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ipcc
INTERGOVERNMENTAL PANEL ON climate change
WMO UNEP

IPCC AR7 Special Report on Climate Change and Cities

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“Urban” before AR6; in AR5

WG I – single mention on urban albedo and two mentions of heat islands with reference to Global Mean Surface Temperatures

Three chapters in WGII on "Human Settlements, Industry, and Infrastructure”, include one dedicated chapter on “Urban Areas”

Human settlements, infrastructure and spatial planning chapter in WGIII, and several implicitly urban sectoral chapters

AR6 “urban” material

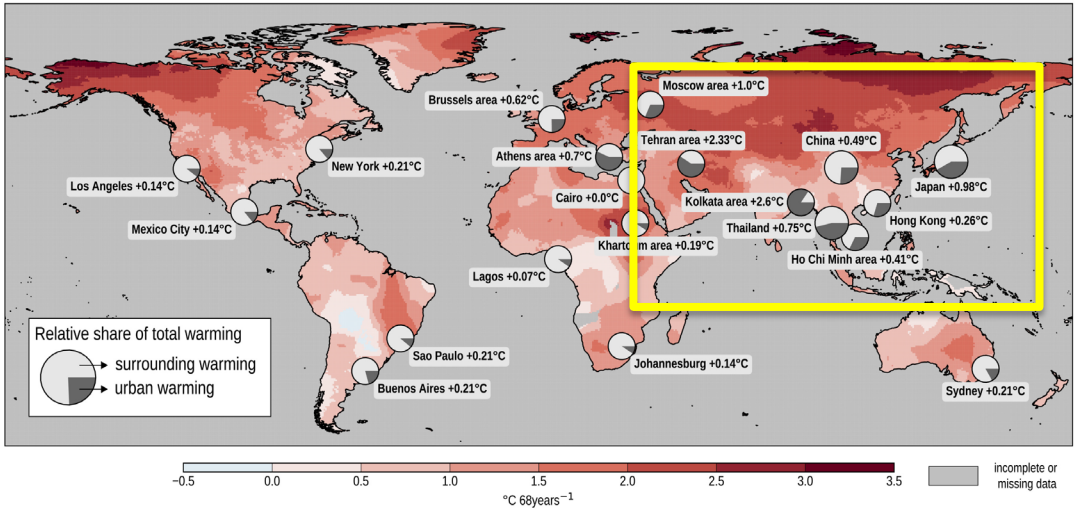
- **WGI**
  - Chapter 10: Linking Global to Regional Climate Change
  - Influence of heat islands and temperature extremes
  - Box 10.3 Urban climates – processes and trends

The difference in observed warming trends between cities and their surroundings can partly be attributed to urbanization (*very high confidence*).

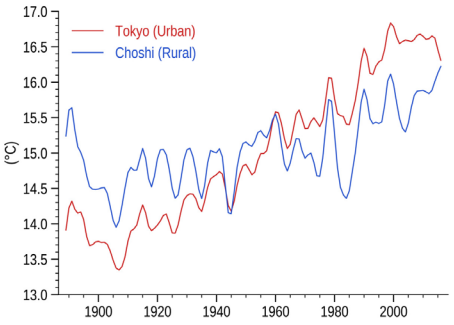
Annual-mean daily minimum temperature is more affected by urbanization than annual-mean daily maximum temperature (*very high confidence*).

Urbanization has exacerbated changes in temperature extremes in cities, in particular for nighttime extremes (*high confidence*)

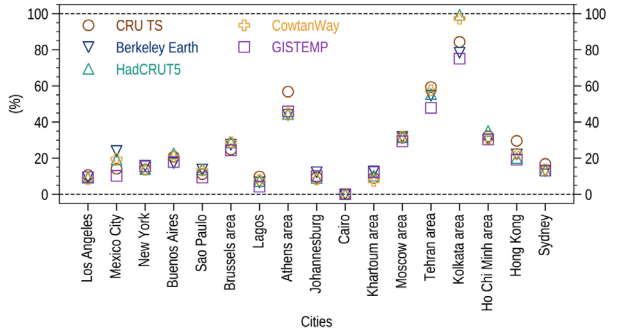
(a) Trend in global surface air temperature (CRU TS, 1950-2018)



(b) Temperature evolution Japan examples



(c) Relative share urban warming of total warming



AR6 “urban” material

- **WGII**
  - Chapter 6 and regional chapters
  - Cross-Chapter Paper on coastal cities
    - Especially on issues of sea level rise and adaptation approaches to reduce risk

Projected number of people at risk of a 100-year coastal flood.

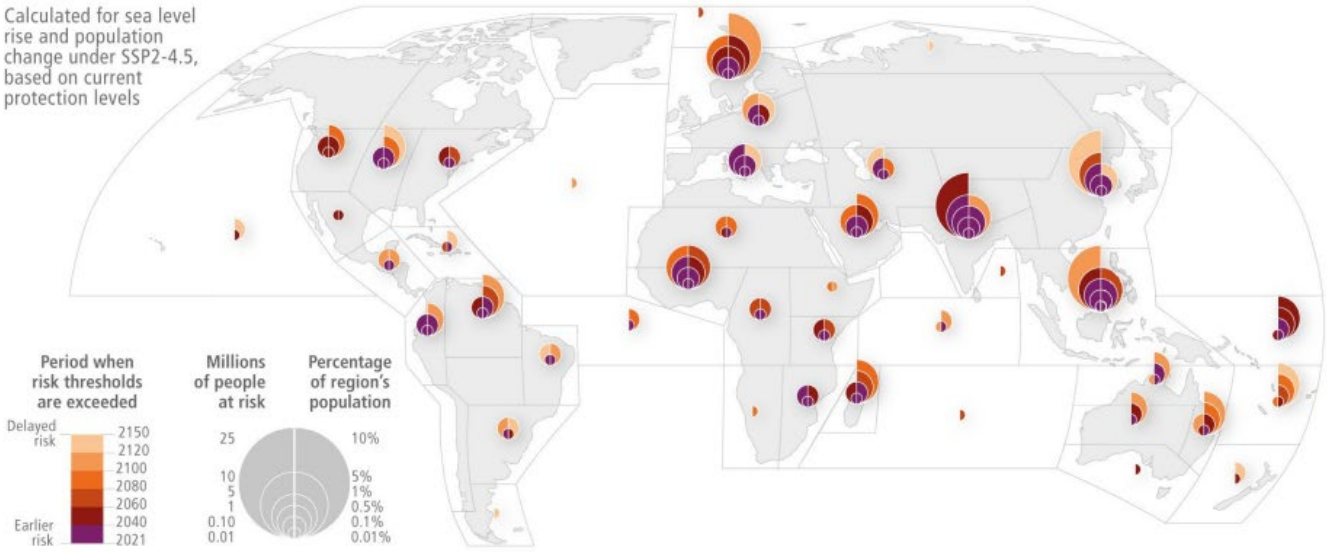
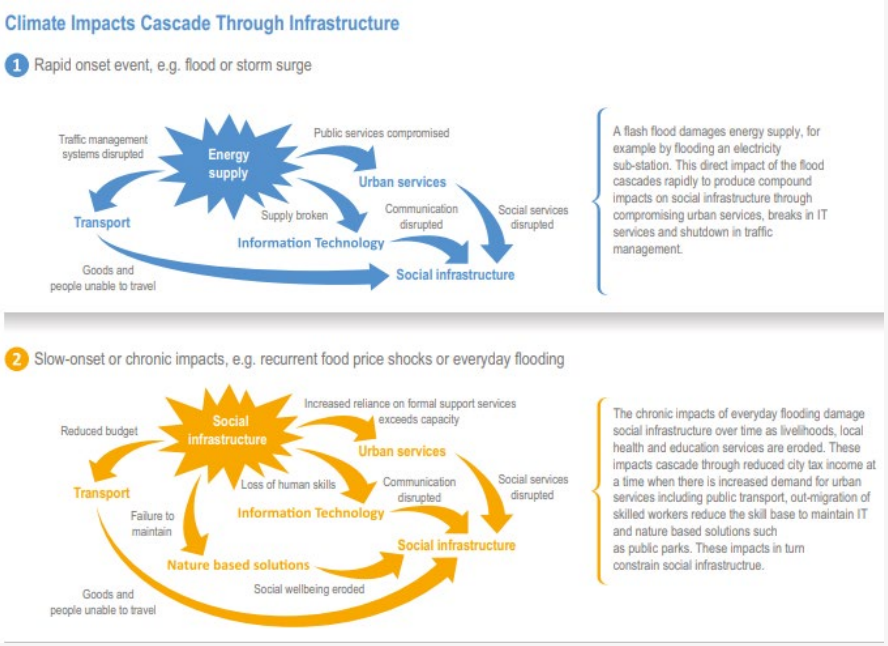


Figure 1: The size of the circle represents the number of people at risk per IPCC region and the colours show the timing of risk based on projected population change and sea level rise under SSP2-4.5*. Darker colours indicate earlier in setting risks. The left side of the circles shows absolute projected population at risk and the right side the share of the population in percentage. {Figure TS.9c}.

AR6 “urban” material



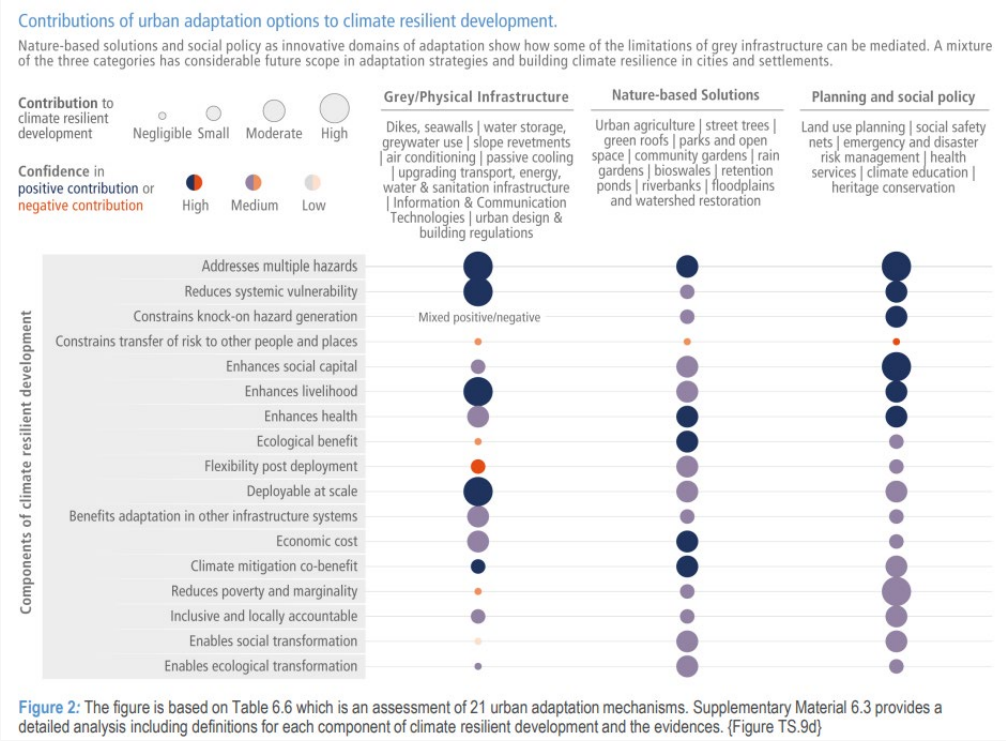


Figure 2: The figure is based on Table 6.6 which is an assessment of 21 urban adaptation mechanisms. Supplementary Material 6.3 provides a detailed analysis including definitions for each component of climate resilient development and the evidences. {Figure TS.9d}

WGII

- Compound & cascading risks
- Adaptation & climate resilient development

AR6 “urban” material

- **WGIII**
  - Chapter 8: Urban systems and Other Settlements
  - Other sectoral chapters – Buildings, Transport, and Industry
  - WGII and III also had a shared cross-WG box on cities and climate change

Cross-Working Group Box 2: Cities and Climate Change

Authors: Xuemei Bai (Australia), Vanesa Castán Broto (Spain/United Kingdom), Winston Chow (Singapore), Felix Creutzig (Germany), David Dodman (Jamaica/United Kingdom), Rafiq Hamdi (Belgium), Bronwyn Hayward (New Zealand), Şiir Kılkış (Turkey), Shuaib Lwasa (Uganda), Timon McPhearson (the United States of America), Minal Pathak (India), Mark Pelling (United Kingdom), Diana Reckien (Germany), Karen C. Seto (the United States of America), Ayyoob Sharifi (Iran/Japan), Diana Ürge-Vorsatz (Hungary)

Introduction

This Cross-Working Group Box on Cities and Climate Change responds to the critical role of urbanisation as a megatrend impacting climate adaptation and mitigation. Issues associated with cities and urbanisation are covered in substantial depth within all three Working Groups (including WGI Box TS.14, WGII Chapter 6 ‘Cities, Settlements and Key Infrastructure’, WGII regional chapters, WGII Cross-Chapter Paper ‘Cities and Settlements by the Sea’, and WGIII Chapter 8 ‘Urban Systems and Other Settlements’). This Box highlights key findings from WGII and III and substantial gaps in literature where more research is urgently needed relating to policy action in cities. It describes methods of addressing mitigation and adaptation in an integrated way across sectors and cities to advance sustainable development and equity outcomes and assesses the governance and finance solutions required to support climate-resilient responses.

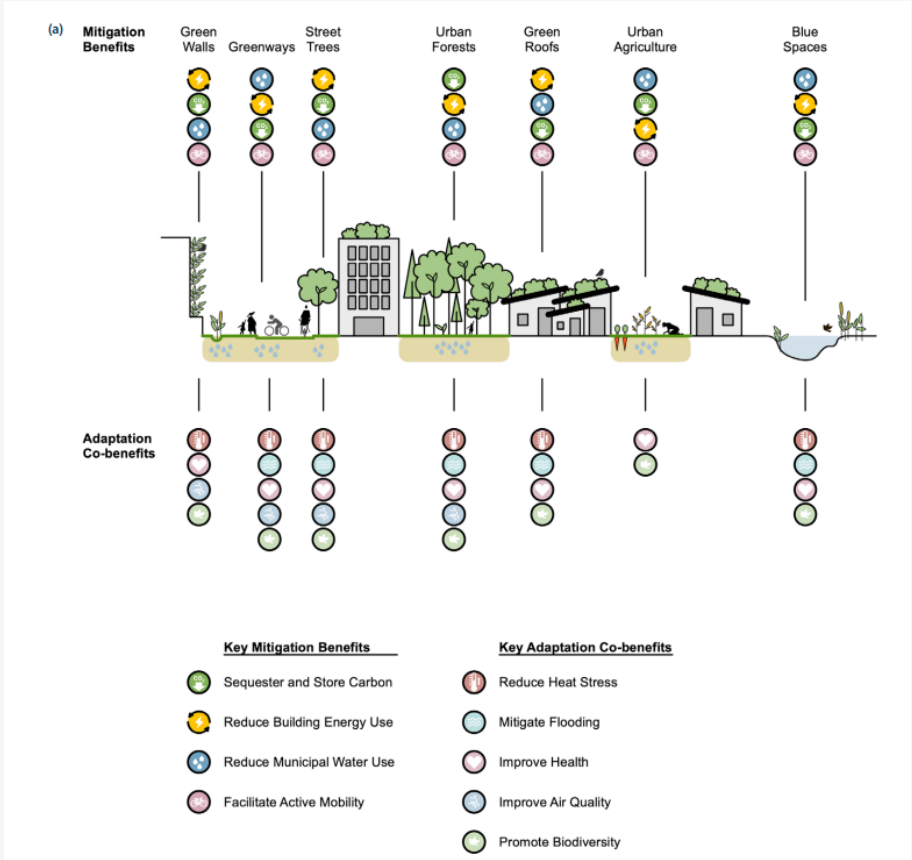
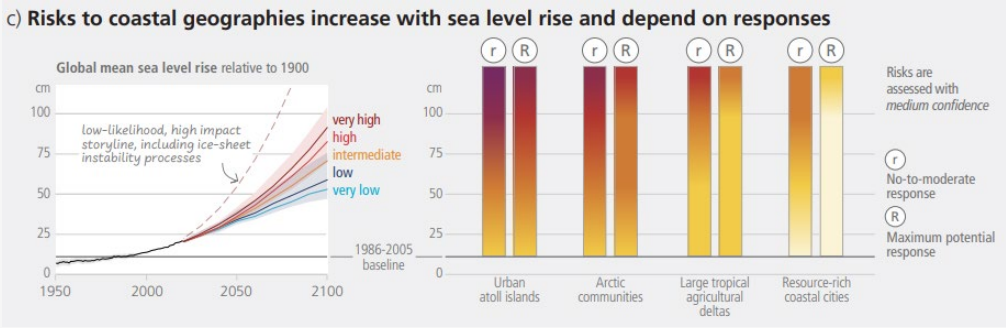
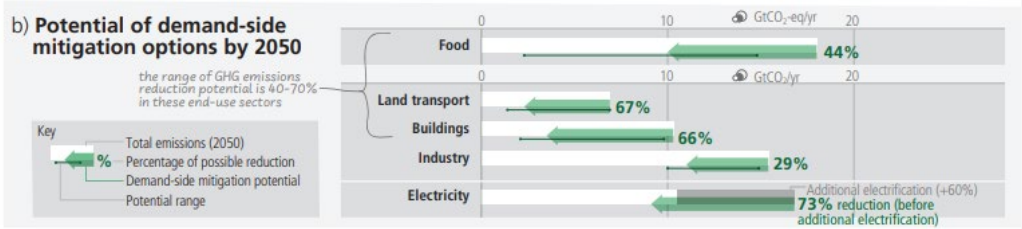


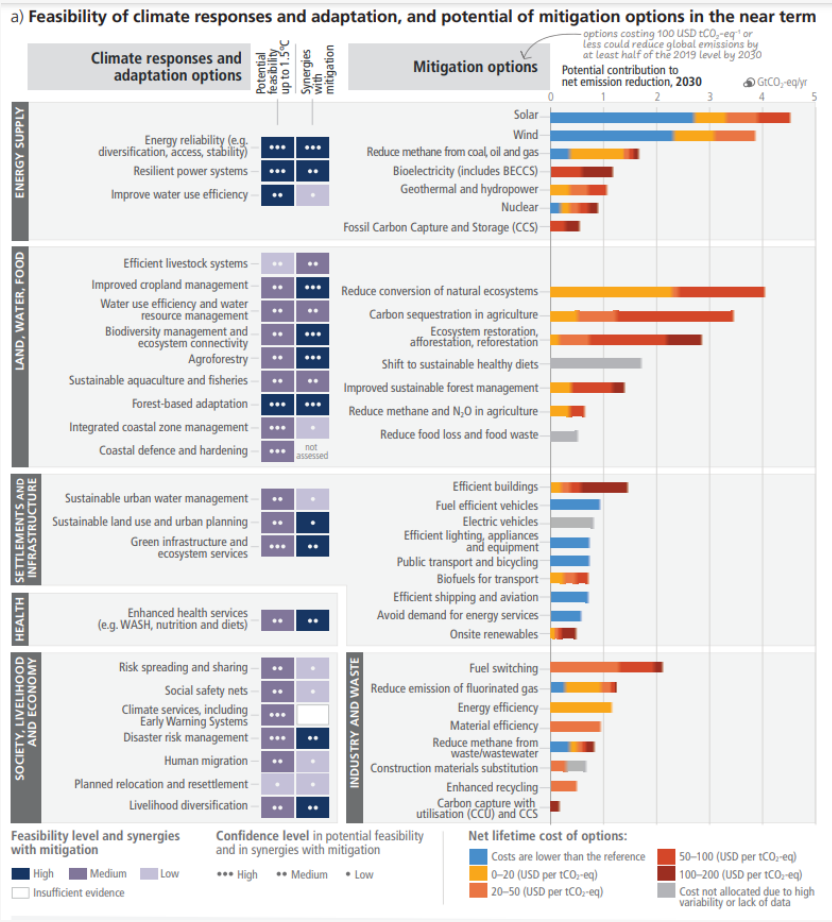
Figure 8.18: Key mitigation benefits, adaptation co-benefits, and SDG linkages of urban green and blue infrastructure. Panel **(a)** illustrates the potential integration of various green and blue infrastructure strategies within an urban system.

AR6 “urban” material

- **Synthesis Report**
  - 18 mentions of “urban” in SPM text in terms of higher risks but also as avenues of climate action through climate resilient development







Special report on Climate Change and Cities

- Supported by Governments & UN-Habitat, C40 Cities, ICLEI, UCLGs, GCOM…
- Significant interest from practitioner, decision-making, and advocacy communities
- Involves contributions from all Working Groups, and will administratively be led by Working Group II for AR7
- Selection of nominated scoping experts underway for a scoping meeting next April (Venue TBD)

What expertise were we looking for in scoping experts?

Biophysical aspects of cities

Impacts and Risks, including (i) Economic and Non-economic Losses & Damages and (ii) Compounding and Cascading Aspects

Sectoral Development, Adaptation, Mitigation and Responses to Losses & Damages

Energy and Emissions

Governance, Policy, Institutions, Planning and Finance

Civil Society

What expertise are we looking for in scoping experts?

Not focused on just one Working Group → an **integrative approach** is needed for this SR

- Similar to AR6 SRs

The audience are governments across multiple levels

- They seek coherent **policy-relevant information** on climate action

The need to scope chapter content outlines and finalise the narrative of the report during the scoping meeting

- Material will be reviewed at IPCC plenary and approved subject to governmental feedback

Thank you!

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