

Government of the People's Republic of Bangladesh  
**Planning Commission: Learning Hub Event**  
 May 18, 2015



# Climate Change and Urbanization

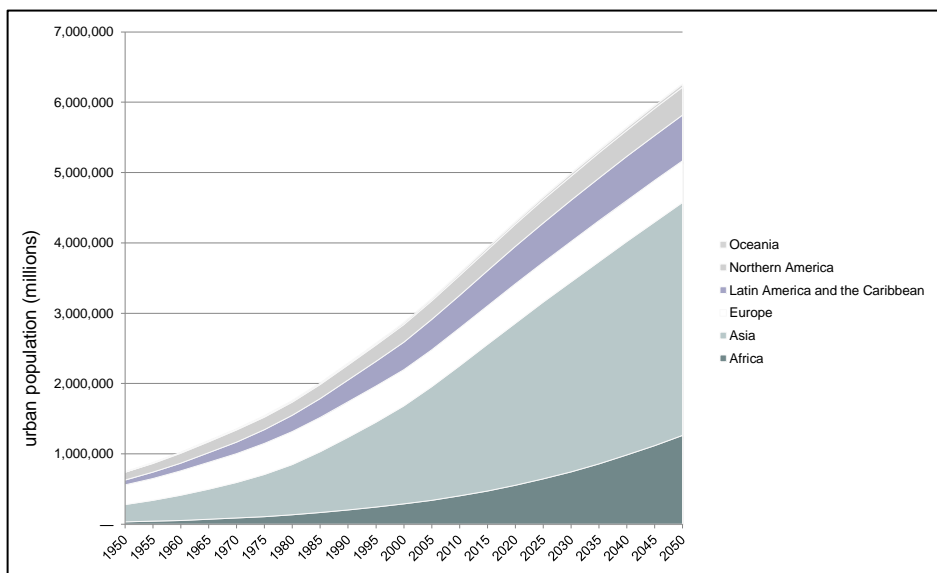
Issues and Actions from Low- and Middle-Income Countries



**Dr David Dodman**  
 david.dodman@iied.org

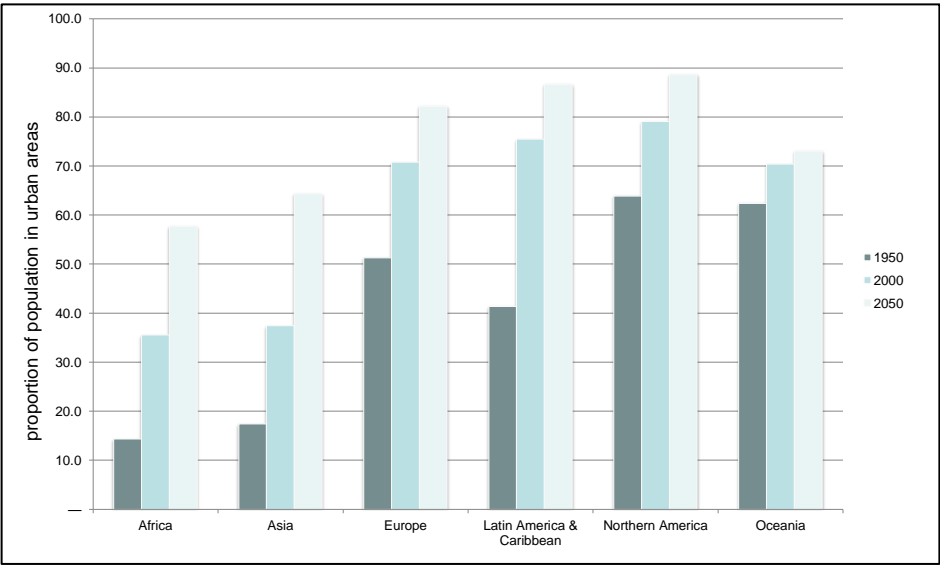
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## Climate Change in an Urbanizing World



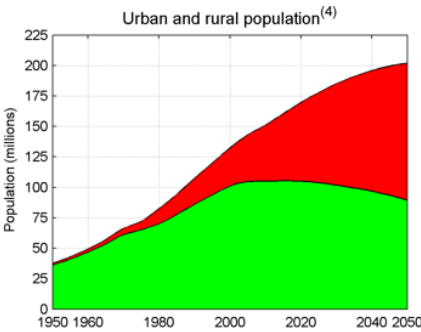
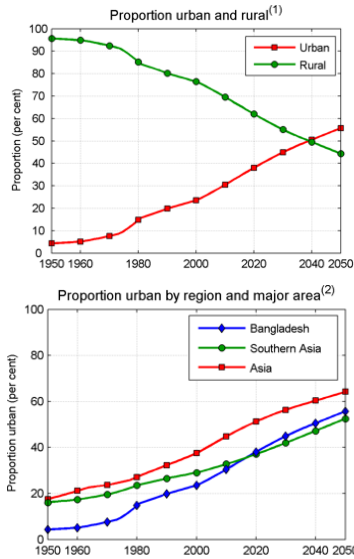
United Nations, Department of Economic and Social Affairs, Population Division (2012).  
*World Urbanization Prospects: The 2011 Revision*, <http://esa.un.org/unpd/wup/index.htm>.

# Climate Change in an Urbanizing World



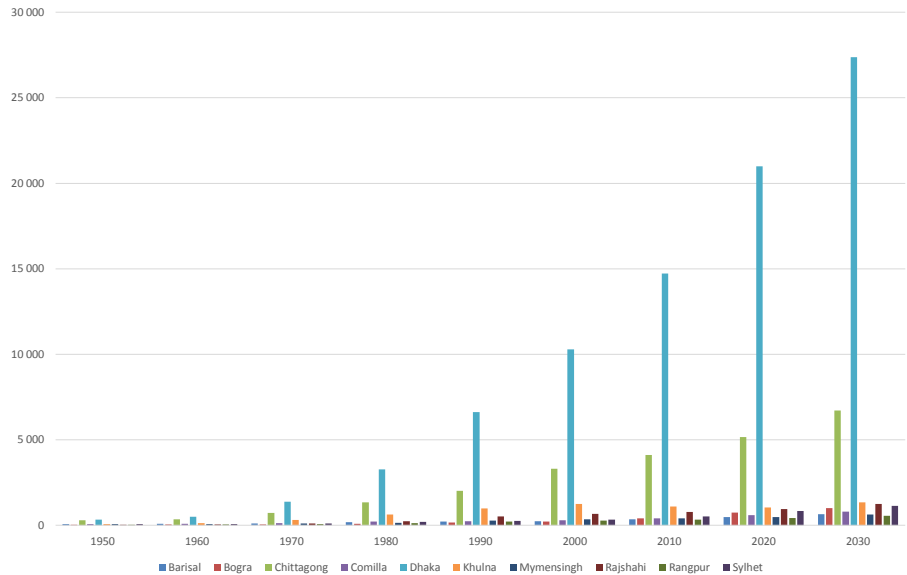
United Nations, Department of Economic and Social Affairs, Population Division (2012).  
*World Urbanization Prospects: The 2011 Revision*, <http://esa.un.org/unpd/wup/index.htm>.

## Urbanization in Bangladesh



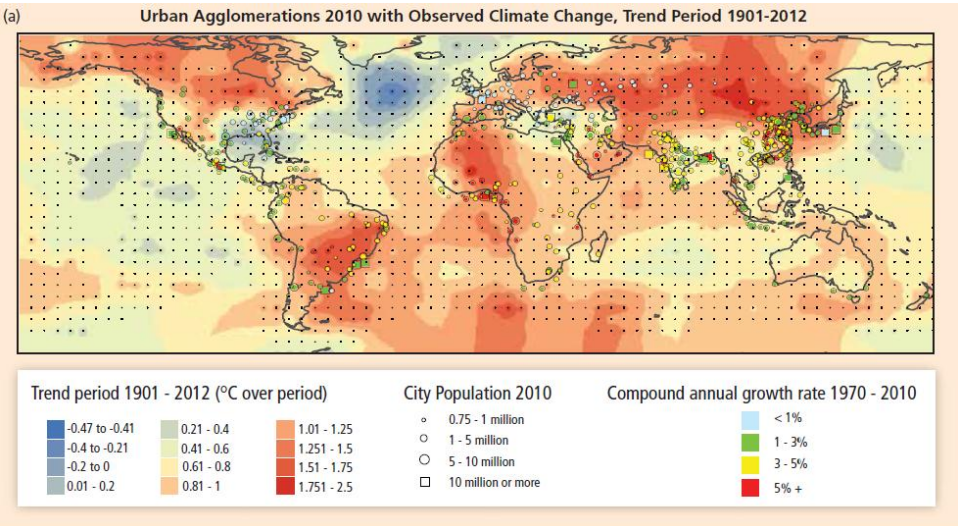
United Nations, Department of Economic and Social Affairs, Population Division (2014).  
*World Urbanization Prospects: The 2014 Revision*, <http://esa.un.org/unpd/wup/index.htm>.

## Urban Centres in Bangladesh, 1950-2030



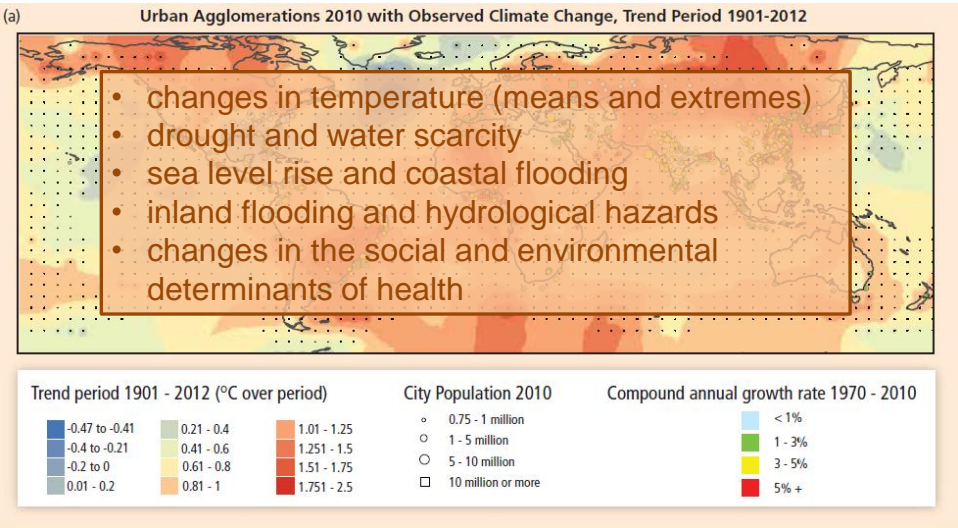
United Nations, Department of Economic and Social Affairs, Population Division (2014).  
*World Urbanization Prospects: The 2014 Revision*, <http://esa.un.org/unpd/wup/index.htm>.

## Changing Cities, Changing Climate



[SOURCE: IPCC (2014). Working Group 2 Chapter 8]

# Changing Cities, Changing Climate



[SOURCE: IPCC (2014). Working Group 2 Chapter 8]

## Estimated Year of “Climate Departure” for Cities

Without carbon dioxide mitigation

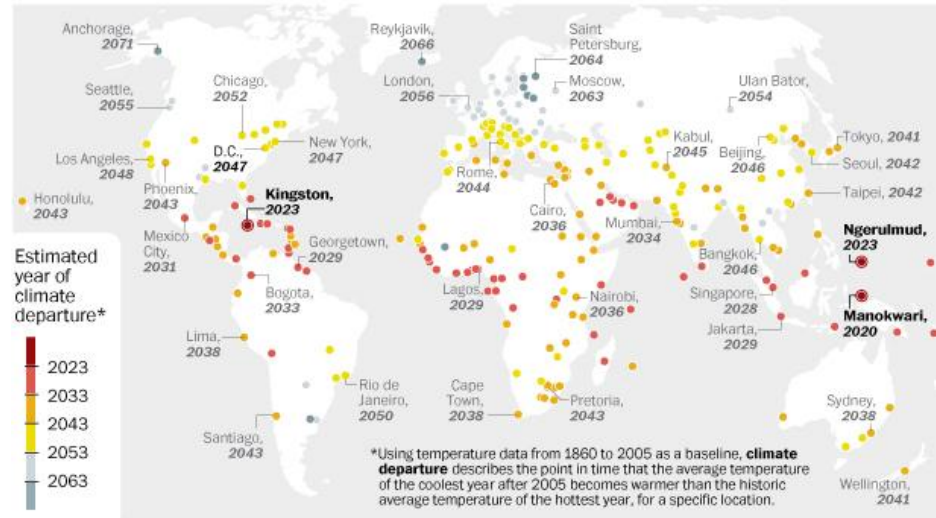


Figure from The Washington Post, 9 October 2013

[<http://www.washingtonpost.com/blogs/worldviews/wp/2013/10/09/map-these-are-the-cities-that-climate-change-will-hit-first/>]

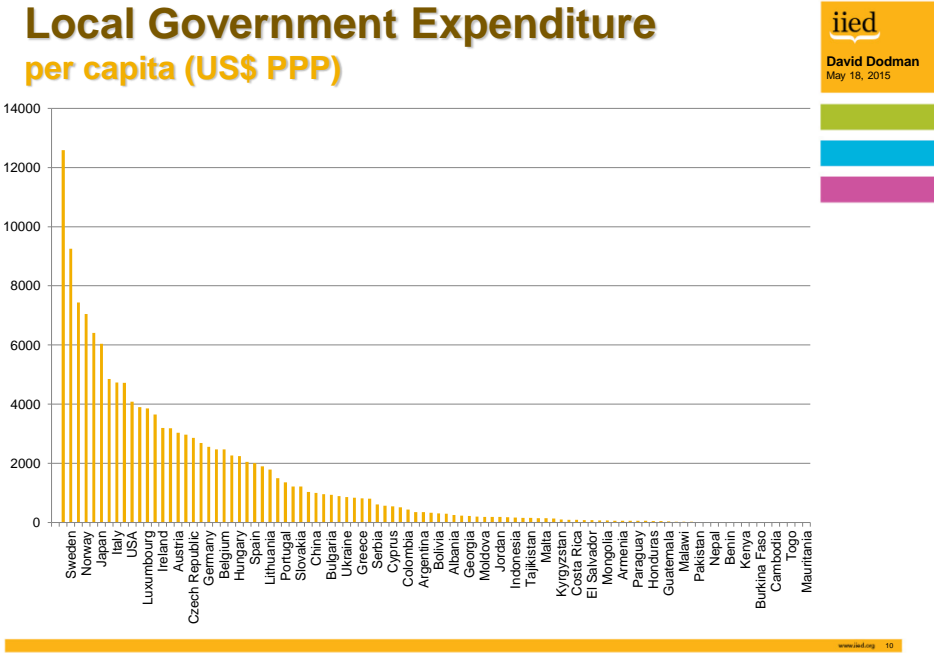
Based on Mora C *et al* (2013). ‘The projected timing of climate departure from recent variability’

Nature 502: 183-187 (10 October 2013)

# The spectrum of urban adaptive capacity

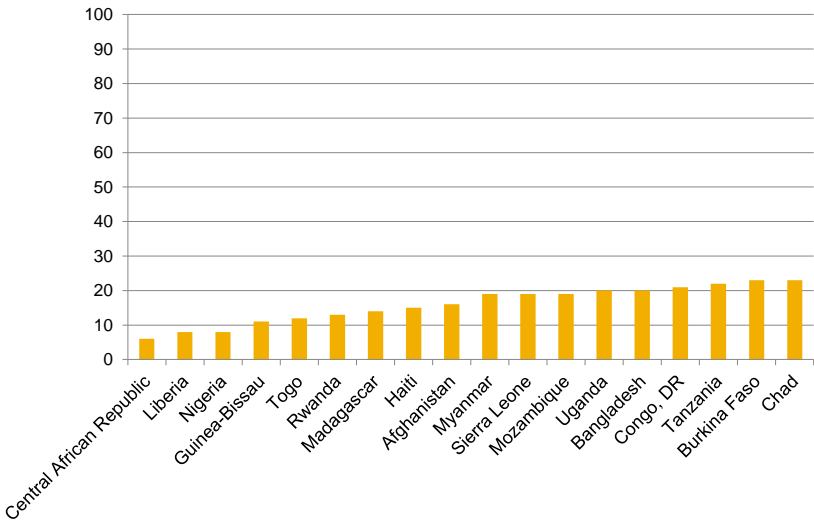
	← Low capacity			→ Radical adaptation	
Indicator	Very little adaptive capacity	Some adaptive capacity	Adequate capacity for adaptation	Climate resilience	Radical or transformative adaptation
Proportion of population served with risk-reducing infrastructure, basic services and institutions, and living in legal housing	0–30% of population served	30–80% of population served	80–100% of population served	Most/all population served; active adaption policy and current/future risk identification; institutional structure encourages actions by all sectors	Most/all population served, with integrated development and adaptation policies; efforts towards mitigation and sustainable ecological footprint
Total population in cities at each capacity level	1 billion people	1.5 billion people	1 billion people	Very few people	Very few people
Distribution of cities at each capacity level	Most urban centres in low-income and many middle-income countries	Many urban centres in many low-income countries and most urban centres in most middle-income countries	Nearly all urban centres in high-income countries, many in middle-income countries	Small proportion of cities in high- and upper-middle-income countries	Some innovative city governments taking some initial steps
Local government investment capacity	Very little or no local investment capacity				Substantial local investment capacity
Frequency of disasters from extreme weather	Very common				Uncommon

[Source: Developed from Table 8.2 in IPCC Fifth Assessment Report (2014), Working Group II.]



# Urban population with piped water

% of population with water piped into premises (2010)



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## Climate Change in Cities Impacts on Urban Sectors



**Infrastructure systems:**  
water and energy supply;  
sanitation and drainage;  
transport and communication

**Services:** health care;  
emergency services

**Built environment**

**Ecosystem services**

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# Climate Change in Cities Impacts on People

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“For each of the direct and indirect impacts of climate change, there are groups of urban dwellers that face higher risks”

Age

Health status

Gender

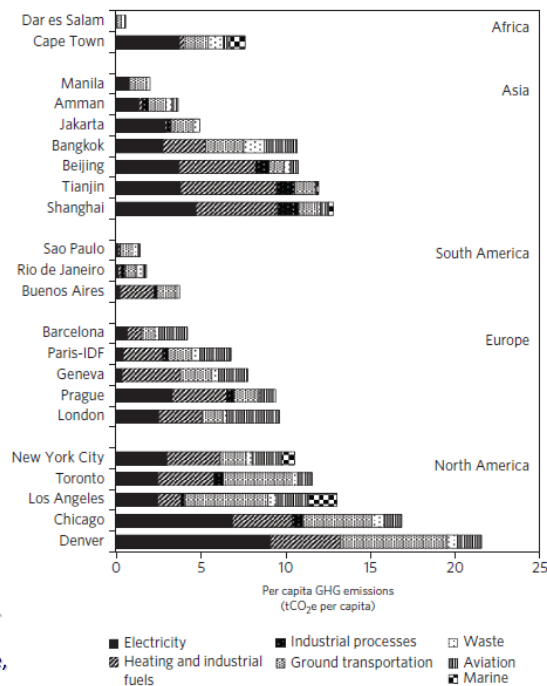
Residents of low-income / informal settlements



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**Why make city plans for responding to climate change?**

**Cities as sources of greenhouse gas emissions...**

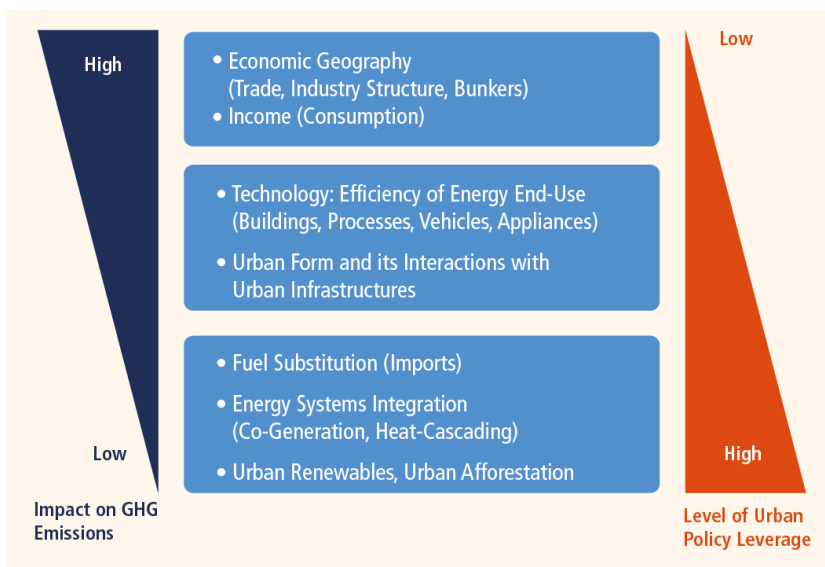


Kennedy C, Ibrahim N, Hoornweg D (2014). 'Low-carbon infrastructure strategies for cities' *Nature Climate Change*. Early online, DOI: 10.1038/nclimate2160.





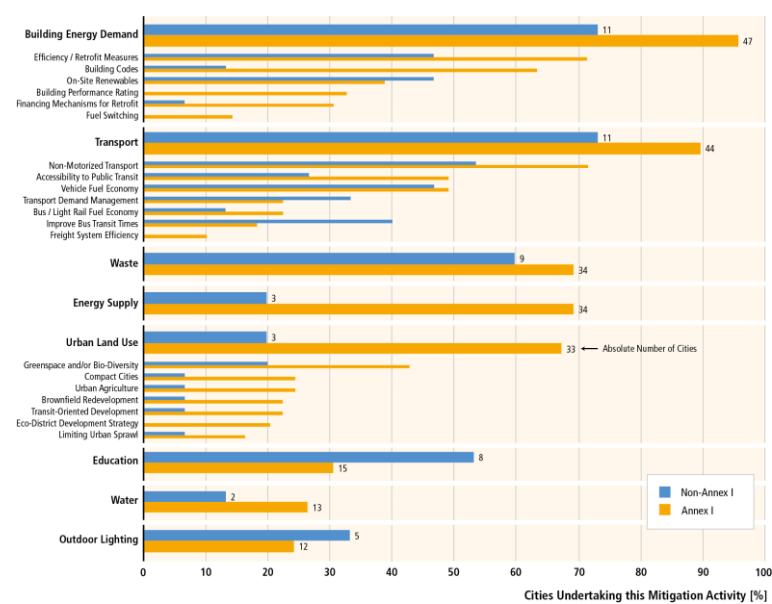
## What can cities do to reduce emissions?



[Source: IPCC Fifth Assessment Report (2014), Working Group III, Fig 12.11]

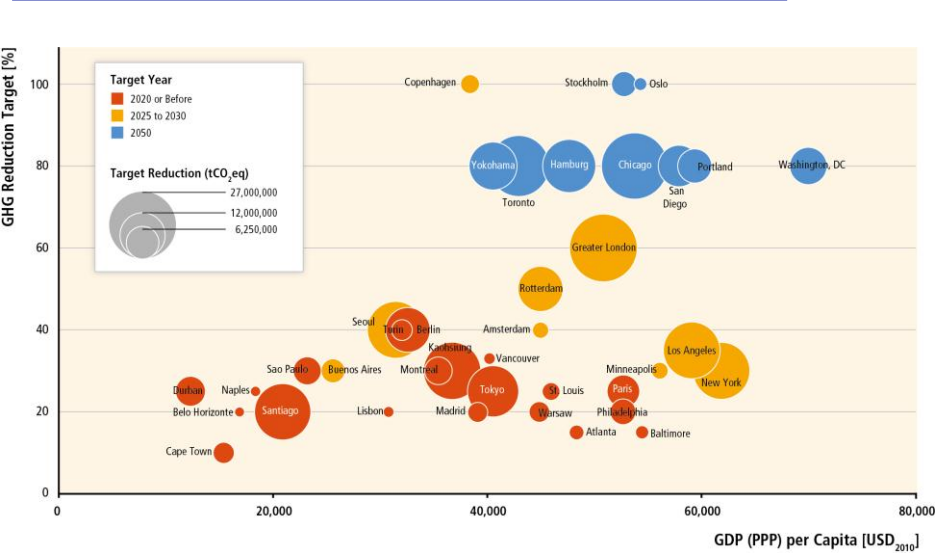


What are cities doing to reduce emissions?



[Source: IPCC Fifth Assessment Report (2014), Working Group III, Fig 12.22 (from Carbon Disclosure Project)]

What are cities doing to reduce emissions?

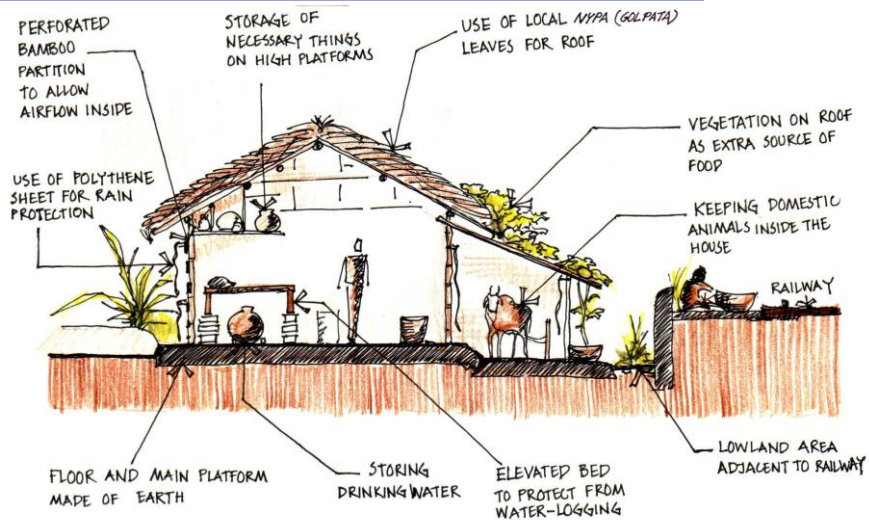


[Source: IPCC Fifth Assessment Report (2014), Working Group III, Fig 12.21 (from Carbon Disclosure Project)]

**Why focus on city responses to climate change?**  
**Cities as sites of vulnerability...**



**Why focus on city responses to climate change?**  
**...and cities as sites of resilience**



[Source: Haque A, Dodman D, Hossain M (2014). 'Individual, communal and institutional responses to climate change by low-income households in Khulna, Bangladesh'. *Environment and Urbanization*: early online edition. DOI: 10.1177/0956247813518681]



Responding to climate change in urban areas

## Building blocks for urban resilience



[Source: Kernaghan S, Da Silva J (2014). 'Initiating and sustaining action: experiences building resilience to climate change in Asian cities' *Urban Climate*, early online, <http://dx.doi.org/10.1016/j.uclim.2013.10.008>]



Responding to climate change in urban areas

## Adaptation for urban areas

- importance of reducing **basic service deficits**, improving housing, and building resilient infrastructure systems
- requires effective **multi-level urban risk governance** with aligned policies, strengthened local government and community adaptation capacity, synergies with the private sector, and appropriate **financing** and institutional development
- adaptation benefits from **increased capacity**, voice, and influence of low-income groups and vulnerable communities and their partnerships with local governments



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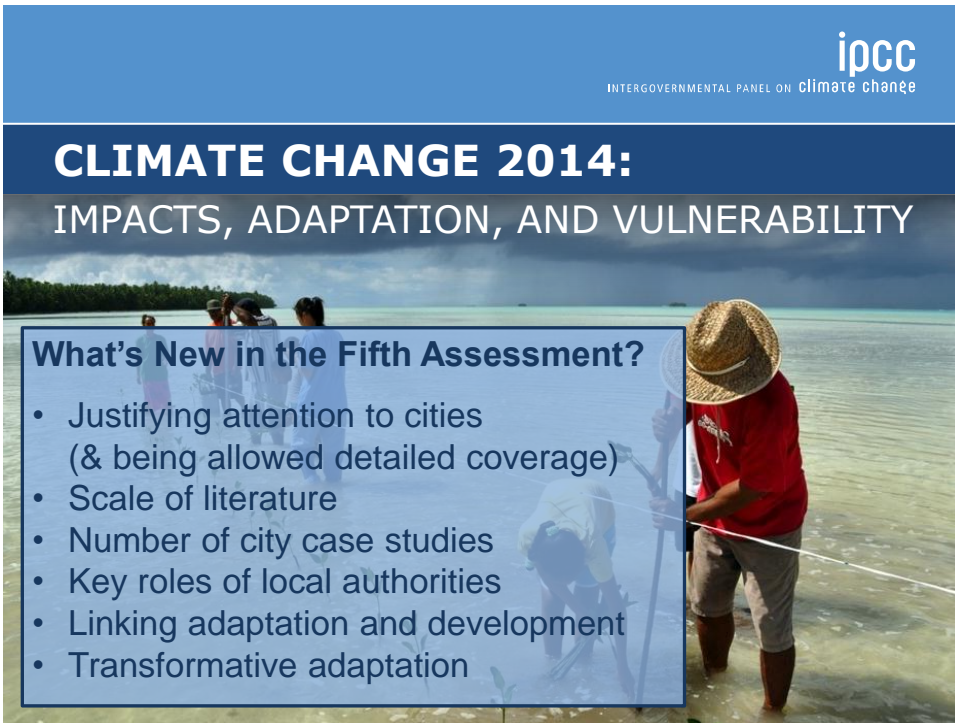


**ipcc**  
INTERGOVERNMENTAL PANEL ON climate change

## CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY

### What's New in the Fifth Assessment?

- Justifying attention to cities (& being allowed detailed coverage)
- Scale of literature
- Number of city case studies
- Key roles of local authorities
- Linking adaptation and development
- Transformative adaptation



## Cities and Global Climate Governance

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May 18, 2015



Cities Climate Registry (2010)  
Durban Adaptation Charter (2011)  
Cities Day at COP19 (2013)  
Compact of Mayors (2014)

**C40**  
CITIES  
cities climate group  
c40cities.org

**UCLG**  
CGLU  
United Cities  
and Local Governments

**ICLEI**  
Local  
Governments  
for Sustainability



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