



Making Research on Climate Change in Bangladesh More Effective

Capacity Building for Urban Disaster Preparedness and Climate Change Mitigation



Presenter

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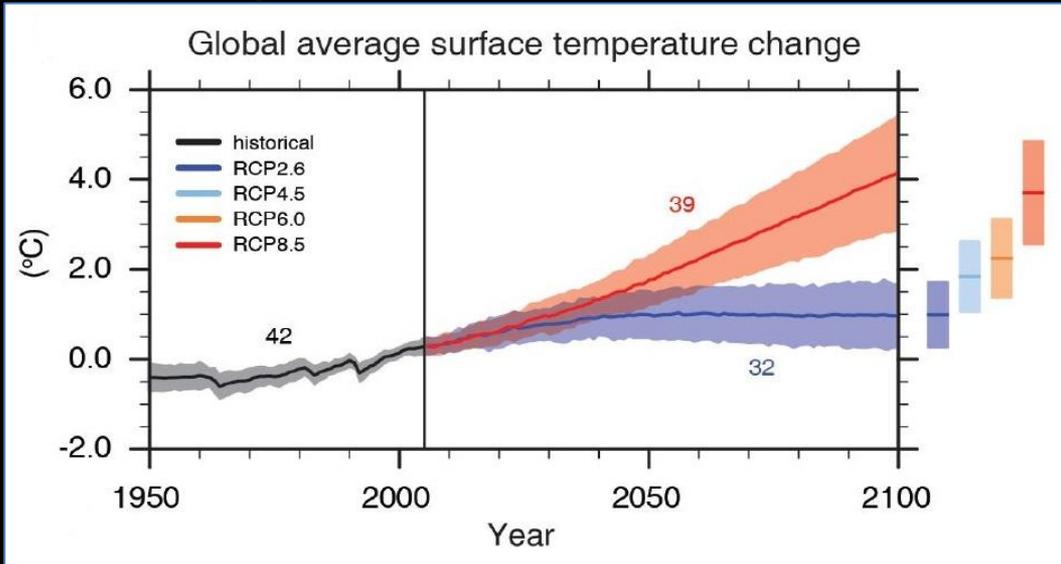
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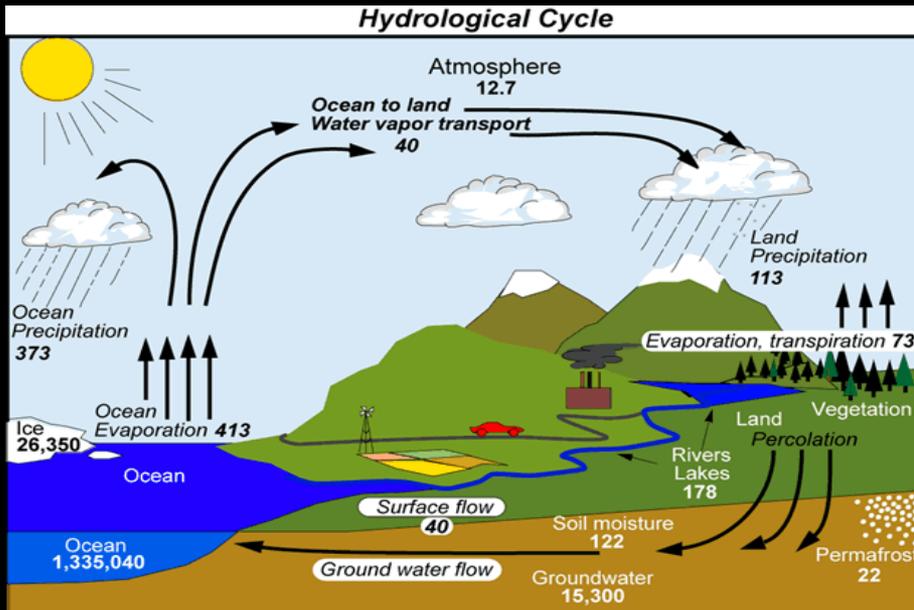
Background

- Cities across the globe, particularly those with **urban poor** communities, face **long-term challenges** in ensuring the well-being of their inhabitants.
- These challenges are partly a result of **direct and indirect impacts** of **climate change** and often compounded by vulnerability.
- Urban **resilience** is the **adaptation capacity** of cities to function.
- The concept of **capacity building** has been useful in **addressing climate risk** and **unexpected events** and in enhancing efforts to survive and succeed in the context of climate change.
- **Capacity building for urban** climate change **embraces climate change adaptation**, mitigation actions of community.

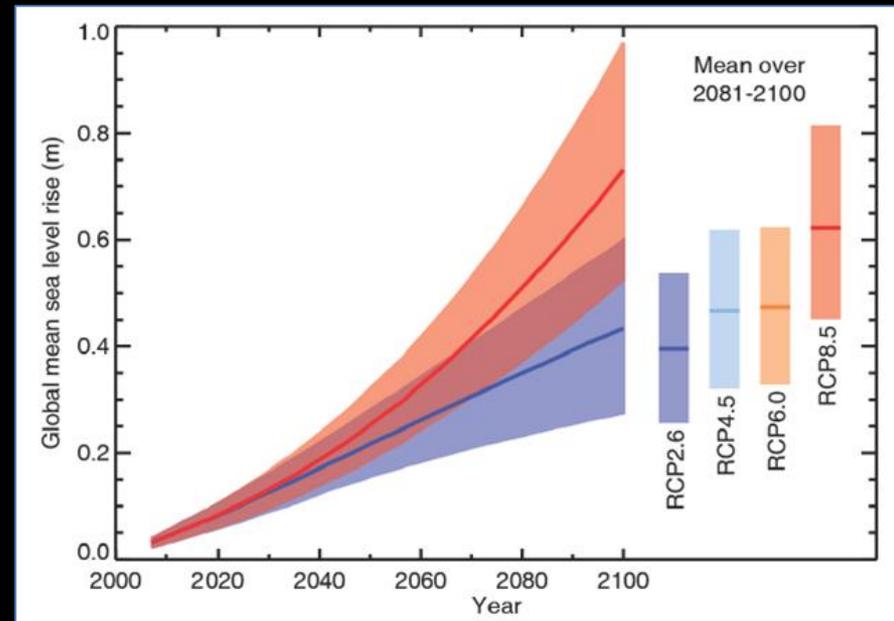
A projection.....



Source: IPCC report, 2014



Units: Thousand cubic km for storage, and thousand cubic km/yr for exchanges



Source: IPCC report, 2014

Objectives

- To classify the causes of disaster which increase the adversity of climate change
- To identify the tools and techniques for improving the preparedness and adaptation capacity
- To provide some policy guidelines to minimize the adverse impact of climate change

Literature Review

Global Impact of Climate Change

Global warming is causing the **melting of glaciers**. In the short term, this **means increased risk of flooding, erosion, mudslides in Nepal, Bangladesh, Pakistan, and north India** during the wet season. Throughout Asia **one billion people could face** water shortage leading to drought and land degradation by the 2050s (Christensen and Cruz. 2007).

Under climate change, glaciers disappear this century, there is likely to be serious effects on peoples' lives and livelihoods and on ecosystems. (Nef 2006, Magrin et al. 2007, UNEP 2007).



Literature Review

Impact of Climate Change in the Local context

Bangladesh lies on a deltaic plain with five major river systems: the **Jamuna-Brahmaputra**, the **Padma-Ganges**, the **Surma-Meghna**, the **Padma-Meghna**, and the **Karnaphuli**. Although *altitudes up to 105 m above sea level occur in the northern part of the plain*, most elevations *are less than 10 m above sea level*; elevations decrease in the coastal south, where the terrain is generally at sea level. (ICDDR B, 2011)

Bangladesh is trapped between the Himalayas in the north and the encroaching Bay of Bengal to the south. Bangladesh is most vulnerable to **natural disasters due to the frequency of extreme climate events** and its high population density. The impacts of higher temperatures, more variable precipitation, more extreme weather events, and sea level rise are already felt in Bangladesh and will continue to intensify. (Afrin T. 2012).





An observation

Since industrial revolution the atmospheric concentration of Greenhouse gasses has been increasing due to fossil fuel burning and changes in landuse practices.

75% emission of CO₂ is due to fossil fuel burning and 25% due to landuse change (deforestation)

Developed countries are mostly responsible for the major emission of greenhouse gases, and least developed countries are the major victims.

Conceptualization

Responsible factors	Result	Impact	Assessment	Mitigating Tools
<ul style="list-style-type: none"> -Use CFC gas -Use fossil fuel -Unplanned urbanization -Decreasing water body -Decreasing open space -Deforestation -Unplanned industrialization -Over vehicles -Using chemical in Agriculture and water body -Using machinery 	<p>Increase Temperature (GHG)</p>	<ul style="list-style-type: none"> -Cyclone -Storm surge -Drought -Sea level rise -Irregularity of rainfall -Water logging & Inundations -Heat wave -Diseases -Habitat loss -Land slide -Riverbank erosion 	<ul style="list-style-type: none"> -Risk Assessment -Risk-Based Land Use Planning -Urban Ecosystem Management -Urban Upgrading -Community and Stakeholder Participation -Disaster Management Systems -Data Gathering Analysis and Application -Risk Financing and Transfer Approaches - GIS/RS applications 	<p>Community Adaptation Capacity</p>

Initial Differences and Areas of Convergence between Disaster Risk Reduction (DRR) and Climate Change Adaptation

Difference		Area of coverage
Disaster Risk Reduction	Climate Change Adaptation	
Relevant to all hazard types.	Relevant to climate-related hazards	Climate-related hazards may in many cases be a worsening of current hazards, some of which may already be the focus of DRR.
Historically focused on humanitarian assistance following a disaster event; increasingly focused on prevention, mitigation and preparedness, including changes to development processes.	Historically rooted in scientific theory.	Climate change adaptation (CCA) specialists now recruited from engineering, water and sanitation, agriculture, health, and DRR sectors. Both DRR and CCA need to be mainstreamed into development decision Processes.
Most concerned with the present, addressing existing risks.	Most concerned with the future, addressing uncertainty/new risks.	DRR increasingly forward-looking. Existing climate variability is an entry point for climate change adaptation
Traditional/indigenous knowledge at community level is one basis for preparedness and resilience.	Traditional/indigenous knowledge at community level may be insufficient for resilience against types and scales of risks that are yet to be Experienced.	Examples where integration of scientific and traditional knowledge for DRR Provide learning opportunities.

Structural measures designed for safety levels modeled on current and historical evidence and risk tolerance.	Structural measures designed for safety levels modeled on predicted changes, current and historical evidence, and risk tolerance. Some adaptation measures might address adaptation from initial responses to disasters that are not sustainable or cost-effective in the long term.	DRR increasingly forward-looking in design of structural measures and safety Standards.
Traditional focus on vulnerability reduction and societal Preparedness.	Traditional focus on reduction of physical exposure through infrastructure investments (for example, sea walls).	There is an increasing focus in climate change adaptation on community focused vulnerability assessments that include measurement and improvement of social resilience.
Community-based process stemming from experience, technical inputs, and external support.	Community-based process stemming from policy agenda.	Communities do not tend to differentiate between current and projected risks, Presenting an opportunity to build resilience to both at the same time.
Full range of established and developing tools (for example, Legislation and institutional arrangements, early warning systems, insurance, building design codes, siting, and ecosystem protection).	limited range of tools under development, evolving and expanding rapidly	Increasing recognition that more adaptation tools are needed, especially those that leverage DRR experience.
Political and widespread recognition often quite weak	Political and widespread recognition increasingly strong	Climate-related disaster events are now more likely to be analyzed and debated with reference to climate change
Funding streams ad hoc and insufficient.	Funding streams dedicated but still small relative to the problem.	DRR community engaging in climate change adaptation funding mechanisms

Policy Guidelines to Achieve the Adaptation Capacity

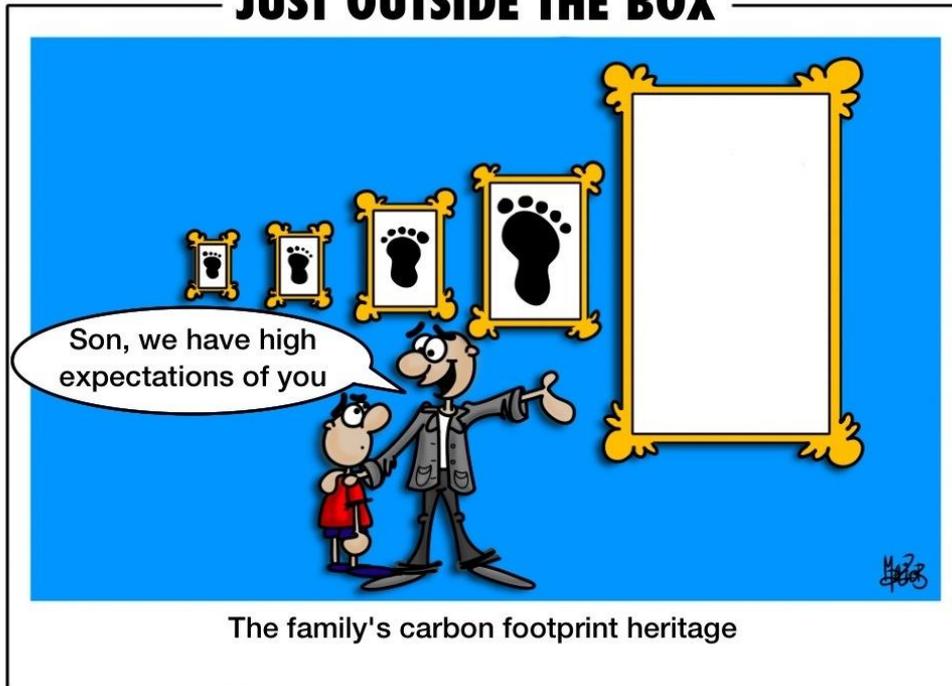
1. **Put in place organization and coordination** to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role regarding disaster risk reduction and preparedness.
2. **Assign a budget for disaster risk reduction and provide incentives** for homeowners, low-income families, communities, businesses, and public sector to invest in reducing the risks they face.
3. **Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments, and use these as the basis for urban development plans and decisions.** Ensure that this information and the plans for your city's resilience are readily available to the public and fully discussed with them.
4. **Invest and maintain critical infrastructure that reduces risk, such as flood drainage, adjusted** where needed to cope with climate change.
5. **Assess the safety of all schools and health facilities and upgrade these as necessary.**
6. **Apply and enforce realistic, risk-compliant building regulations and landuse planning principles.** Identify safe land for low-income citizens and develop upgrading of informal settlements, wherever feasible.

Policy Guidelines to Achieve the Adaptation Capacity

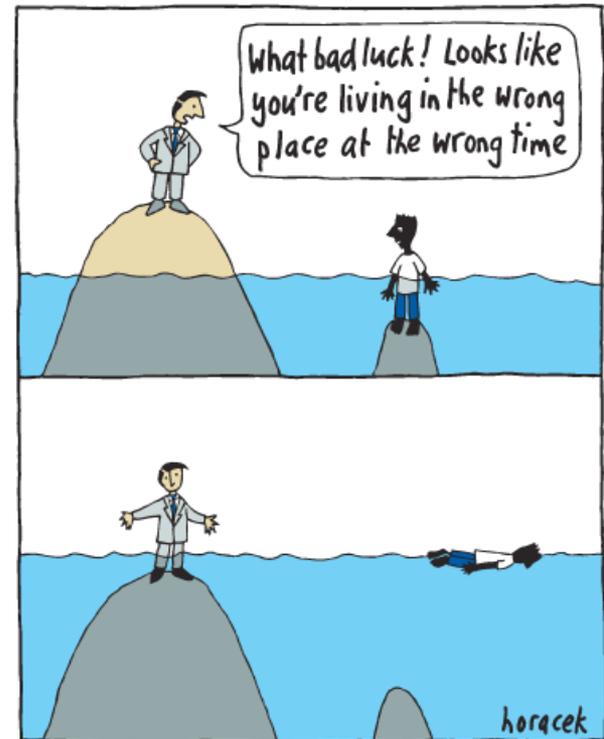
7. Ensure education programs and training on disaster risk reduction are in place in schools and local communities.
8. Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.
9. Install early warning systems and emergency management capacities in your city and hold regular public preparedness drills.
10. After any disaster, ensure that the needs of the survivors are placed at the center of reconstruction with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods



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Victim of Land slide at CHT (Chittagong Hill Tract)



Don't make a geopolitics on climate change and don't avoid your responsibility.....
Only save them.....save them.....and save them.....



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Thanks to all

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