

The Summary for Urban Policymakers of the IPCC Sixth Assessment Report (AR6)

What the Latest Science on Impacts, Adaptation and Vulnerability Means for Cities and Urban Areas

Debra Roberts

Co-Chair, IPCC Working Group II

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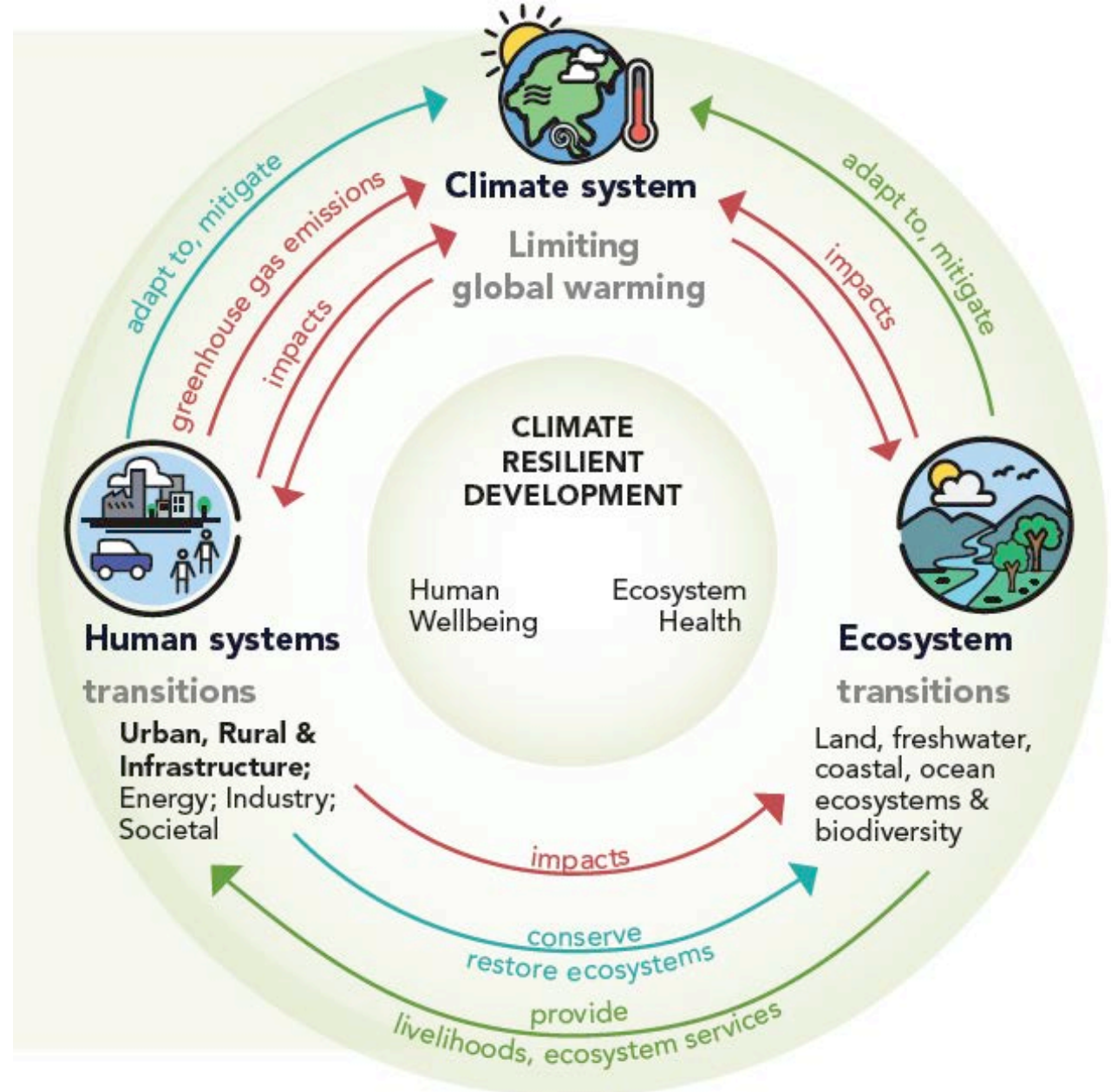
THE AR6 SUMMARY FOR URBAN POLICYMAKERS SERIES
VOLUME II

WHAT THE LATEST
SCIENCE ON IMPACTS,
ADAPTATION AND
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MEANS FOR CITIES
AND URBAN AREAS



Everything is connected in an urban world. In a world with over 4 billion urban residents; cities and towns, the economy, and human societies are strongly coupled with the climate system and ecosystems. A change in one system impacts the others.

Figure 1: Climate, ecosystems and human society are coupled systems key to climate resilient development



Rapid urbanisation, changing land use, demographic shifts, growing inequality and unsustainable consumption have driven greenhouse gas emissions, ecosystem degradation and biodiversity loss.

In all parts of the world, these trends pose an existential challenge to our societies, economies and urban areas.

We need systemic and accelerated climate action by everyone to address this. Urban areas provide an important opportunity to do so.

Mumbai, India

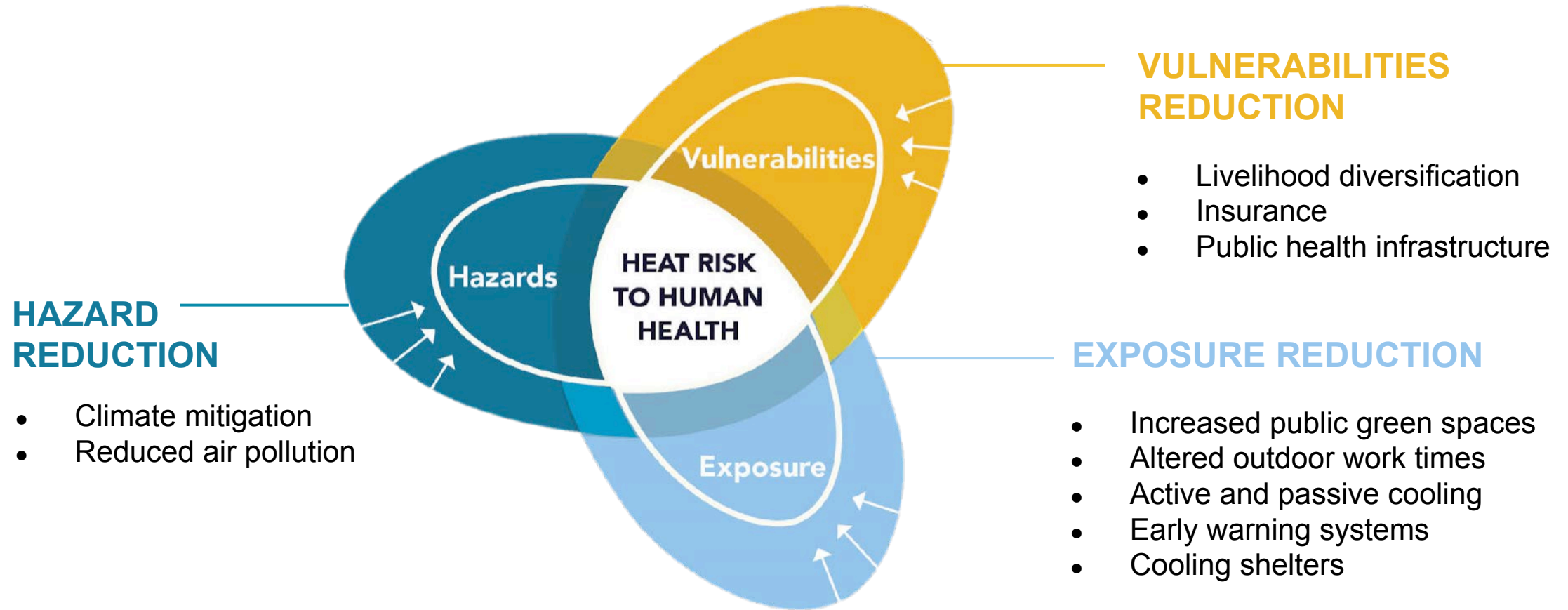


The risks and impacts of climate change are clear. Even at current global warming levels, urban areas are experiencing significant impacts from climate change. Some major cities have experienced mean local warming of beyond 1.5°C.



Climate risk is exacerbated in urban areas by the interaction of **climate hazards**; **exposure** due to densely populated cities, inadequate buildings and basic services, and poor infrastructure; and underlying **vulnerability**, urban poverty, inequality and uneven adaptive capacities.

Figure 2: Risk is a function of hazards, exposures, vulnerabilities, and adaptive capacities; all of which are mediated by mitigation and adaptation responses. Figure illustrates an example of heat risk.



Climate impacts are felt disproportionately in socio-economically marginalised communities.

Mozambique



The nature of climate-related risks is changing in an urbanising world.

They are becoming increasingly systemic, simultaneous, and affect multiple locations across different timescales, leading to cascading and compounding impacts.

Figure 3: Climate impacts cascade through infrastructure across sectors

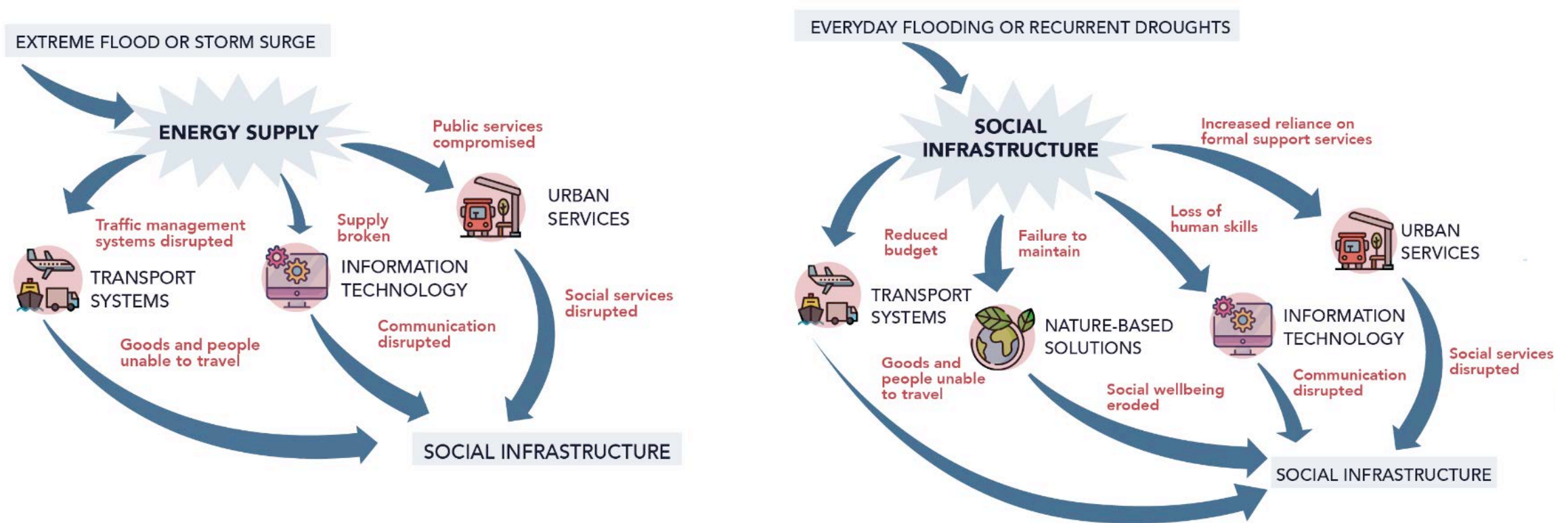
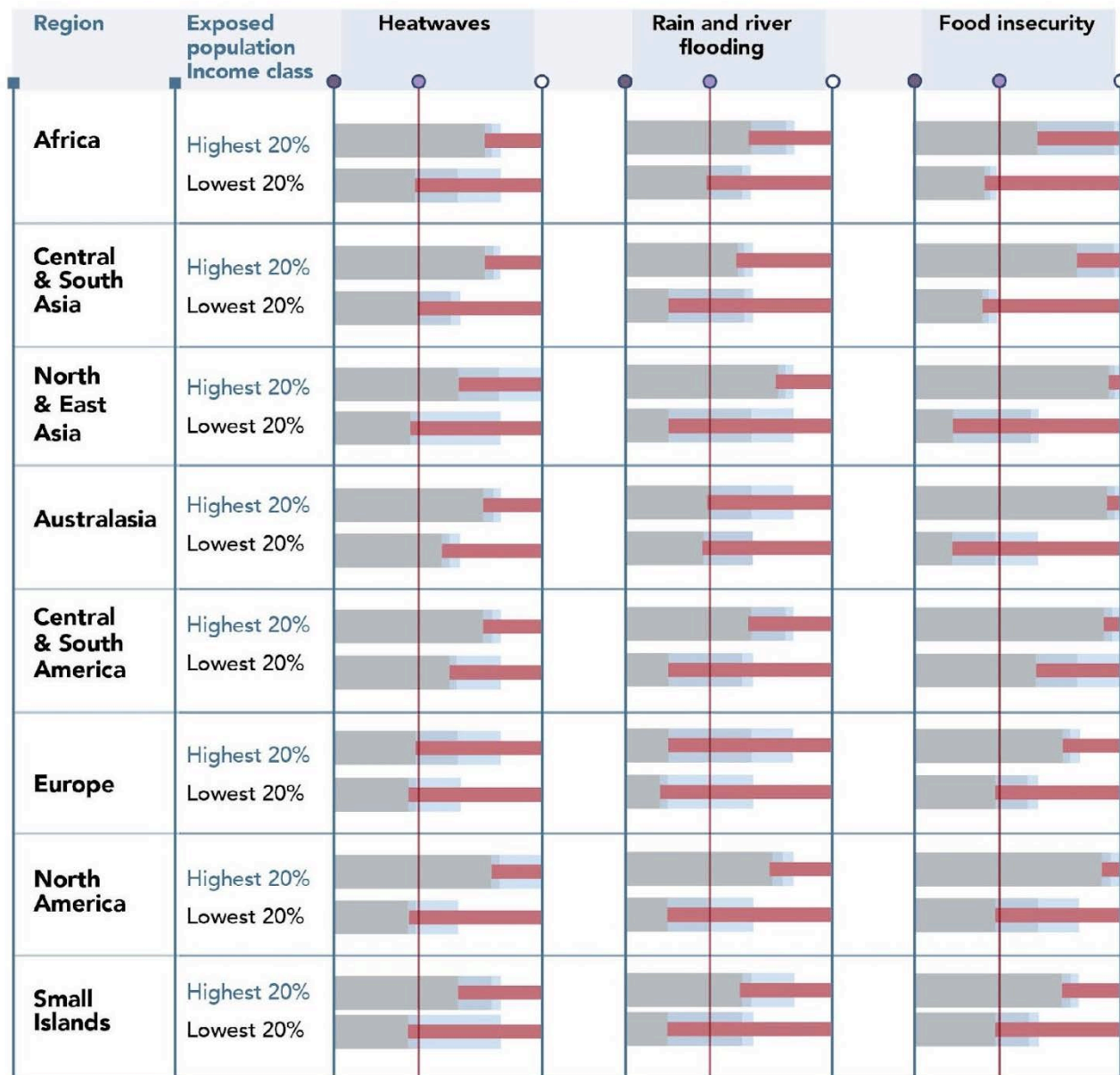


Figure 4: Climate impacts cascade through infrastructure across sectors



Urban adaptation is happening, but significant gaps remain. Over 100 cities of varying sizes and locations have developed climate adaptation plans; ~170 nations include adaptation in their policies and planning processes.

Even if all planned adaptation was implemented, it would be insufficient to address all risks faced by urban areas.

Adaptation actions



The urban adaptation gap
(residual risk after current adaptation actions)

Urban adaptation options reduce risk but unevenly and inadequately. There are limits to adaptation in and around urban areas, particularly as warming increases.

Any further delay in concerted global action on urban adaptation will miss the rapidly closing window to secure a liveable future for all.

Seoul, South Korea

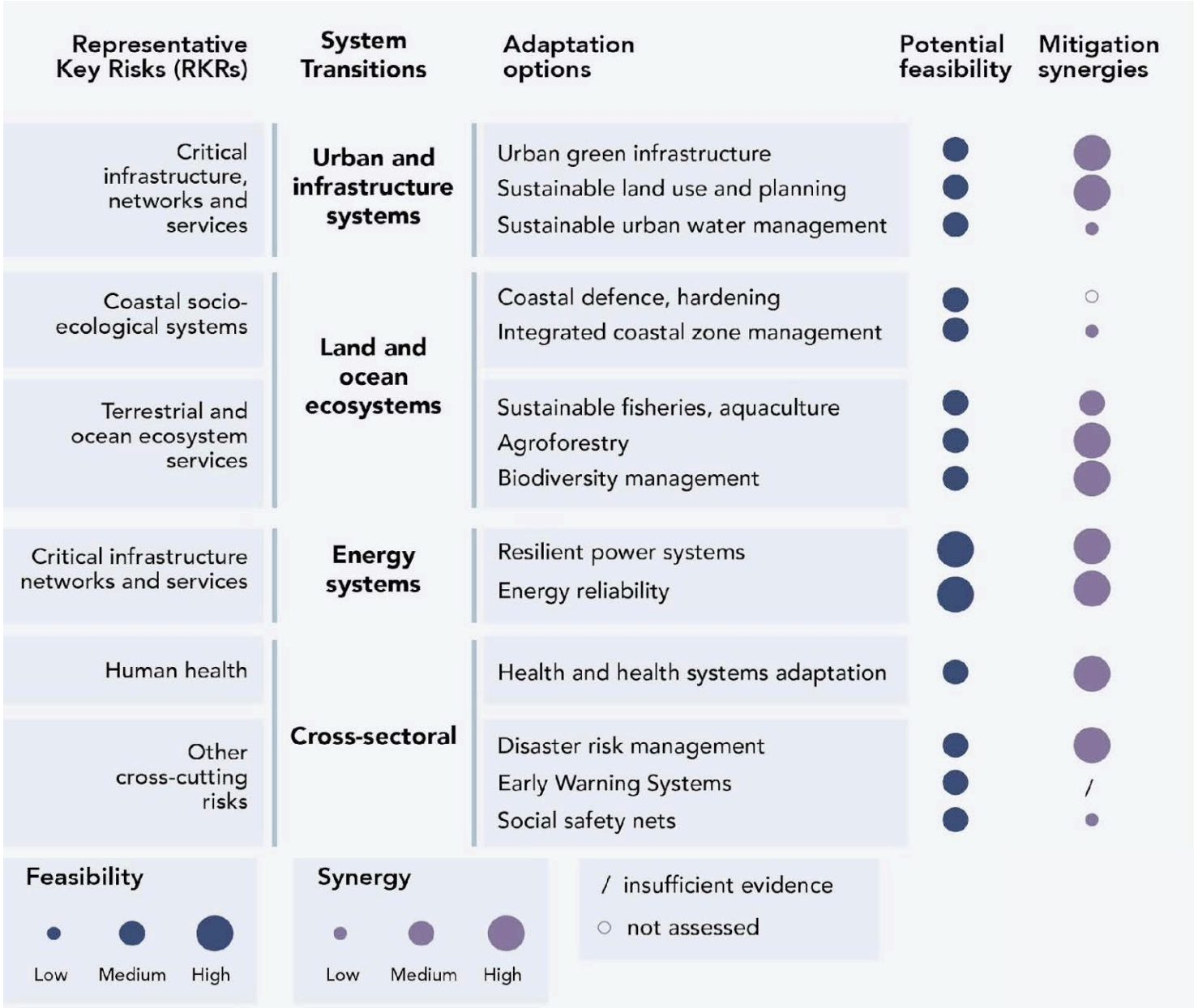


System Transitions are key to address systemic risks to coupled human, natural and climate systems. These include five simultaneous transitions in:

- **Urban and Infrastructure systems**
- **Land, coastal, ocean and freshwater ecosystems**
- **Energy systems**
- **Industrial systems**
- **Societal choices and transitions**

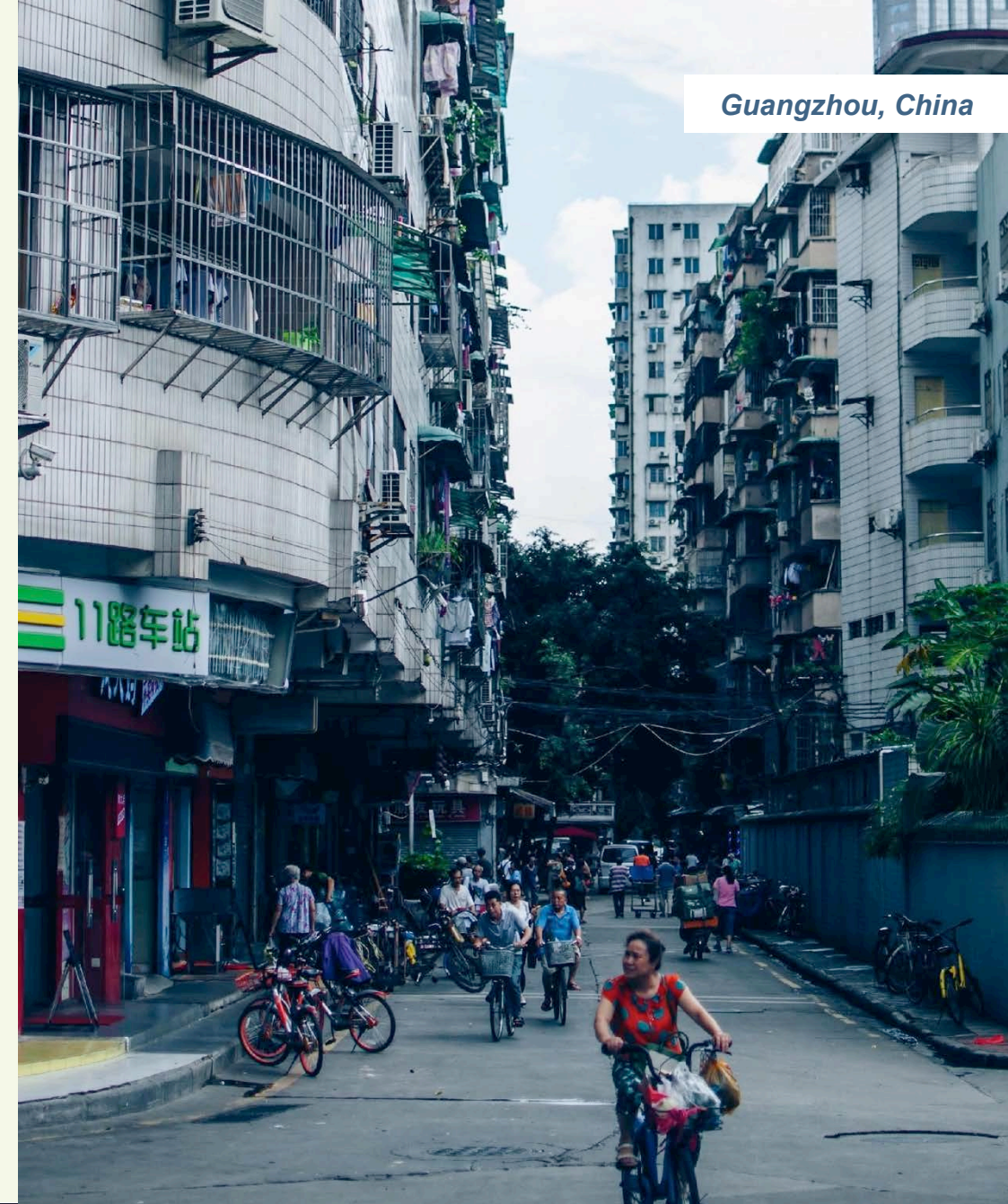
Together, these transitions advance sustainable development alongside adaptation and mitigation.

Figure 5: Multidimensional feasibility of select adaptation options organized by System Transitions and Representative Key Risks (RKR)



The Urban and Infrastructure System Transition can be accelerated by implementing feasible adaptation options, many with strong synergies with mitigation:

- Urban and regional planning that promote compact urbanisation and protect ecosystems
- Upgrading informal settlements by investing in accessible climate-resilient infrastructure
- Locally relevant ecosystem-based adaptation options and nature-based solutions
- Social infrastructure and services such as health, education, social safety nets, climate services, and disaster management.



Enabling conditions accelerate system transitions. These include:

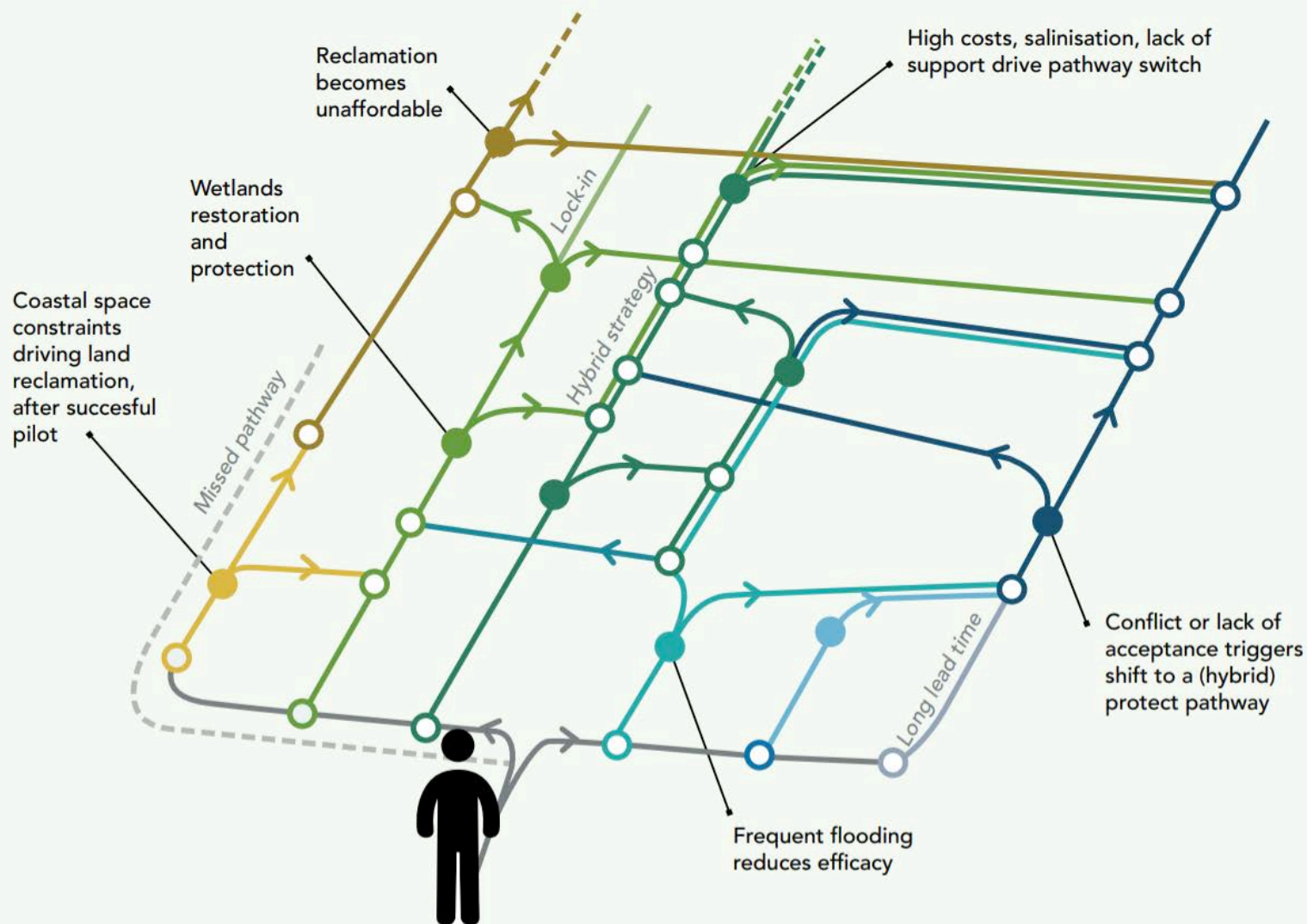
- inclusive governance, strong institutional capacity, and political commitment
- adequate finance
- technology and innovation
- lifestyle and behaviour change
- monitoring and evaluation mechanisms, and
- attention to culture and heritage

Societal choices can place cities on adaptation pathways and accelerate mitigation to shift development pathways towards sustainability.

It is critical to link adaptation with sustainable development, through sequences of adaptation options (also called adaptation pathways).

These pathways are driven by continuous societal choices and decision-making towards climate resilient development.

Figure 5: Coastal Cities & Settlements: Indicative Adaptation Pathways for Sea Level Rise





Climate Resilient Development combines climate adaptation strategies, mitigation actions, and pathways to support sustainable development for everyone.

Current climate adaptation is often short-term and associated with specific projects or discrete actions. Adaptation expands into Climate Resilient Development when it connects to sustainable development and mitigation, takes a longer time horizon, and involves multiple stakeholders to accelerate transformational change.

Cities and urban areas offer critical spaces to realize Climate Resilient Development by implementing adaptation and mitigation simultaneously with significant potential co-benefits for sustainable development.

For example, nature-based solutions can provide resilience to multiple climate hazards, sequester carbon dioxide, and enhance livelihoods. However, these are constrained if not distributed equitably or if they displace existing livelihoods.

Figure 7: Contributions of urban adaptation to Climate Resilient Development & their feasibility

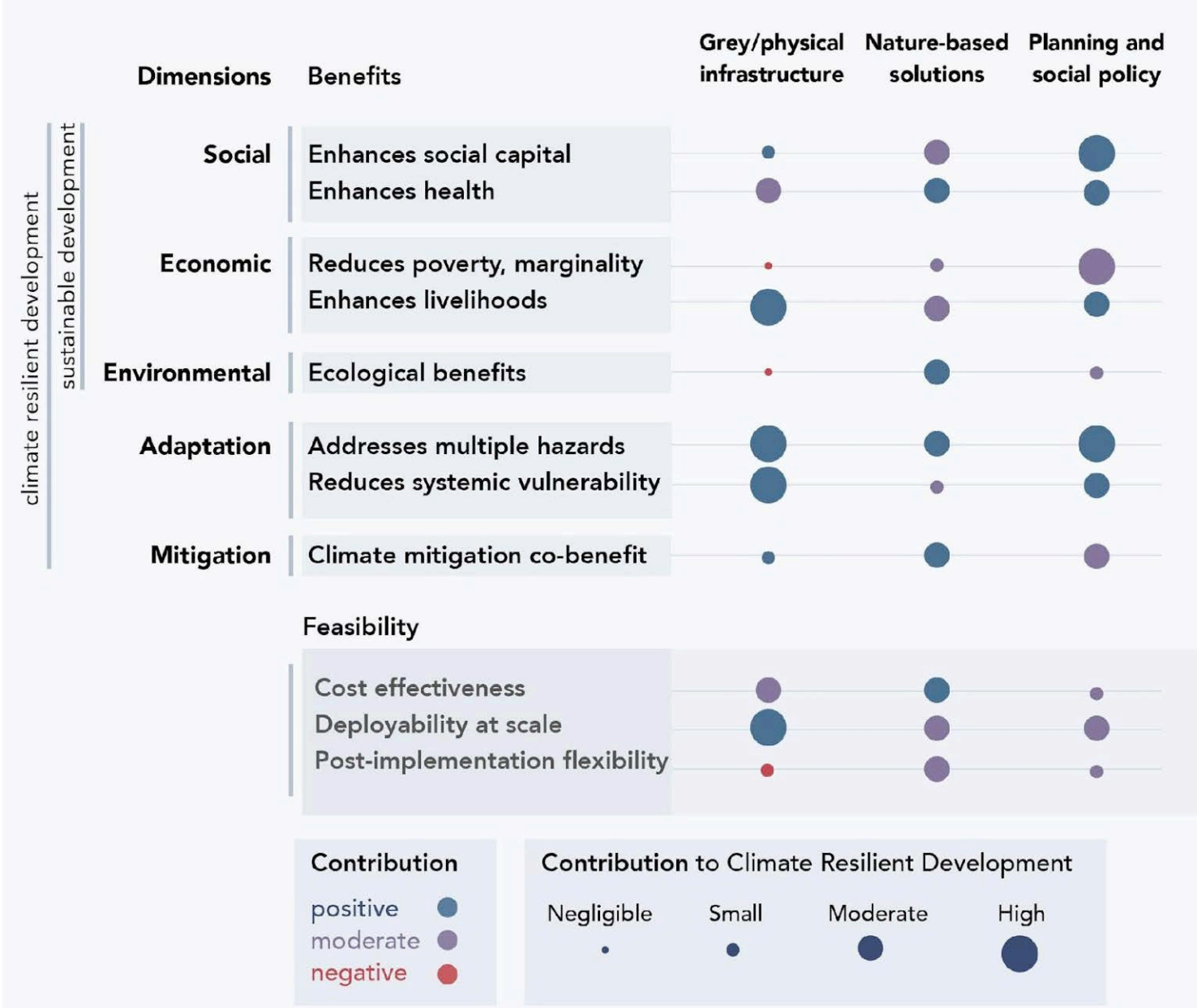


Figure Source: Derived from IPCC AR6 WGII, Chapter 6, Figure TS.9(d)



Cities hold the key to Climate Resilient Development. Cities and urban areas have a central role to play in the Systems Transitions and future transformations needed to adapt and mitigate to the climate crisis. **Our Climate is our Future.**

AUTHORS

Ibidun Adelekan (Nigeria)

Coordinating Lead Author, Chapter 9, IPCC AR6 WGII
University of Ibadan

Anton Cartwright (South Africa)

Lead Author, Chapter 4, IPCC Special Report on 1.5°C
University of Cape Town

Winston Chow (Singapore)

Lead Author, Chapter 6 and Cross-Chapter Paper 2, IPCC AR6 WGII
Singapore Management University

Sarah Colenbrander (United Kingdom)

Contributing Author, Chapter 6, IPCC AR6 WGII
ODI

Richard Dawson (United Kingdom)

Lead Author, Chapter 6, IPCC AR6 WGII
Coordinating Lead Author, Cross-Chapter Paper 2, IPCC AR6 WGII
Newcastle University

Matthias Garschagen (Germany)

Lead Author, Chapter 16 and Cross-Chapter Paper 2, IPCC AR6 WGII
Ludwig Maximilian University of Munich

Marjolijn Haasnoot (Netherlands)

Lead Author, Chapter 13 and Cross-Chapter Paper 2, IPCC AR6 WGII
Utrecht University

Masahiro Hashizume (Japan)

Lead Author, Chapter 10, IPCC AR6 WGII
The University of Tokyo

Ian Klaus (USA)

Series Editor of the SUP Series
Chicago Council of Global Affairs

Jagdish Krishnaswamy (India)

Coordinating Lead Author, Chapter 7, IPCC Special Report on
Climate Change and Land
Indian Institute for Human Settlements

Maria Fernanda Lemos (Brazil)

Coordinating Lead Author, Chapter 12, IPCC AR6 WGII
Pontifical Catholic University of Rio de Janeiro

Debbie Ley (Guatemala/Mexico)

Lead Author, Chapter 18, IPCC AR6 WGII
Lead Author, Chapter 4, IPCC Special Report on 1.5°C
Economic Commission for Latin America and the Caribbean

Timon McPhearson (USA)

Lead Author, Chapter 6, IPCC AR6 WGII
The New School

Mark Pelling (United Kingdom)

Coordinating Lead Author, Chapter 6, IPCC AR6 WGII
King's College London

Prathijna Poonacha Kodira (India)

Indian Institute for Human Settlements

Aromar Revi (India)

Coordinating Lead Author, Chapter 18, IPCC AR6 WGII
and Chapter 4, IPCC Special Report on 1.5°C
Indian Institute for Human Settlements

Liliana Miranda Sara (Peru)

Lead Author, Chapter 12, IPCC AR6 WGII
Cities for Life Forum

Nicholas P. Simpson (Zimbabwe/South Africa)

Lead Author, Chapter 9, IPCC AR6 WGII
University of Cape Town

Chandni Singh (India)

Lead Author, Chapter 10, IPCC AR6 WGII
Author, Cross-Chapter Paper 2, IPCC AR6 WGII
Indian Institute for Human Settlements

William Solecki (USA)

Lead Author, Chapter 17, IPCC AR6 WGII
Coordinating Lead Author, Chapter 1, IPCC Special Report on 1.5°C
City University of New York

Adelle Thomas (Bahamas)

Lead Author, Chapter 16 and Cross-Chapter Paper 2, IPCC AR6 WGII
Lead Author, Chapter 3, IPCC Special Report on 1.5°C
University of the Bahamas

Christopher Trisos (South Africa)

Coordinating Lead Author, Chapter 9, IPCC AR6 WGII
University of Cape Town

REVIEW EDITORS

Hans-Otto Pörtner (Germany)

Co-Chair, Working Group II
IPCC

Debra Roberts (South Africa)

Co-Chair, Working Group II
IPCC

