



Towards the Second UCCRN Assessment Report on Climate Change and Cities (ARC3-2)

PEP19

Durban, South Africa

May 22, 2014

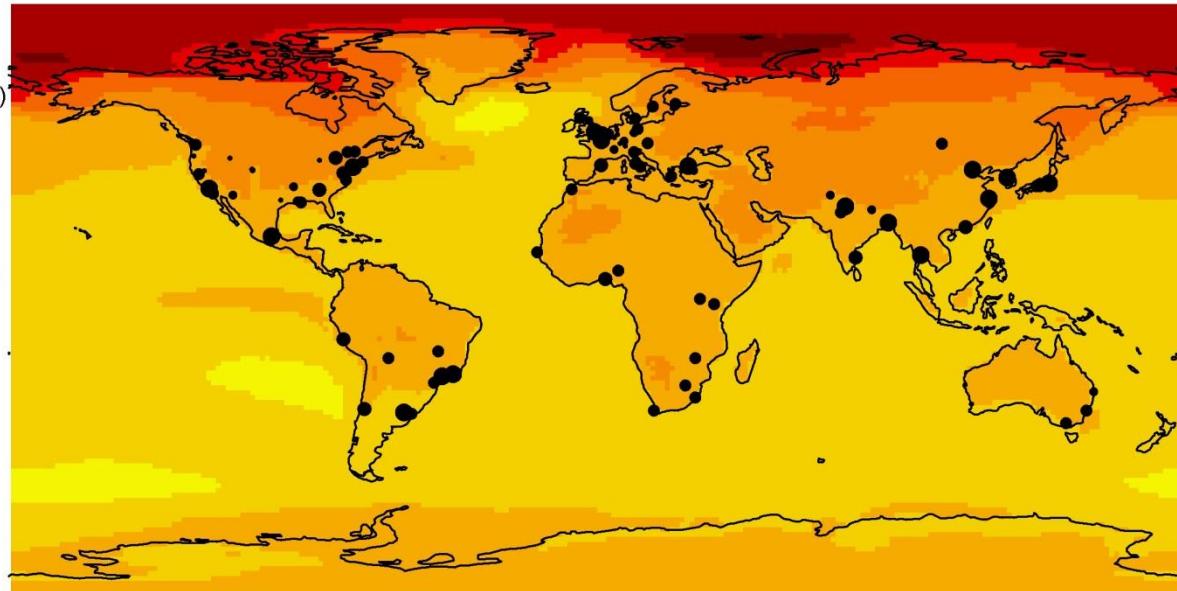
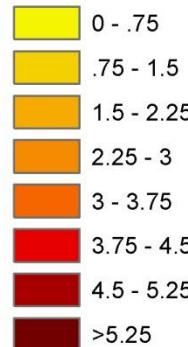
Temperature Change (2050s) and UCCRN Member Cities

City Size

Population of Metro Area

- Small (<500,000)
- Intermediate (500,000-1,000,000)
- Big (1,000,000-5,000,000)
- Large (5,000,000-10,000,000)
- Mega (>10,000,000)

Temperature Change (Degrees C)



UCCRN Member Cities

<u>Africa</u>	<u>Asia</u>	<u>Australia/Oceania</u>	<u>Europe</u>	<u>North America</u>	<u>South America</u>
Abuja	Bangkok	Sargodha	Gold Coast	Aalborg	Mexico City
Cape Town	Beijing	Seoul	Melbourne	Atlanta	Montreal
Dakar	Chennai	Shanghai	Parkville	Aurora	Mountain View
Durban	Delhi	Tokyo	Sydney	Baton Rouge	New Haven
Harare	Dhaka	Ulaanbaatar	Townsville	Boston	New Orleans
Johannesburg	Eskisehir		Wellington	Boulder	New York
Kampala	Hong Kong		Wembley	Cambridge	Norfolk
Nairobi	Jaipur			College Park	North Little Rock
Rabat	Kathmandu			College Station	Nyack
Setif	Kyoto			East Lansing	Ottawa
Sfax	Nagoya			Englewood	Reno
Lagos	Ningbo			Eugene	Sacramento
				Guelph	Saint Catherines
				Hauppauge	San Diego
				Idaho Falls	Seattle
				Kingston	Toronto
				Los Altos	Tucson
				Los Angeles	Washington DC
				Martinez	Yardley

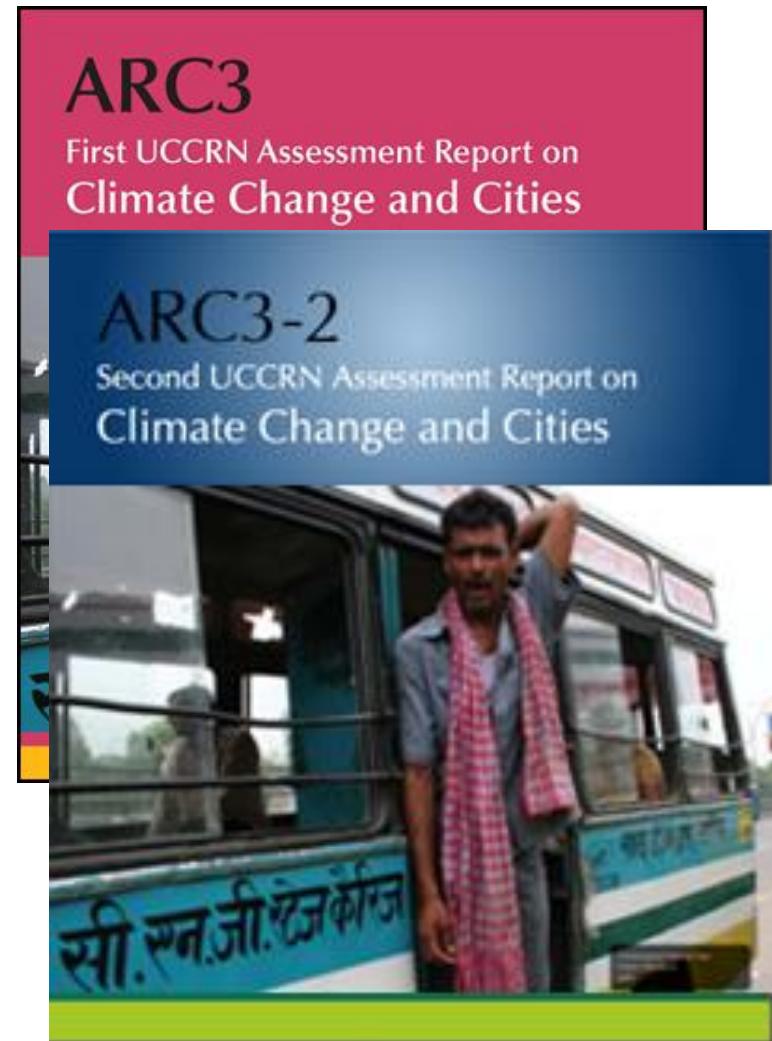
*colors represent mean annual temperature change for a mid-range scenario (RCP4.5) from CMIP5 models (2040-2069 average minus 1971-2000 average).

(35 CMIP5 models)

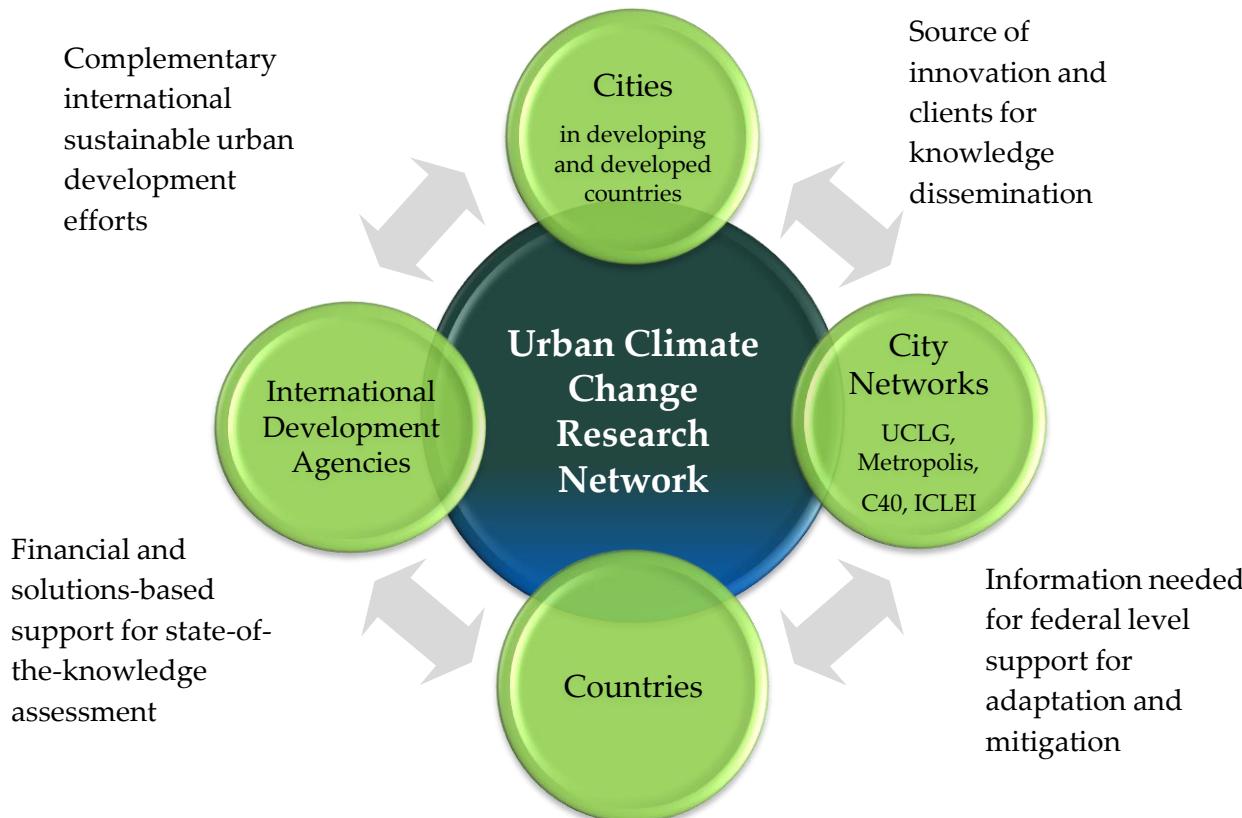
Urban Climate Change Research Network (UCCRN)

UCCRN Mission: *Enable cities to fulfill their climate change leadership potential in both mitigation and adaptation*

- A consortium of over **500+ scholars and practitioners** from over 100 developed and developing cities around the world
- First major publication – *First UCCRN Assessment Report on Climate Change and Cities (ARC3)*, a **four-year** effort by **100 authors** from **50+ cities** around the world
- In the process of writing the *Second UCCRN Assessment Report on Climate Change and Cities (ARC3-2)*, scheduled to be published by end of 2015

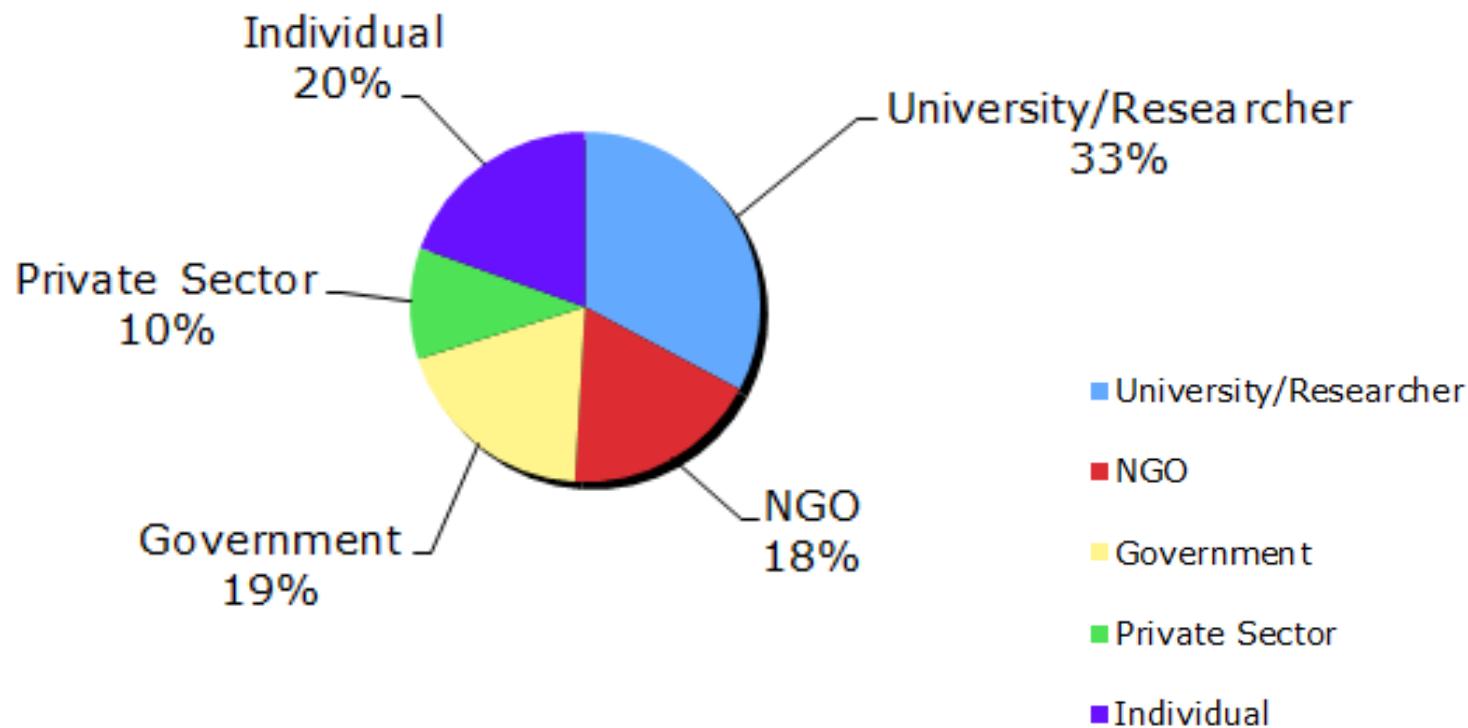


Catalytic Role of the Urban Climate Change Research Network



UCCRN Members

Total Members: 500+



UCCRN ARC3-2 Steering Group



FIRST ARC3 PROCESS

ARC3

First UCCRN Assessment Report on
Climate Change and Cities



Scoping Activity content reflects needs assessment feedback from city actors in developing and developed cities

Assessment Phase Author teams

Multi-Stage Review

Expert/Peer Three rounds, 18 experts

Institutions Cities Alliance, World Bank, UN HABITAT, and UNEP

Publisher Expert reviewers by Cambridge University Press

ARC3 Release and Outreach

Published by Cambridge University Press in June, 2011

Worldwide Launches – Bonn, Sao Paulo, Hyderabad, Jakarta, Rio de Janeiro, Naples

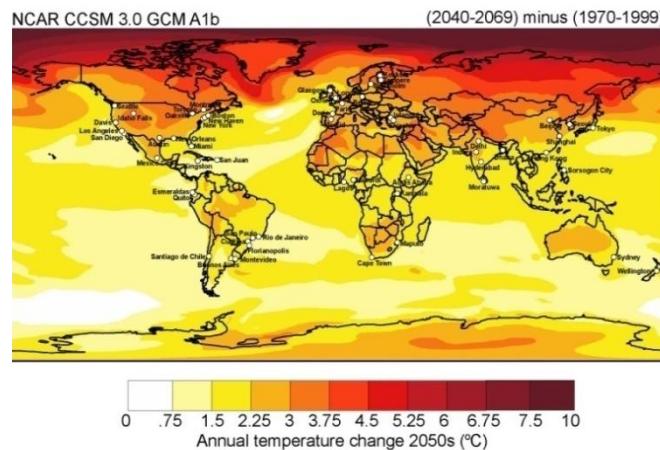
ARC3 Goal

To establish on-going, city-centered state-of-knowledge reports to urban decision-makers and help build capacity for action

~100 lead and contributing authors from over 50 cities

BOTH
adaptation and mitigation specialists

INTERDISCIPLINARY
climate scientists, geographers, planners, engineers, policy experts



Source: Center for Climate Systems Research
Columbia University 2009

ARC3-2 PROCESS

ARC3-2



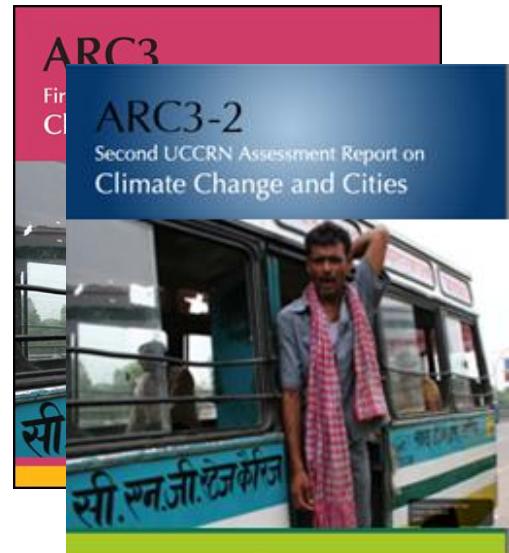
Second UCCRN Assessment Report on
Climate Change and Cities

Scoping

- Needs-assessment input from city actors and experts in developing and developed cities
- UCCRN ARC3-2 Information Needs Survey
- Scoping sessions at
 - World Delta Summit, Jakarta – 11/2011
 - American Association for Geographers Annual Meeting, New York – 2/2012)
 - ICLEI Resilient Cities World Congress, Bonn – 5/2012
 - C40 Large Cities Climate Summit during Rio+20, Rio de Janeiro – 6/2012
 - 6th World Urban Forum, Naples – 9/2012
 - ICLEI Resilient Cities World Congress, Bonn – 5/2013
- Launch of **ARC3-2** Process at World Urban Forum 6, Naples
- **ARC3-2** Initiating Workshop – 9/2013 in NYC
- Writing of **ARC3-2** in progress - ~130 authors
- Scheduled to be published by end of 2015

Expanded set of Lead and Contributing Authors

- Developing and developed cities
- Both adaptation and mitigation specialists
- Interdisciplinary: Climate scientists, geographers, planners, engineers, designers, policy experts . . .





URBAN CLIMATE CHANGE RESEARCH NETWORK

UCCRN ARC3-2 Co-Editors

Cynthia Rosenzweig, Co-Director, UCCRN

NASA Goddard Institute for Space Studies

William D. Solecki , Co-Director, UCCRN

CUNY Institute for Sustainable Cities, Hunter-CUNY

Shagun Mehrotra , Co-Director, UCCRN

Milano at the New School University

Shobhakar Dhakal

Asian Institute of Technology

Paty Romero-Lankao

National Center for Atmospheric Research

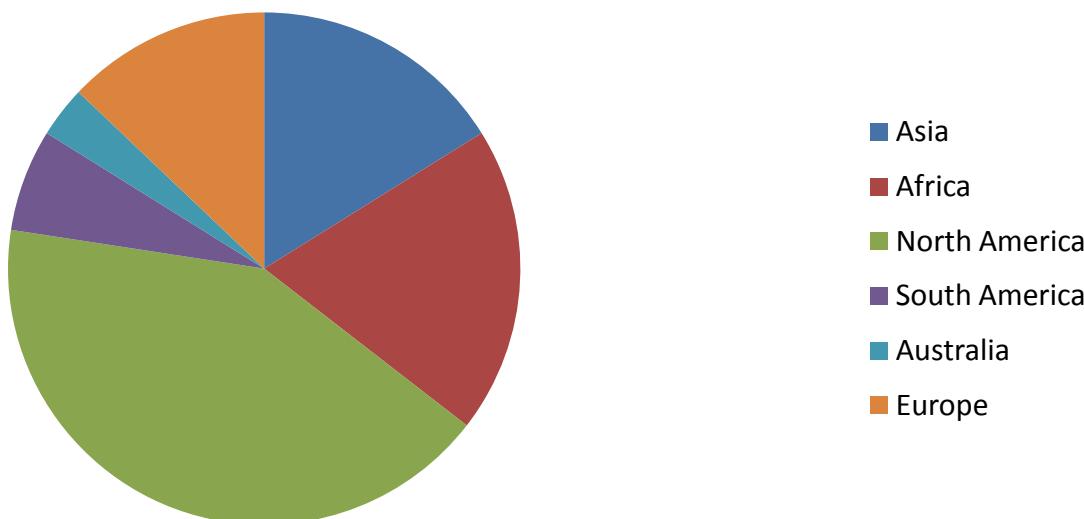
UCCRN Program Manager

Somayya Ali

Earth Institute, Columbia University

Cities Represented by ARC3-2 Survey Responses as of 3/24/2014

Asia	Africa	North America	South America	Australia	Europe		
Beijing	Banjul	Denver	Rio de Janeiro	Melbourne	Barcelona		
Colombo	Cairo	Cleveland	Rio de Janeiro		Brčko		
Bangkok	Lagos	DC			Budapest		
Tel Aviv	Tevragh-Zeina	Boston			Oxford		
Dubai	Harare	NYC				Developed country cities	
	Cape Town	Austin				18	58%
		Detroit				Developing country cities	
		Detroit				13	42%
		DC					
		Chicago					
		Portland					
		Ottawa					
		Ottawa					
Totals	5	6	13	2	1	4	31



- Asia
- Africa
- North America
- South America
- Australia
- Europe

ARC3 and ARC3-2 Information Needs Survey

Top 4 topics of interest

#1

- Mitigation and adaptation: barriers, bridges, and co-benefits

#2

- Urban planning and design

#3

- Disasters and risk

#4

- Economics, finance, and private sector

Topic	# of times selected
Mitigation and adaptation: barriers, bridges, and co-benefits	20
Urban planning and design	18
Disasters and risk	15
Economics, finance, and private sector	13
Urban climate science	11
Urban energy	10
Equity and environmental justice	9
Urban water, wastewater, and sanitation	9
Urban solid waste	3
Urban transportation	0
Housing and informal settlements	0
Urban Health	0
Urban ecology, biodiversity, and ecosystem services	0
Food Systems	0
Coastal Zones	0
Governance and Policy	0

Down-scaled projections of impact, including economic impact

More accurate previsions about climate change impacts on the mean sea level and extreme events.

Information about conducting low cost research and studies for cities in developing countries.

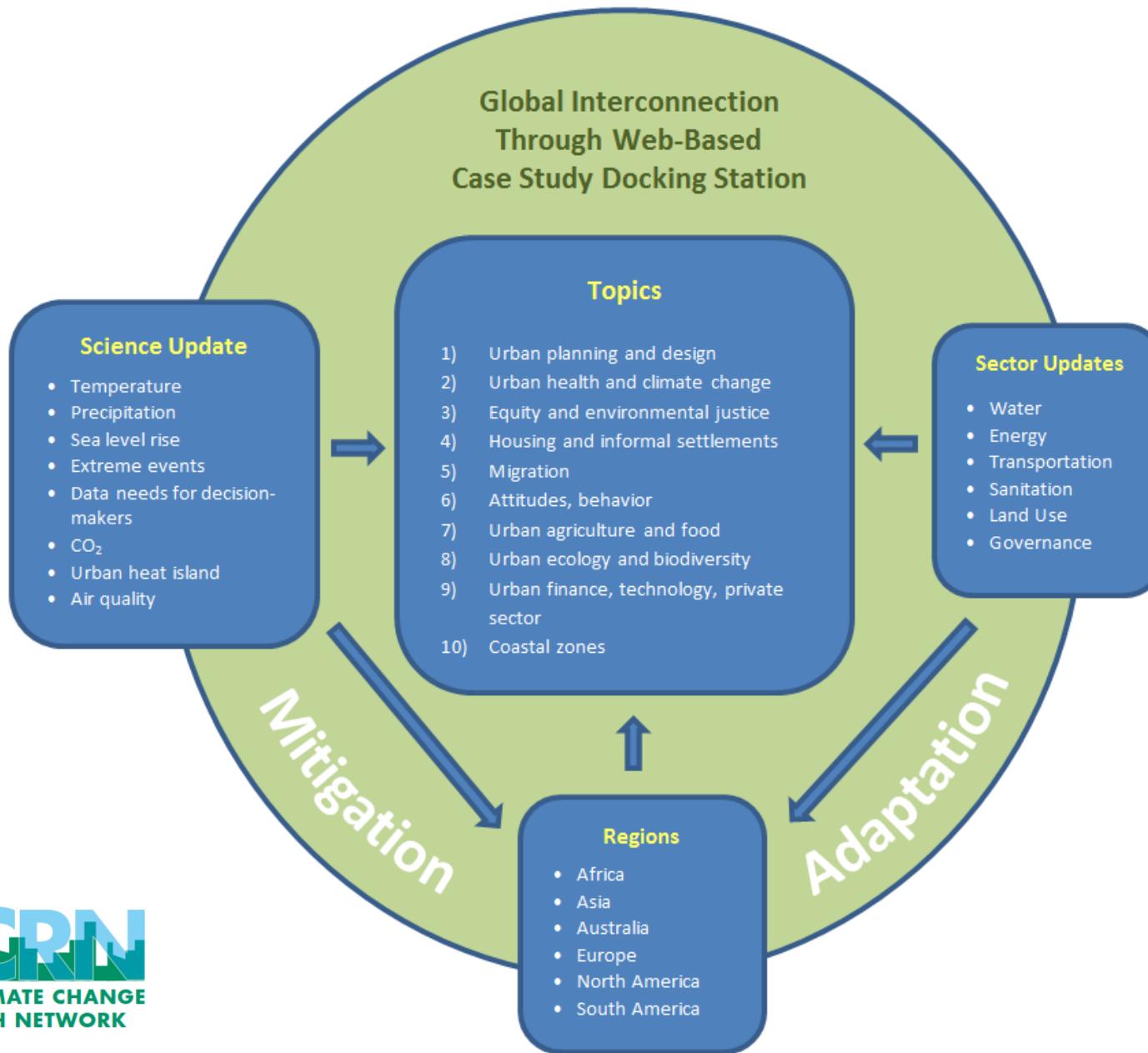
If you could ask experts for information about climate change and cities, what would you most want to know? *selected responses

What are the actions with the biggest results

The vulnerability of cities to climate change impacts

The farther we get into incorporating climate resiliency into city services and practices, the more specific the questions are for experts.

ARC3-2 Framing Structure



ARC3-2 Outline

Chapter 1 – Introduction

Section I: Cross-Cutting Themes for Climate Change and Sustainable Development

Chapter 2 – Urban Planning and Design

Chapter 3 – Mitigation and Adaptation: Barriers, Bridges, and Co-Benefits

Chapter 4 – Equity and Environmental Justice

Chapter 5 – Private Sector, Economics, and Finance

Section II: Climate Science and Disaster Risk

Chapter 6 – Urban Climate Science

Chapter 7 – Disasters and Risk

Section III: Urban Sectors and Systems

Chapter 8 – Urban Energy

Chapter 9 – Water, Wastewater, and Sanitation

Chapter 10 – Urban Solid Waste Management

Chapter 11 – Urban Transportation

Chapter 12 – Housing and Informal Settlements

Chapter 13 – Urban Health

Section IV: Urban Ecosystems, Food, and Coastal Zones

Chapter 14 – Urban Ecology, Biodiversity, and Ecosystem Services

Chapter 15 – Urban Areas in Coastal Zones

Section V: Governance and Policy

Chapter 16 – Governing Carbon and Climate in Cities

Conclusions and Moving Forward

Appendix 1 – UCCRN Case Study Docking Station

Appendix 2 – List of Authors and Reviewers

Highlights on:

- Urban Demographics
- Urban Food Systems
- Sustainable Production and Consumption
- Attitudes, Perception, and Behavior
- Information and Communications Technology
- Transformation

+ Summary for Urban Decision-Makers

ARC3-2 Case Study Docking Station

- 1 • Built upon 46 cases from ARC 3.1
- 2 • Designed to be useful for both research and practice
- 3 • Develop a robust methodology allowing for cross-case comparisons, using a range of methods
- 4 • Build an extractable, open-source database based upon peer-validated data inputs

Review Process

- Editor Review
- Expert Review
- Stakeholder Review
- Institutional Review

ARC3-2 Timeline

January 15, 2014: First-Order Drafts due

First Review: Editors, Stakeholders, or Institutions

April 2014: ARC3-2 Authors Meeting at World Urban Forum 7 in Medellin, Colombia

May 2014: ARC3-2 Authors Meeting at ICLEI Resilient Cities in Bonn, Germany

June 2014: ARC3-2 Authors Meeting at Natureparif Congress in Paris, France

June 2014: Second-Order Drafts due

September 2014: ARC3-2 Authors Midterm Workshop in London

Second Review: Editors, Stakeholders, or Institutions

January 2015: Third-Order Drafts due

Third Review: Editors, Stakeholders, or Institutions

June 2015: Final Drafts due

August 2015 (TBD): Manuscript submitted to publisher

December 2015: Publication - in time for COP21 in Paris (Likely publisher: Cambridge University Press)

June 2016: Launch at Habitat III

ARC3-2 Sponsors



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