**Learning about urban mitigation solutions**

William F. Lamb, Felix Creutzig, Jan C. Minx

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**There is increasing interest in cities as potential leaders in climate change mitigation. In part this follows from the expectation that successful mitigation experiments can be transferred and translated from one urban context to another. There is already a large body of urban literature to learn from in this regard 5. However, assessing the existing research faces a number of conceptual and practical challenges. First, the literature currently lacks a comprehensive overview of which mitigation topics have been researched for what cities. Second, as urban research is heterogeneous in methods, topic and scale, and the literature is rapidly growing, the practical task of collating and reviewing studies is highly challenging. Third, questions of comparability and generalisability are central to learning about urban policies, but remain under-examined in the field. Here we propose solutions to these issues based on systematic review methods, natural language processing, and typology creation. We find that**

**: cities experience similar dynamics of urbanisation and agglomeration 1, are faced with structurally comparable decarbonisation challenges 2, and are increasingly interconnected through trade, globalisation, and social or political movements 3,4.**

As in previous IPCC reports, the 6th Assessment Cycle will include a dedicated chapter on urban systems.

- Will it be able to adequately review the case study knowledge?

- knowledge explosion, weight of literature

- acknowledged focus on wealthy cities

- difficulties of comparison, generalisability, aggregation

Scott & Storper: against ‘particularism’ (which, although useful for empirical detail, denies that “there *are* systematic regularities in urban life that are susceptible to high levels of theoretical generalization”; p12), argue that urban and social phenomena can be distinguished (the former arise from processes of agglomeration/polarization), suggest 5 contextual variables that “mold the individuality of particular cities” (econ dev, market/public goods, structures of social stratification, cultural norms/traditions, conditions of political authority and power).

* Learning about climate policies in this manner – by identifying and scaling up existing urban initiatives – would satisfy rising demands for a solutions orientation in the IPCC. Indeed there is already a substantial literature in the field to learn from 5. But to avoid a patchwork of anecdotes in assessments of the urban literature, a number of practical and conceptual challenges must be confronted.
* First, which cities do we know about?
* Second, what do we know on each city?
* Third, can we compare and generalise climate mitigation research between cities?

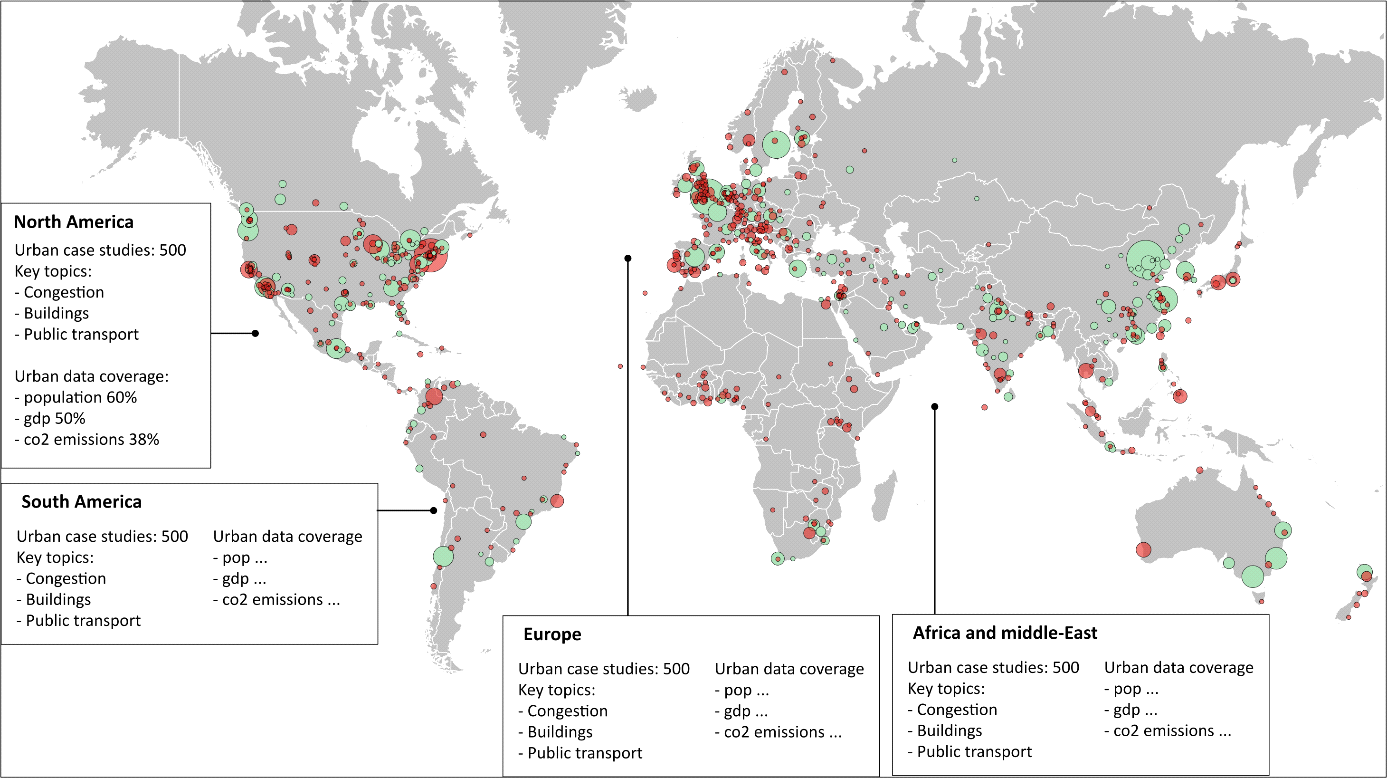
The need for case studies

* Case studies focus empirical analysis on a particular population or area, and are useful for examining causal mechanisms through diverse methodologies (e.g. process tracing, interviews).
* There are lots of case studies on cities.
* These fill an important gap in the literature: they sit between global/international and individual/household studies in terms of scale; they are relatively more concentrated in the social sciences, as the format allows for more qualitative methods.

Problems with reviewing urban case study research

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| **Problem** | **Solution** |
| **Discovery.** Over 3000 papers are published each month in the climate change field alone. Case study research risks being overlooked relative to other sub-genres in the field, as it has no shared epistemic foundation, nor a strong disciplinary background. This is especially the case in assessments (…) | **Structured literature searches.** Subject area searches  **Location name tagging.**  **What cities do we have? What do we know on each city?** |
| **Comparability.**  **Aggregating on one particular city. Aggregating to a global solution space.** | 1. Clustering  2. Systematic review methods |
| Aggregation |  |

“…accounts of wealthier cities are often generalized as claims to universal knowledge about all cities” (Robinson 2011)



Scale matters in comparison. Comparison of whole functional cities makes sense for an analysis of “economic regions, wider city functioning, urban spatial forms, intra-metropolitan governance…” (Robinson 2011). But the whole city scale is less relevant for processes that exceed a city’s extent (metabolic flows), or operate at a smaller scale (individual development projects) (Robinson 2011).