DE-US Webinar

UCCRN's *Third Assessment Report on Climate Change and Cities* ARC3.3

Maria Dombrov
UCCRN Global Coordinator
May 31, 2024

Cities and Climate Change Knowledge for All

UCCRN's mission is to provide knowledge that enables cities and their metropolitan regions to lead on climate change mitigation and adaptation, with a focus on action, equity, and sustainable development

Over **2,000 scientists, scholars, and expert practitioners** spanning a broad range of expertise

100s of low, middle, and high-income cities around the world

Formed in **2007** at the time of the 2nd C40 Summit, held in New York

UCCRN Climate Change and Cities Expert Meeting
Pontifical Catholic University, Rio de Janeiro, Brazil, 2024

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UCCRN REGIONAL HUBS

Our fifteen Regional Hubs, led by Hub Directors, facilitate the transfer of climate change knowledge into "on-the-ground" city action. The Hubs operate at the continental scale, working with relevant local, regional, and international partners.

More information at uccrn.ei.columbia.edu/

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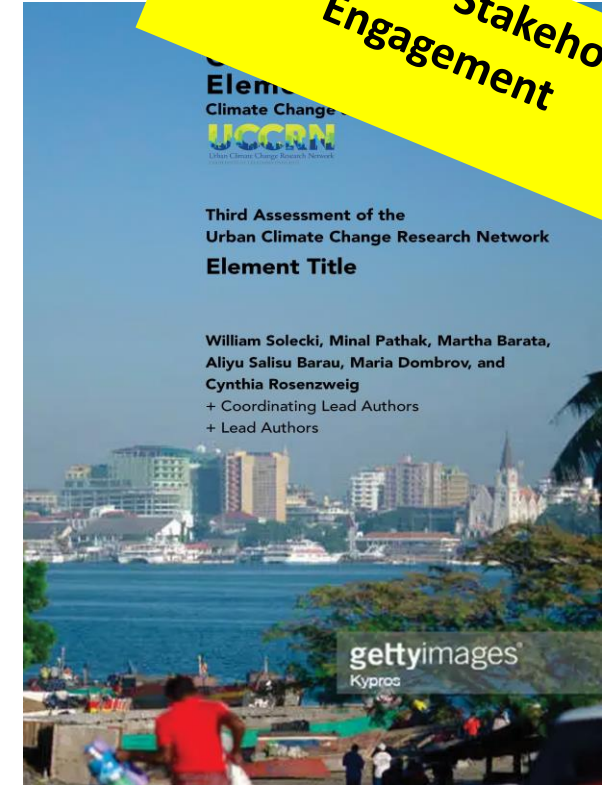
SHANGHAI
Ruishan Chen
Min Liu

TEL AVIV
Orli Ronen

Third Assessment Report on Climate Change and Cities

ARC3.3 Element Title	Estimated Digital Publication
1. Learning from COVID-19 for Climate-Ready Urban Transformation	August 2024
2. Justice for Climate-Resilient Development in Climate-Stressed Cities	September 2024
3. Architecture, Urban Design, and Planning for Climate Action	November 2024
4. Urban Climate Science: Knowledge Base for City Risk Assessments and Resilience	December 2024
5. Governance, Enabling Policy Environments, and Just Transitions	February 2025
6. Financing Climate Action	March 2025
7. Infrastructure for a Net Zero and Resilient Future for Cities	April 2025
8. Nature-Based Solutions: Enhancing Capacity to Respond to Shocks and Stresses	May 2025
9. Circular Economies for Cities	June 2025
10. Data and the Role of Technology	January 2026
11. Perception, Communication, and Behavior	January 2026
12. Health and Well-Being	January 2026

Outreach + Stakeholder Engagement

Element Title
Climate Change
UCCRN
Urban Climate Change Research Network

Third Assessment of the
Urban Climate Change Research Network
Element Title

William Solecki, Minal Pathak, Martha Barata,
Aliyu Salisu Barau, Maria Dombrov, and
Cynthia Rosenzweig
+ Coordinating Lead Authors
+ Lead Authors

gettyimages
Kypros

UCCRN
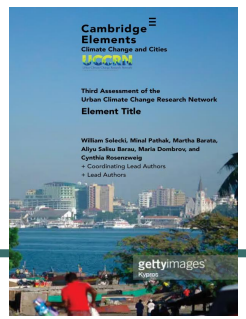Urban Climate Change Research Network

ARC 3.3
Climate Change
and Cities

CAMBRIDGE
UNIVERSITY PRESS

ARC3.3 Element Statistics and Author Demographics

- 300+ international authors

- 54% of authors identify as female

- 54% of authors are from Africa, Asia, Latin America, or Oceania
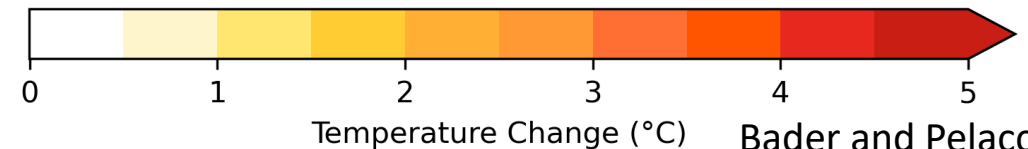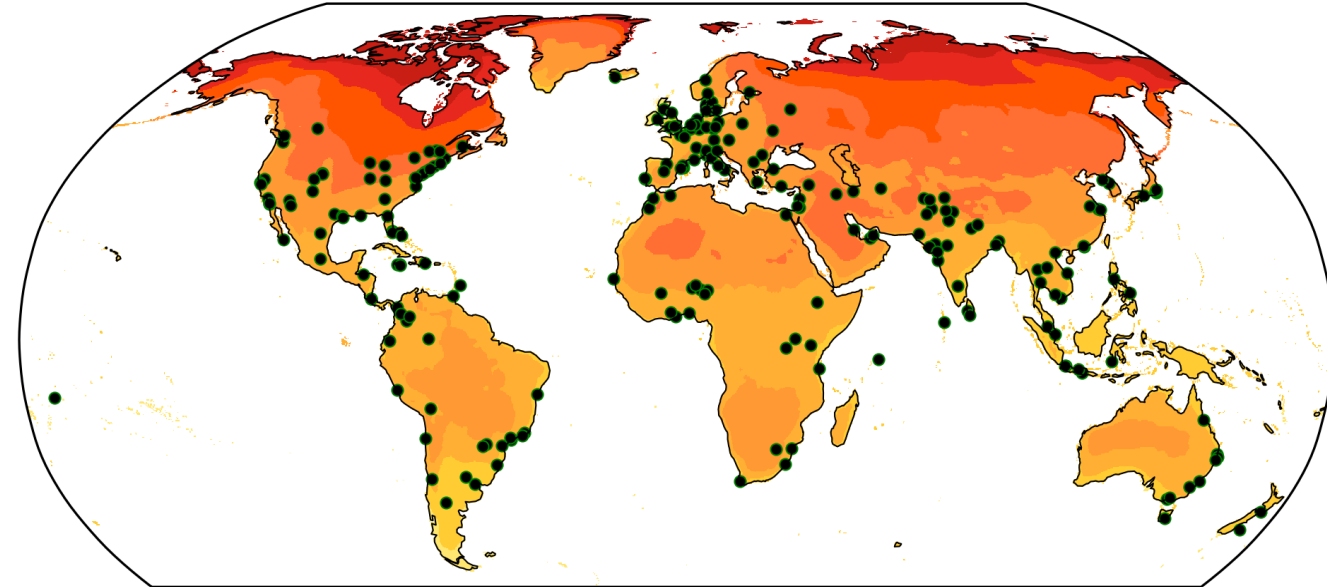
- 2,600+ references

Urban Climate Science: Knowledge Base for City Risk Assessments and Resilience
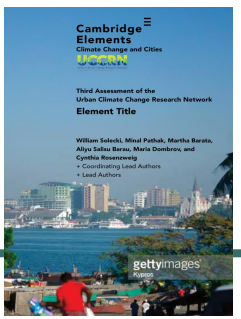
Major Findings

- Cities are projected to experience between **1.5 and 4.0 rise in temperature by the 2080s**, in addition to urban heat island effects, with greatest warming in cities in the high latitudes of the Northern Hemisphere.

- Projections for nearly **110 ARC3.3 coastal cities** show rising sea levels through the end of the century ranging from **27 to 75 cm by the 2080s**.
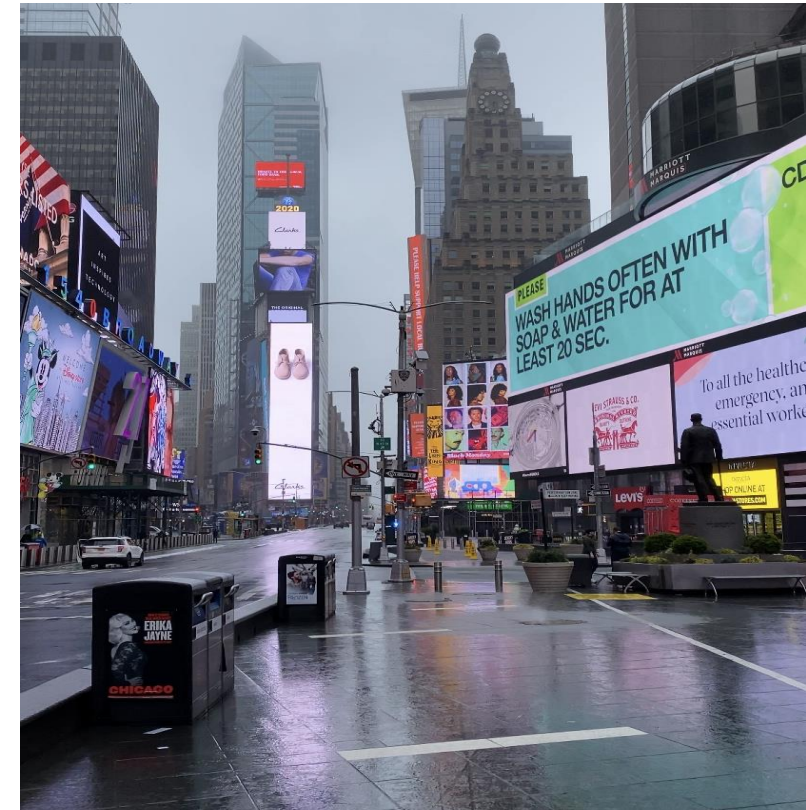
Temperature Change 2080s under SSP2-4.5

Temperature Change (°C)

Bader and Pelaccio, 2024
ARC3.3 Urban Climate Science (in preparation)

Daniel Bader, dab2145@columbia.edu; Rafiq Hamdi, rafiq.hamdi@gmail.com; Yeonjoo Kim, yeonjoo.kim@yonsei.ac.kr

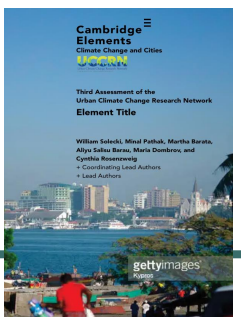# Learning from COVID-19 for Climate-Ready Urban Transformation

Major Findings

- From 2020 to 2022, the COVID-19 pandemic was urban in nature, with **95% of total reported cases in cities**, given rapidly accelerating urbanization.

- Urban density is often considered as a key indicator of social vulnerability to disasters, but there is **not strong evidence to show that urban population density played role in COVID-19 propagation** in cities.

- In regard to governance during COVID-19, some countries experienced **centralization of decision-making**, making cities dependent on national governments for rules, protocols, equipment, financing, and human resources; **other countries and cities formed multi-scale partnerships**.
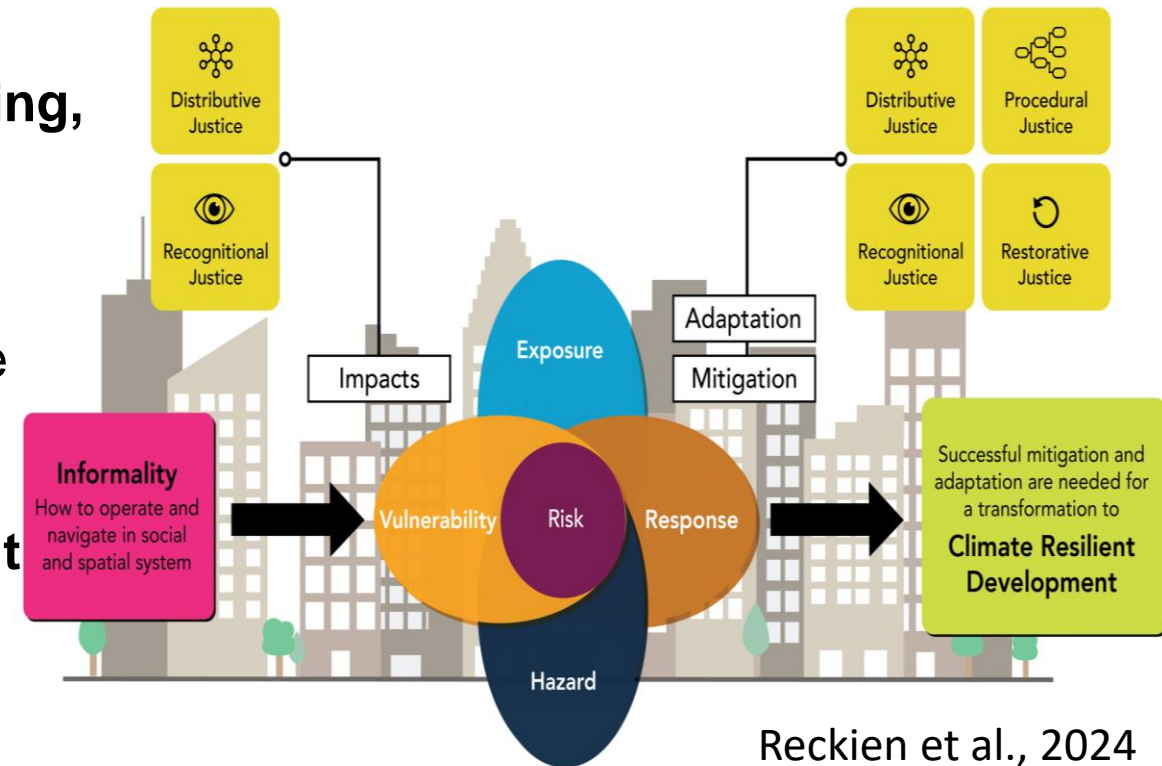
Times Square March 2020, Erik Mencos

Darshini Mahadevia, Ahmedabad University, darshini.mahadevia@ahduni.edu.in; Gian Delgado, UNAM, giandelgado@gmail.com;

Equity, Informality, and Development in Climate-Stressed Cities

ARC 3.3
Climate Change and Cities

Major Findings

- **Responses** to climate events conditioned by **inequitable distribution** of **impacts, decision-making,** and **outcomes.**

- **33% of all deaths due to disasters in cities are caused by climate-induced events** such as riverine floods, heatwaves, and landslides.

- **Most monetary damage is caused by flooding, but** most affected people are by cold waves and drought.

Reckien et al., 2024
ARC3.3 Justice (in preparation).

Diana Reckien, University of Twente, d.reckien@utwente.nl; Sirkku Juhola, University of Helsinki, sirkku.juhola@helsinki.fi

Breaking Roadblocks that Stymie City Climate Action

Climate action in cities has long been **stymied due to roadblocks** caused by **siloed governance, inefficient financing**, and **inequitable access to knowledge**.

To break this multi-faceted impasse the latest **urban physical, biophysical, and social knowledge** must be **integrated** with cutting-edge **technology.**

Ways forward are to empower equitable **multi-level flows of innovative governance**, meaningful **financing**, and **actionable knowledge** across and between **neighborhoods, nation-states,** and **global organizations.**

UCCRN
Urban Climate Change Research Network
EARTH INSTITUTE | COLUMBIA UNIVERSITY

Our mission is to provide the knowledge that enables cities and their metropolitan regions to lead on climate change mitigation and adaptation, with a focus on action, equity, and sustainable development

Third Assessment Report on Climate Change and Cities (ARC3.3) — Special Report Series

Published by ⛨ CAMBRIDGE (2023-2025)

Architecture, Urban Design, and Planning*

Circular Economies for Cities*

COVID-19, Cities, and Climate Change*

Equity, Development, and Informality*

Financing Climate Action*

Governance, Enabling Policy Environments, Just Transitions*

Interdependent Infrastructure Systems*

Nature-based Solutions*

Urban Climate Science*

Data and the Role of Technology**

Health and Climate Change**

Perception, Communication, and Behavior**

*in preparation
**in development

About UCCRN

Over **2,000** scientists, scholars, and expert practitioners spanning a broad range of expertise

Members located in more than **150** developed and developing cities

15 Hubs around the world that conduct climate action research at the regional level

Formed in **2007** during the C40 Summit in New York

Visit **uccrn.ei.columbia.edu** to download the *Second Assessment Report on Climate Change and Cities*

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