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**Cities &
Climate Change
Science
Conference**

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EDMONTON, ALBERTA, CANADA

Global stock-take:

Equity, Environmental Justice and Urban Climate Change—

In the Assessment Report on Climate Change and Cities (ARC3.2)

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Urban Climate Change Research Network

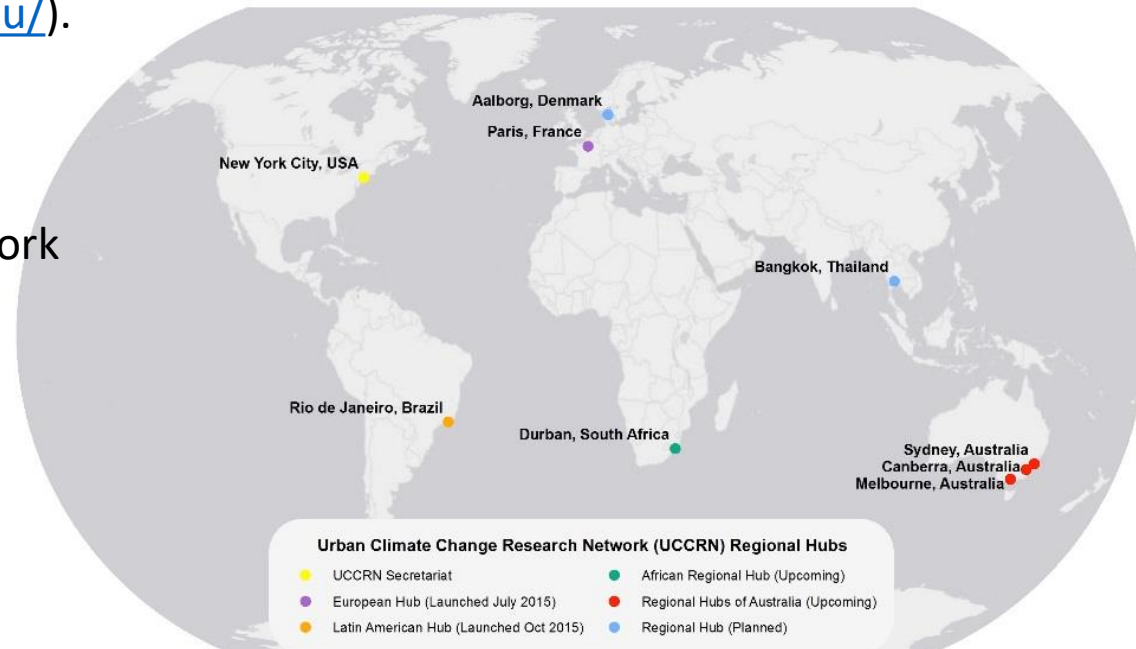
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Urban Climate Change Research Network (UCCRN):

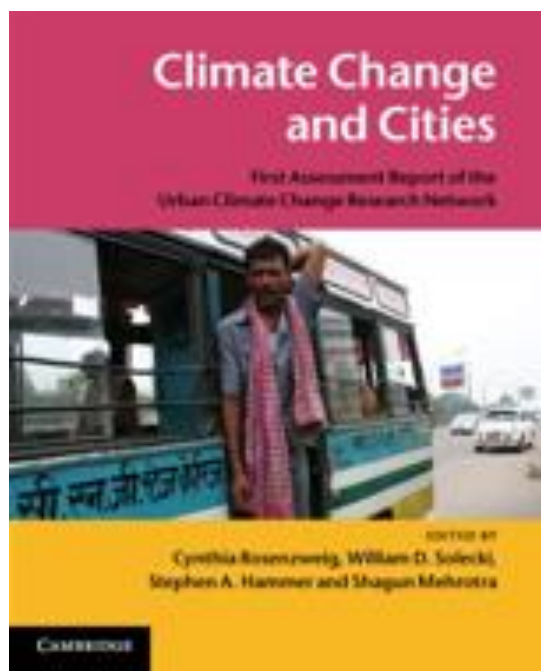
- Network of researchers working on all facets of **climate change and cities**.
- Established in May 2007 during the C40-Large Cities Climate Summit.
- Provides knowledge to the C40 cities and other urban decision makers to **enhance climate science based policy-making → similar to the IPCC for nation states**
- UCCRN is based at the Columbia University Earth Institute, with other regional offices (<http://www.earth.columbia.edu/>).

- Started with 100 researchers from around 60 cities; now a tremendous network with regional hubs on every continent

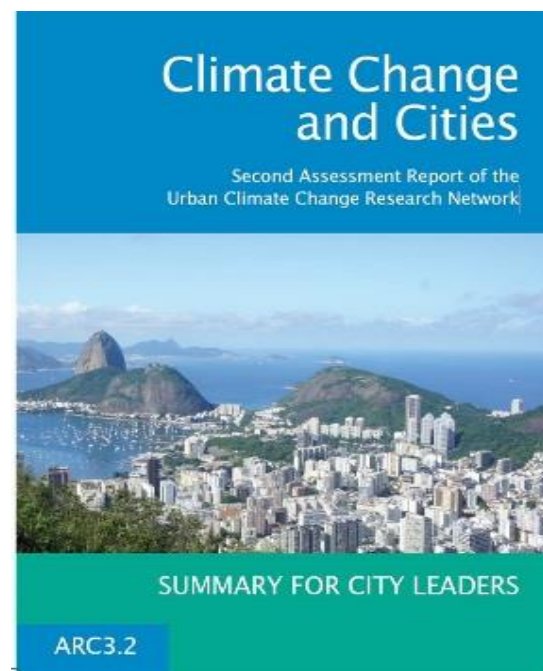


Products: [Assessment Reports on Climate Change and Cities \(ARC3\) Series](#)

- **First-ever global, interdisciplinary, cross-regional, science-based assessments to address climate risks, adaptation, mitigation, and policy mechanisms relevant to cities**
- **Based on available literature**, i.e. similar to the IPCC AR
- *Second Assessment Report is forthcoming, published by Cambridge University Press*



ARC3



ARC3.2

Summary for Urban Decision-Makers

Climate Change and Cities: Second Assessment Report (ARC3.2)



Chapter 6:

Equity, Environmental Justice, and Urban Climate Change

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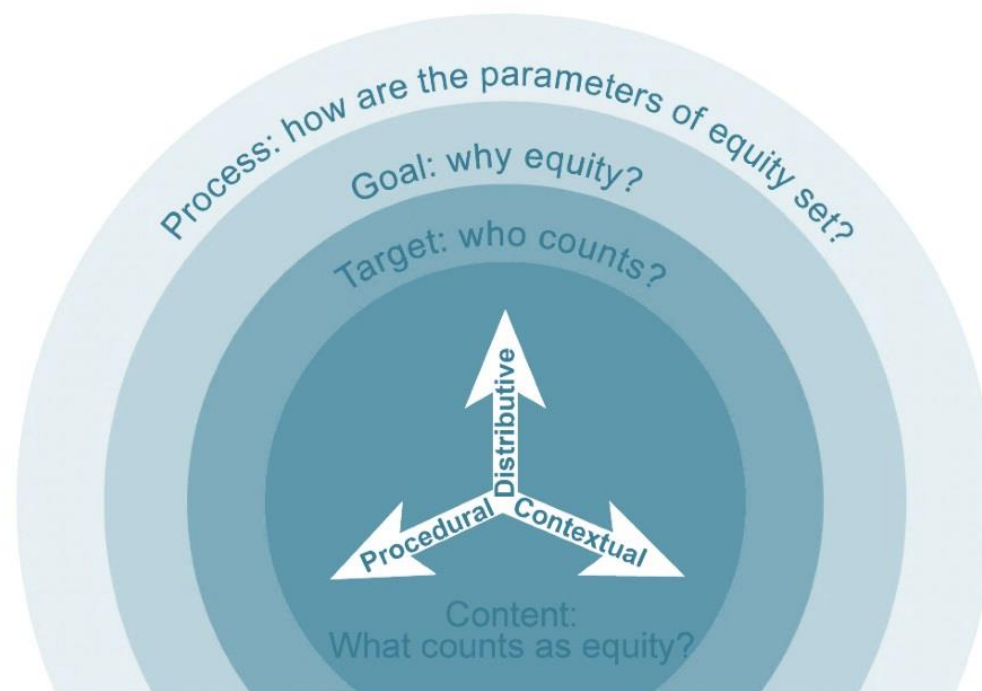
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1. INTRO: Definitions



The equity framework (McDermott et al., 2011)

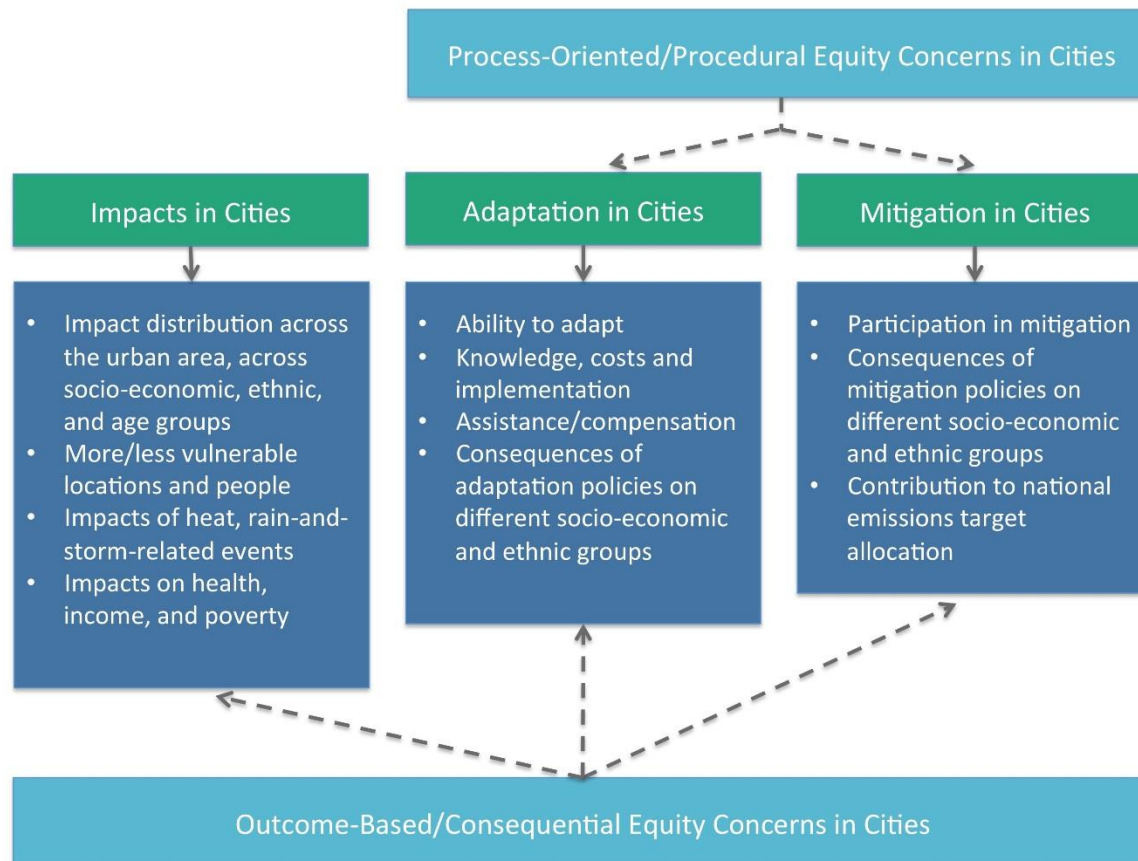
Commonly **three dimensions of equity** are identified:

- **1) Outcome-based, distributive, and consequential equity;**
- **2) Process-oriented and procedural equity (Metz, 2000, McDermott et al., 2011);**
- **3) Contextual equity (McDermott and Schreckenber, 2009).**

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1. INTRO: Equity and climate change

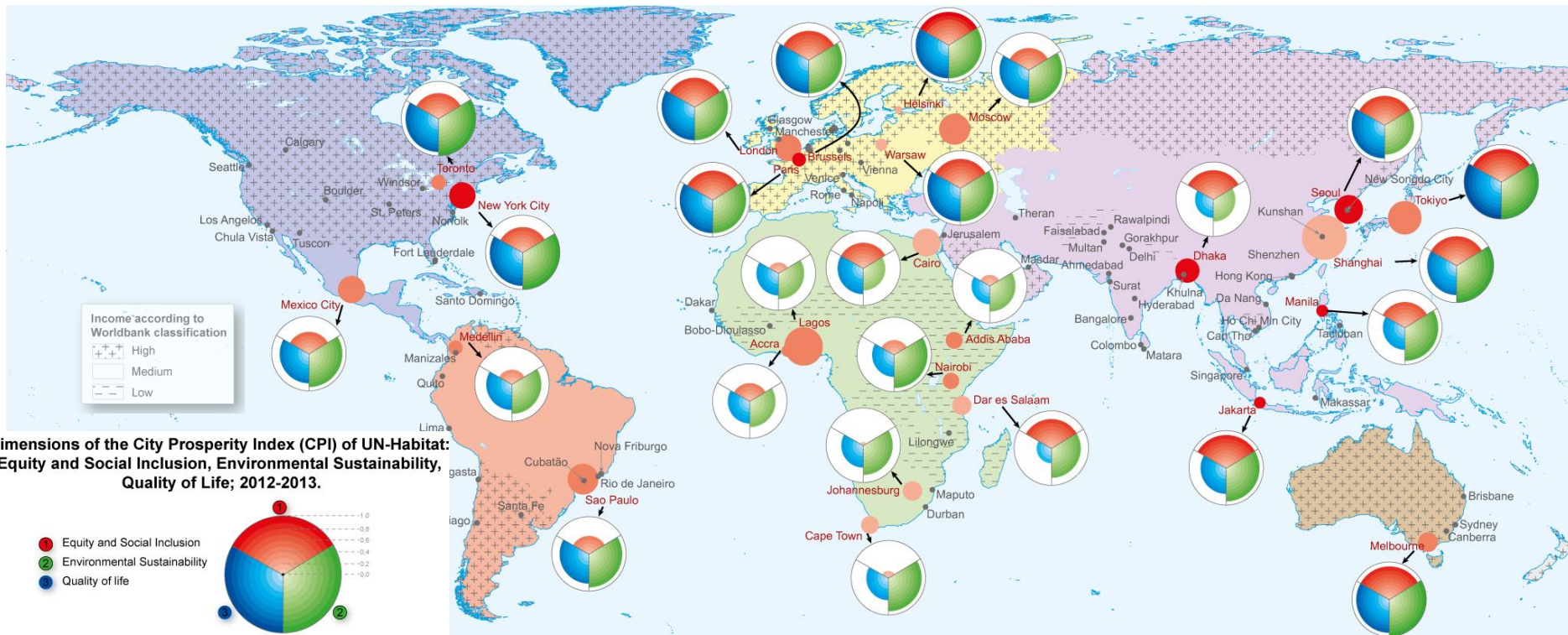
- For equity concerns, all CC aspects, i.e. impacts, adaptation and mitigation in cities play a role



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2. EQUITY AND URBAN IMPACTS: Cross-cutting - Differential vulnerability influenced by:

- (1) Differing levels of physical exposure;
- (2) Urban development processes, such as failure to provide of access to critical infrastructure/ services;
- (3) Social characteristics of residents;
- (4) Institutional & governance weaknesses.



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2. EQUITY AND URBAN IMPACTS:

HEAT:

- **Age** is the most determinant risk factor;
- **Being female**, less **mobile/** confined to bed, of **lower socio-economic status** and **education level** increase relative vulnerability



RAIN – Inland Flooding

- **Urban poor** are often more exposed than other city-dwellers, because the housing they can afford tends to be located in environmentally riskier areas and be of poorer quality, e.g., 40% of urban dwellers in Asia live in sub-standard housing or slums

RAIN – Landslides

- Product of geo-hydrological and locational factors, related to settling in inappropriate areas and lack of compliance and control
- → can affect all urban neighborhoods; caution with generalizations

RAIN – DROUGHT

- Can have major secondary impacts, particularly in drylands where 45% of the population live in cities
- **The poor** are disproportionately affected spending 10times more money for water (relative to their income) than richer households
- **Women** are majorly impacted, being water fetchers & last in diet hierarchies in many cultures
- Drought is often accompanied by intense rainfall with, i.e., intensive flooding, fires, a.o.

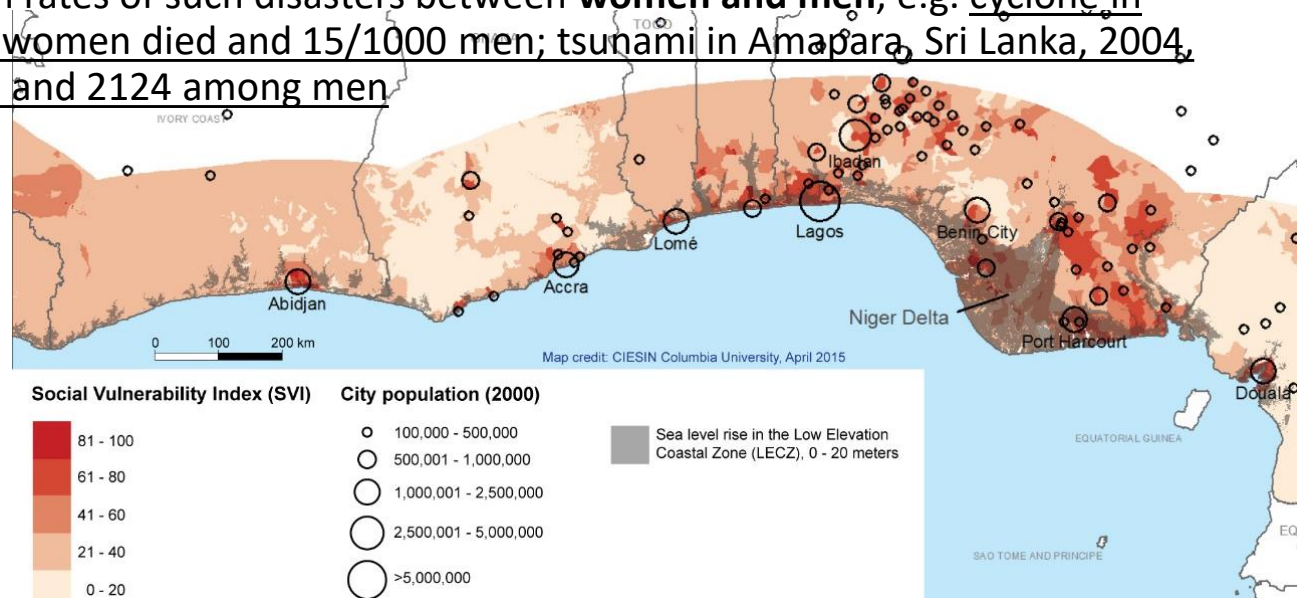


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2. EQUITY AND URBAN IMPACTS

STORM SURGE & COASTAL FLOODING

- Affects more urban dwellers, as two of three residents of coastal areas world-wide live in cities
- **Vulnerable people** and households are more likely to be affected, because they live disproportionately in low-lying areas/flood plains in particular in low-income countries & possess substantially fewer resources to cope
- Major differences in the death rates of such disasters between **women and men**, e.g. cyclone in Bangladesh in 1991, 71/1000 women died and 15/1000 men; tsunami in Amapara, Sri Lanka, 2004, fatalities 3972 among women and 2124 among men



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2. EQUITY AND URBAN ADAPTATION

- **Urban risks arise from the failure to adapt, inadequate adaptation, or maladaptation to climate change**
 - Can relate to the extent of infrastructure and services provision, be socially constructed, or arise from the lack of voice for particular groups (e.g., informal settlers) and the lack of accountability to them by government agencies
- **Stark differences between high- and low-income countries as regards infrastructure** (piped water, sanitation, effective drains, all-weather roads and paths) **and risk-reducing service provision** (including health care and emergency services)
- **→ Important for adaptation:**
 - Enable sufficient land for housing that avoids dangerous sites
 - Adapt regulatory frameworks (for buildings, infrastructure and zoning)
 - Adapt fiscal incentives and rethink infrastructure investments
 - Pay attention to gender-sensitive adaptation processes and intersectional analyses, e.g. aligning with mitigation concerns and other policies



Hyderabad

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3. EQUITY AND CLIMATE CHANGE MITIGATION

- **Spatial planning: evidence mostly from cities in high-income countries**
 - Anti-sprawl mitigation policies reduce traffic, but also push up housing prices subsequently displacing **low-income residents**
- **Accessibility and transport policies: evidence mostly from cities in high-income countries**
 - Can impact **lower-income households** by way of changes of housing affordability & costs of transportation
 - → **Equal service by efficient public transport is key**
 - → Transport policies aiming to improve the private transportation extremely complex and inconsistent regarding equity effects
- **Waste management: evidence from waste pickers**
 - When improved waste collection and management becomes a public priority, pickers are often displaced and become unrecognized, → **Pro-poor recycling strategies are needed**
- **Renewable energy:** can have unequal burden on **low-income households** often contributing a larger fraction of their income to energy → **Fundamental bias of incentive-based mechanisms** that leave high-income households following their old consumption practices (paying a bit more), while low-income households scramble to adjust



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4. INNOVATIONS AND LESSONS FROM IMPLEMENTATION

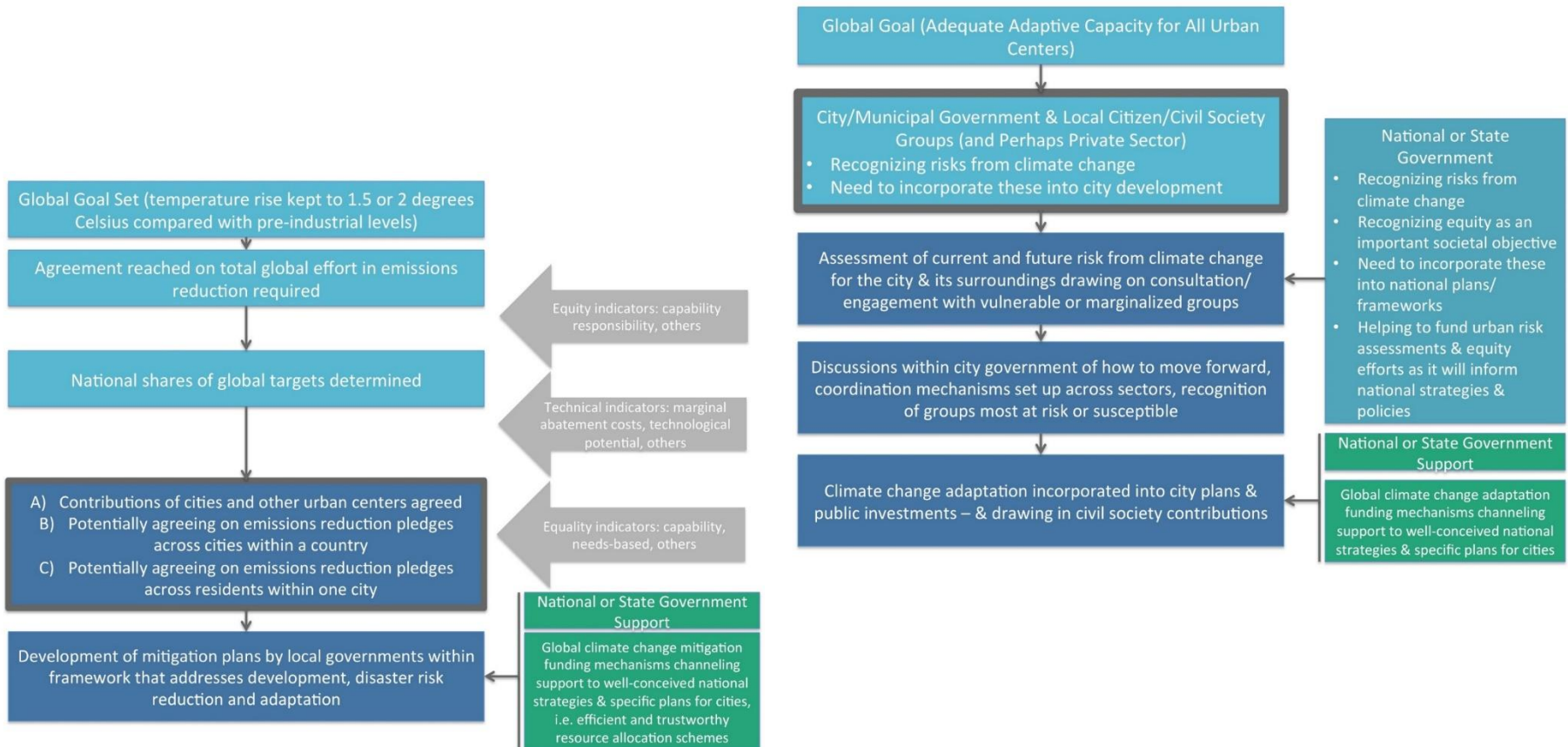
- Most cities are affected by local political constraints and powerful vested interests, cross-municipal and -departmental governance challenges
- **Policy programs often overlook the exclusion of low-income people** and other economic, social, or ethnically under-represented groups
 - Urban community actors fill the vacuum of formal governance systems establishing their own, informal rights
 - In Mumbai, Nairobi, Lagos, Delhi, Manila, and Dhaka, access to water, sanitation, other services, and infrastructure is controlled by commercial enterprises or elites
 - **May lead to discrimination due to race, caste, class, and gender**
- **Adaptation investments may also prioritize the protection of the formal city infrastructure**
 - E.g. bulldozing informal settlements for infrastructure 'improvements'
- → **Development of formal institutional, regulatory, financial, economic, social frameworks is key**
- → **Women in particular should be recognized as important agents of change**
- → **Climate change focal points, support from multi-level governance frameworks, and effective international, national, and municipal financing important**



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4. INNOVATIONS AND LESSONS FROM IMPLEMENTATION: Equity framework for addressing mitigation and adaptation



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4. INNOVATIONS AND LESSONS FROM **IMPLEMENTATION**: Equity impact assessments in cities

- **The Urban Equity Impact Assessment (EquIA) step-by-step Guide:**
 - Following this guide and discussing these questions will minimize the risk that a policy measure will have unintended, inequitable consequences following its implementation

The Urban Equity Impact Assessment (EquIA-urban) tool: A step-by-step guide

1) Process: How are the parameters of urban equity set?

2) Goal: Why equity? What is the explicit/implicit goal?

3) Target: Who counts as a subject?

4) Content: What counts as a matter of urban equity?

4a) Distributive equity

4b) Procedural/participatory equity

4c) Contextual equity (incorporating capabilities, access, power)

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5. KNOWLEDGE GAPS, FUTURE RESEARCH, AND AWARENESS-RAISING

Lack of DATA regarding:

1. Consistent evidence of climate change impacts and adaptation capacities as well as information on access, use and control of resources, assets and services in relation to gender, age/generation, ethnicity, social class, and demographic groups **(DATA)** → also and particular on native knowledge
2. Assessment of root causes, and cascading impacts of climate risk in cities and their **fine-grained spatial distribution (DATA)**

Lack of METHODS to assess:

1. Effects of mitigation and adaptation policies on equity issues in cities of both high- and particularly low-income countries **(DATA & METHODS)**
2. Capacity-building for urban stakeholders and authorities to mainstream gender, intersectionality, and other equity issues into their plans and actions **(METHODS)**

Lack of PRACTICE regarding:

1. Integrating under-represented groups into policy-making spheres, particularly transcending numerical representation but encompassing issues of social empowerment and political influence, even more for hard-to-reach populations **(METHODS & PRACTICE)**
2. Acknowledging community processes and women's initiatives in municipal action plans **(PRACTICE)**

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THANK YOU.

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