the different functions that they play, for example, in supporting the uptake of municipal climate plans, approaches,

8 Carmin, J., Anguelovski, I., & Roberts, D. (2012). Urban climate adaptation in the Global South: Planning in an emerging policy domain. *Journal of Planning Education and Research*, 32(1), 18–32.

9 Other examples include: Dolsak, N., & Prakash, A. (2017). Join the Club: How the domestic NGO sector induces participation in the covenant of mayors program. *International Interactions*, 43(1), 26–47; Hultquist, A., Wood, R. S., & Romsdahl, R. J. (2017). The relationship between climate change policy and socioeconomic changes in the US Great Plains. *Urban Affairs Review*, 53(1), 138–174.

10 Reckien, D., Flacke, J., Olazabal, M., & Heidrich, O. (2015). The influence of drivers and barriers on urban adaptation and mitigation plans — An empirical analysis of European cities. *PLoS One*, 10(8), e0135597.

11 Aylett, A. (2013). The socio-institutional dynamics of urban climate governance: A comparative analysis of innovation and change in Durban (KZN, South Africa) and Portland (OR, USA). *Urban Studies*, 50(7), 1386–1402; Jaglin, S. (2014). Urban energy policies and the governance of multilevel issues in Cape Town. *Urban Studies*, 51(7), 1394–1414.

12 Betsill, M. M., & Bulkeley, H. (2004). Transnational networks and global environmental governance: The cities for climate protection program. *International Studies Quarterly*, 48(2), 471–493; Toly, N. J. (2008). Transnational municipal networks in climate politics: From global governance to global politics. *Globalizations*, 5(3), 341-356.

and solutions in a growing number of cities.[13] Cities that participate in these networks may benefit from access to information and technical expertise, capacity-building (e.g., training of local officials in carbon accounting), support in the formalisation of goals, and influence in advocacy processes aimed at higher levels of government.[14] However, further work suggests that such networks may impact the autonomy of local governments and their effect on reducing greenhouse emissions has been questioned.[15,16] Yet, given that the map of global climate politics is yet to be drawn, the ability of city networks to coordinate action across sectors and scales is full of possibility and promise.[17]

13 See for example: Hakelberg, L. (2014). Governance by diffusion: Transnational municipal networks and the spread of local climate strategies in Europe. *Global Environmental Politics,* 14(1), 107–129; Roger, C., Hale, T., & Andonova, L. (2017). The comparative politics of transnational climate governance. *International Interactions,* 43(1), 1–25.

14 Busch, H. (2015). Linked for action? An analysis of transnational municipal climate networks in Germany. *International Journal of Urban Sustainable Development, 7*(2), 213-231.

15 Chu, E. K. (2018a). Transnational support for urban climate adaptation: Emerging forms of agency and dependency. *Global Environmental Politics*, 18(3), 25–46

16 Bansard, J. S., Pattberg, P. H., & Widerberg, O. (2017). Cities to the rescue? Assessing the performance of transnational municipal networks in global climate governance. *International Environmental Agreements: Politics Law and Economics*, 17(2), 229–246.

17 As concluded by Gordon, D.J. (2021) *Cities on the World Stage*. Cambridge: Cambridge University Press.

A call for urgency

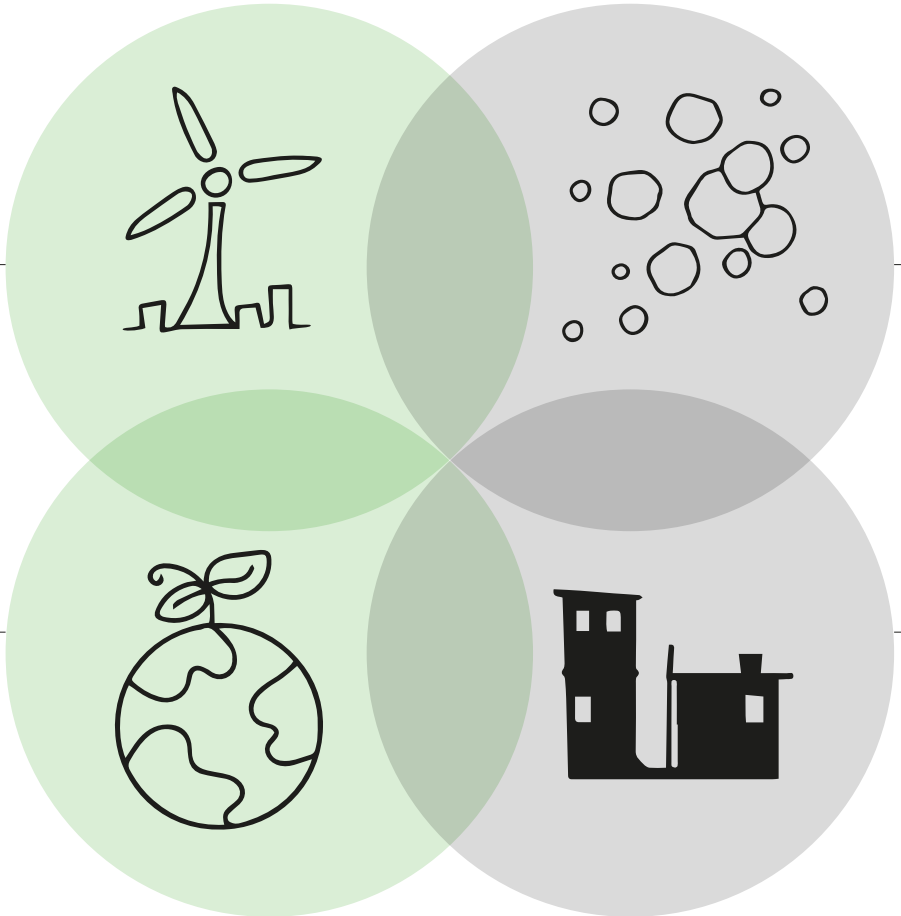
Climate action in cities and settlements is increasingly seen in terms of urgency to facilitate a just transition to low carbon, resilient cities and settlements.

Create momentum

Instruments like the Climate Emergency Declarations have moved to action local governments and other urban actors

Global VS Place-based action

A focus on aggregate carbon emissions reductions distracts from place-based action and local capacities not easily reflected in carbon budgets



Understand the climate crisis

The call for urgency reflects widespread views on the seriousness of the climate crisis and the need to apprehend the urban opportunity before it is too late

Risks of rushed action

The negative impacts of climate action on vulnerable populations may offset benefits: Policy dialogue is more important than ever

Emerging challenges for urban climate action

The critique of the limited effectiveness of transnational municipal networks is a critique that has been extended to urban climate action. How can we know that urban climate action is effective in reducing carbon emissions and reducing vulnerabilities to climate change impacts? Even comparing policy instruments to address climate change may not throw clear conclusions, as their effectiveness will depend on where and how they are implemented. This difficulty reflects the well-known challenge in public policy research of measuring and evaluating the impact of policies, especially with regards to 'wicked problems' like climate change.[18]

A vast body of research suggests that urban climate action must be participatory, attuned to bottom-up dynamics, and involve communication and collaboration across sectors, scales, administrative boundaries, and realms of knowledge.[19] However, efforts to evaluate the impact of action so far have not been conclusive. In fact, it appears that a drive to quantify the impact of urban climate action could promote larger projects where the emissions reductions with respect to a baseline can be quantified (such as retrofitting fossil fuelled energy infrastructures), rather than more innovative and inclusive projects of neighbourhood planning and autonomous energy projects whose impacts are not entirely understood. While there are tools to measure outcomes in terms of reduced carbon emissions in cities, there is a lack of standardised procedures for monitoring and measuring outcomes of adaptation.[20] Difficulties relate to the lack of a definition of what constitutes adaptation and its context-dependent nature, as well as the range of factors that cause vulnerability – many of which are not obviously related to climate change (e.g. access to housing, education, health case, or social safety nets). In the case of both mitigation and adaptation, the question is whether to direct resources towards capacity building in relation to determining effectiveness (e.g. carbon accounting, vulnerability assessments, and monitoring), or instead to support ongoing action where outcomes are unknown.

At the same time, there is increased evidence that urban inequality shapes climate action, and that urban climate action too often exacerbates inequalities. The ghost of maladaptation, where unintended consequences of the solution are worse than the problem, hangs over urban climate action. For example, disaster risk reduction strategies may lead to evictions that affect the most disadvantaged urban populations and increase their vulnerability to climate change-related disasters.[21]

An underlying concern is that urban climate policy is dominated by narrowly defined economic interests and private investment opportunities.[22] Policy based in such logics may have unintended negative impacts, by contributing to privatisation

18 Peters, B. G., Capano, G., Howlett, M., Mukherjee, I., Chou, M. H., & Ravinet, P. (2018). *Designing for policy effectiveness: Defining and understanding a concept*. Cambridge University Press.

19 See for example: Barton, J. R., Krellenberg, K., & Harris, J. M. (2015). Collaborative governance and the challenges of participatory climate change adaptation planning in Santiago de Chile. *Climate and Development*, 7(2), 175–184; Chu, E., Schenk, T., & Patterson, J. (2018). The dilemmas of citizen inclusion in urban planning and governance to enable a 1.5C climate change scenario. *Urban Planning*, 3(2), 128–140; Nguyen, T. M. P., Davidson, K., & Gleeson, B. (2018). Metropolitan strategies and climate governance: Towards new evaluative approaches. *International Journal of Urban and Regional Research*, 42(5), 934–951.

20 Berrang-Ford, L., Biesbroek, R., Ford, J.D., Lesnikowski, A., Tanabe, A., Wang, F.M., Chen, C., Hsu, A., Hellmann, J.J., Pringle, P. and Grecequet, M., 2019. Tracking global climate change adaptation among governments. *Nature Climate Change*, 9(6), pp.440-449.

21 Alvarez, M.K. and Cardenas, K., 2019. Evicting slums, 'building back better': Resiliency revanchism and disaster risk management in Manila. *International Journal of Urban and Regional Research*, 43(2), pp.227-249.

22 Long, J., & Rice, J. L. (2019). From sustainable urbanism to climate urbanism. *Urban Studies*, *56*(5), 992-1008.

and the construction of elite environments, land grabbing, and growing income inequalities.[23] For example, while expansion of green spaces in cities can reduce risks of climate impacts (e.g. by reducing heat and risks of flooding), projects aimed towards beautification, environmental clean-up, or provision of parks can also increase risks of gentrification and displacement of low-income residents.[24] At the same time, there are clear opportunities to integrate justice dimensions into local climate plans, bringing to the fore the outcomes of urban climate action (e.g., the impacts on fuel poverty or access to public transport or green space across neighbourhoods) and the processes to deliver such action (e.g., ensuring the inclusion of vulnerable groups and representatives of informal neighbourhoods).[25] The political-economic structures that maintain urban inequalities are often the same drivers that create vulnerabilities to climate impacts and produce carbon emissions.[26] For example, the political, economic, and social exclusions that result in precarity and poverty of urban residents (e.g. lack of access to basic services, employment, or legal status of residents of informal settlements or migrant workers), cause a much higher vulnerability to climate impacts of these groups and individuals.[27] Effective and just climate action thus requires addressing the underlying drivers of vulnerabilities and emissions through strategies that seek the transformation of political, social, and economic institutions.[28]

The increasing urgency of climate change calls for ready-made responses to the question of what constitutes effective urban climate action. However, there is an increasing social demand, as expressed by social movements, to target the structural drivers of vulnerability and carbon emissions. In this context, a new politics of climate change appears to emerge around climate emergency declarations, in which, increasingly, multiple publics are asking for involvement in local climate policy.[29] This opens up an opportunity for local governments and other actors – including small and medium enterprises, civil society organisations and communities – to harness the momentum within climate assemblies, climate commissions, exhibitions and social media to build collaborative partnerships for climate action at the local level. However, to do so will require developing sensitivity towards a diverse society in which identity should not be a condition to address climate change. By this, we mean that there is a need to challenge social categories of difference (be it gender, race, age, ability, sexuality, caste, religion, nationality, or legal status) that routinely exclude groups and individuals from decision making processes and direct action. Environmental justice movements have demonstrated that effective environmental action needs to engage with the struggles of civil rights movements. This is a moment of urgency and opportunity for local actors, to implement daring and innovative climate policy, but, most of all, to build multi-actor partnerships to facilitate a broad social transformation.

23 Anguelovski, I., Irazábal-Zurita, C., & Connolly, J. J. T. (2019). Grabbed urban landscapes: Socio-spatial tensions in green infrastructure planning in Medellín. *International Journal of Urban and Regional Research*, 43(1), 133–156; Anguelovski, I., Shi, L., Chu, E., et. al. (2016). Equity impacts of urban land use planning for climate adaptation: Critical perspectives from the global north and south. *Journal of Planning Education and Research*, 36(3), 333-348.

24 Anguelovski, I., 2016. From toxic sites to parks as (green) LULUs? New challenges of inequity, privilege, gentrification, and exclusion for urban environmental justice. *Journal of Planning Literature*, *31*(1), pp.23-36; Checker, M., 2011. Wiped out by the "greenwave": Environmental gentrification and the paradoxical politics of urban sustainability. *City & Society*, *23*(2), pp.210-229.

25 Schrock, G., Bassett, E. M., & Green, J. (2015). Pursuing equity and justice in a changing climate: Assessing equity in local climate and sustainability plans in US cities. *Journal of Planning Education and Research*, *35*(3), 282-295.

26 Andrew Rumbach (2017) At the roots of urban disasters: Planning and uneven geographies of risk in Kolkata, India, *Journal of Urban Affairs*, 39:6, 783-799, DOI: 10.1080/07352166.2017.1282771, p.783

27 Satterthwaite, D., Archer, D., Colenbrander, S., Dodman, D., Hardoy, J., Mitlin, D. and Patel, S., 2020. Building resilience to climate change in informal settlements. *One Earth*, *2*(2), pp.143-156; Chu, E. and Michael, K., 2019. Recognition in urban climate justice: Marginality and exclusion of migrants in Indian cities. *Environment and Urbanization*, *31*(1), pp.139-156.

28 Chu, E., Anguelovski, I., & Roberts, D. (2017). Climate adaptation as strategic urbanism: Assessing opportunities and uncertainties for equity and inclusive development in cities. *Cities*, 60, 378–387; Revi, A., Satterthwaite, D., Aragón-Durand, F. et al. (2014). Towards transformative adaptation in cities: The IPCC's fifth assessment. Environment and Urbanization, 26(1), 11–28.

29 Davies, A., Castán Broto, V., and Hugel, S. (2021) A new politics of climate change? *Environment and Governance*. Forthcoming; Ruiz-Campillo, X., Castán Broto, V., & Westman, L. (2021). Motivations and intended outcomes in local governments' declarations of climate emergency. *Politics and Governance*, 9(2), 17-28.

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