Foreword

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The acknowledgment of climate change as a challenge for an increasingly urbanizing world is rarely questioned these days, as also demonstrated by the publication of this timely volume. Not only have cities answered the calls to mitigate greenhouse gas emissions but also recognized the possible risks emerging from the changing climate and how that may impact them now and in the future. Hence there is a need to prepare. This book illustrates and explores these challenges and brings together an impressive collection of chapters to discuss the role of cities in an age where the human imprint on our world is undeniable.

As acknowledged by the Intergovernmental Panel on Climate Change (IPCC), cities are at risk of direct impacts of climate change, that is, the hazards that they are exposed to. These include increased temperatures and heat waves, changes in precipitation and extreme weather events, such as storm surges and high winds. Sea level rise is a hazard for many cities around the world as coasts have always been preferred locations for settlements. While there is a need to understand how, when and at what magnitude these changes in the climate develop over the coming decades, attention is increasingly paid to understanding the existing vulnerabilities and exposures in cities, as they equally determine the realization of climate risk. These social factors and conditions, as also acknowledged in Part I of this book, are likely to have more of an impact on the realization of climate risk in some cases than the climate hazard itself. This means that our cities and their vulnerability may play a larger role than previously thought, as social processes and development create the conditions for harm.

In addition to the direct impacts, cascading or indirect impacts are also emerging as a topic which cities need to address in their planning. Cascading impacts are often described as the knock-on effects that are experienced away from the location where the direct impacts are experienced. These effects are translated and travel through supply chains and interdependent production systems. For example, Koks suggests that cascading effects of flood risk are an additional risk globally that can be of the same order of magnitude as asset damages within and outside of the region in question (Koks 2018). These risks are likely to increase in the future, but they are currently left uncharted and

unaddressed in city planning and risk management. Migration, as addressed in Part V of this book, is another prime example of a cascading effect that can have significant impacts on cities in the future.

Addressing climate risk and building up capacity is crucial in enhancing city preparedness. In fact, as the topic of climate change has advanced as a policy issue into the urban decision-making arena, both mitigation and adaptation have begun to shape the way in which cities develop, learn, how their governance architecture and arrangements are changing and how these changes become manifested as part of decision-making in cities (Juhola 2020). These issues are also addressed in this book with a focus on showing how different movements contribute to city preparedness, how do we know when they and what types of changes are needed in the knowledge regimes of cities.

While there is evidence of cities moving ahead with preparedness, there is still a need to scrutinize empirical implementation in order to capture the full extent to which cities are prepared. For example, global surveys show that mitigation continues to be more widely adopted as a policy than adaptation within city governments. Around 66% of cities within the EU have a mitigation plan, but only 26% have an adaptation plan (Reckien et al. 2018). City governments that address both policy goals are fewer, with percentages ranging between 39% (n=350 local authorities globally) (Aylett 2015) 17% (n=885 in Europe) (Reckien et al. 2018). An additional concern is the lack of knowledge accumulated from the global South, as most of the research focus has so far centered on European or North American cities. This is mainly due to data availability issues and more efforts need to be made to ensure wider coverage.

One of the prominent features of urban climate governance is the emergence of city networks, such as C40 and the Covenant of Mayors. These networks bring cities together and play a supporting role in advancing adaptation policy. In fact, identifying lessons learnt from cities and sharing those has become one of the main features of these networks. It is clear, as also highlighted by Part II of this book that front-runners and pioneer movements have continued to play an important role in establishing best practices. Learning in urban climate governance is central and needs to encompass different types of actor groups and enable the creation of venues for shared understanding dialogue (Wolfram et al. 2019). These issues are also demonstrated in Part IV of this book, showing how knowledge and collaboration are crucial parts of advancing preparedness. However, it is worth noting that participation in networks is by no means a guarantee that adaptation is effective (Heikkinen et al. 2020). Implementation at the local level continues to be key.

In addition to learning from good examples, there is a need to pay attention to the indicators, measurements systems and benchmarking in order to ensure that progress towards climate action is indeed achieved, a point that is also highlighted in Part III of this book. There continues to be a selection and

confirmation bias that leads researchers to gravitate towards “good” cases or illustrative cases, resulting in a situation where the lessons learnt may not be relevant to the majority of the cities (van der Heijden 2019). The use of different types of benchmarking tools and metrics allows for a wider examination of how well preparedness for climate is progressing and needs to be supported, alongside monitoring and evaluation of planned adaptation itself.

The forms and types of engagement of stakeholders, as discussed in Part IV, is crucially important. A recent assessment of adaptation of 402 cities shows that cities continue to work on adapting their own activities, while paying less attention to the private sector, and even less on private citizens (Klein et al. 2018). Even if the city administration is capable of preparing for climate change in the best possible manner, there will still be adaptation measures that need to be taken by the private sector and citizens. If the public sector does not utilize its resources to steer other stakeholders, it is possible that these measures are not taken, resulting in an added burden to the public sector in terms of realized loss and damages. Thus, the engagement of stakeholders and inclusion of them in shared future visioning is necessary, as demonstrated in Part VI of this book. Similarly, Part VII discusses the ways in which a city is reimagined. The magnitude of changes necessitates re-imagined futures that allow for a meaningful quality of urban life for existing and future generations.

The urgency of climate change is further compounded by the longevity of the issue at stake. Choices made every day in terms of urban governance and planning affect citizens not only now, but for generations to come. These decision-making processes can sometimes be opaque, and it is not always clear who has the power to make decisions and who is involved in the process of decision-making and who is excluded from them. To further complicate matters, the burden of mitigation and adaptation is not shared equally as there is already evidence that climate impacts will hit hardest those who have contributed least to the emergence of the problem. Therefore, any solution to climate risk should also incorporate justice considerations into it. The emergence of justice considerations to the urban climate agenda is certainly a welcome one.

Given the enormity of the climate challenge, it is necessary also to question to what extent these climate actions, and other policy decisions, are moving cities in the right direction. Are the changes made effective and are they wide ranging enough? As has long been recognized, assessing policy change is challenging, particularly now with increasing calls for transformations and transformative change (Salomaa & Juhola 2020). Undertaking fundamental system-level changes in cities is not an easy task, nor is it easy to accumulate knowledge of that taking place either. In an analysis of C40 cities, this level of ambition of change is analysed (Heikkinen et al. 2019). The results show that mitigation and adaptation strategies do not appear to be particularly

ambitious, with most of the measures classified as incremental rather than transformational. This result is somewhat worrying as it indicates that even the front-runner cities that are active in these policy networks are not making changes that may result in enough change. Instigating change in the city scape can be difficult, especially due to path dependency and existing regulations (Juhola et al. 2020). Moreover, it is naturally difficult to discern the rate of change proposed at the strategy level from policy documents only. Thus, there is a need to accumulate empirical data on the challenges of implementation.

It is worth remembering that climate policy, neither mitigation nor adaptation, takes place in a vacuum but competes with other policy goals and aspirations that cities may have. It has been shown that adaptation competes with other strategic policy goals in the decision-making arena (Chu et al. 2017). Thus, cities are not fundamentally designed and developed for the success of climate policy, but it must enable the realization of sustainable urban life, which is simultaneously actively reducing emissions as well as safeguarding from the impacts of climate change.

Overall, this book addresses and reflects upon these challenges identified above, demonstrating not only the complexity but also the urgency of the challenges that lay ahead for the world's cities. It is of fundamental importance that the momentum to find solutions that has been building on climate policy in cities is maintained and further accelerated. The choices and decisions made in city administrations on a daily basis shape the future that enable us to limit emissions, as well as take into account potential future changes. Furthermore, the engagement of the private sector, citizens and national governments in these efforts is crucial and many cities are already doing this. The ultimate success depends on many factors and efforts of everyone involved in the age of the Anthropocene are necessary.

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