

CHALLENGES AND OPPORTUNITIES FOR BUILDING RESILIENCE IN CITIES- ROLE OF POLITICAL LEADERSHIP

TERI-APN TRAINING PROGRAM ON
BUILDING URBAN CLIMATE CHANGE RESILIENCE

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GOA

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TERI



Floods in
Jammu



Calamity
in
Uttarakhand



Hudhud, Phailin ,
Helen cyclones

- Recent calamities in India have drawn attention not only towards the great damage climate events can instill on settlements but also towards the uncertain climate conditions that might await us in near future

- Urban development has assumed important position in national agenda given the growth rate and increasing GDP contribution of the urban centers to nation's economy.

- However, the nature of urban development so far is not only putting pressure on the resources but is also oblivious of climatic factors, thus impacting the environment negatively



Climate change impacts pose additional pressures

Floods

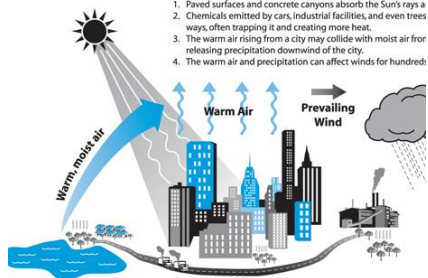


Water shortage



Urban Heat Island Effect

- Urban areas influence the atmosphere through a number of factors:
1. Paved surfaces and concrete canyons absorb the Sun's rays and re-emit them as heat.
 2. Chemicals emitted by cars, industrial facilities, and even trees trap the heat, often trapping it and creating more heat.
 3. The warm air rising from a city may collide with moist air from the surrounding areas, releasing precipitation downwind of the city.
 4. The warm air and precipitation can affect winds for hundreds of miles.



Urban Heat Island Effect



Storms



Development goals of the cities are seriously undermined by climate change impacts

• Climate change will have impacts on many sectors



Temperature and precipitation variability will impact agriculture and subsequently food security and livelihoods, will increase the extent and severity of vector borne diseases as incidence of floods and water logging increase,



Flooding will cause loss and damage to infrastructure and property in affected areas



Sea level rise will cause damage to coastal ecosystems, increase damages from storm surges and will make coastal freshwater aquifers saline.



Climate induced disasters will have serious economic and social consequences like loss to property, infrastructure, health, forced migration to name a few

- Climate change impacts will exacerbate existing development challenges like health, education, livelihood, housing, infrastructure and services, and poverty
- Climate change , if not accounted for will be an additional burden and greatly hamper development goals.

- There is a strong need therefore, to incorporate climate resilience considerations into
 - City systems (Infrastructure, services, sectors)
 - City planning (Development norms, land-use planning)

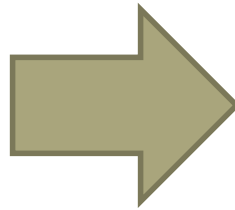
Resilient cities in the light of climate change should be able to develop plans for future development and growth bearing in mind the climate impacts that the urban systems are likely to face*.

Climate resilience is not about development in new way.

It is about adding climate variability and change considerations in the planning and development framework to ensure long term sustainability and preparedness to climate change

Cities across the world are engaging in planning for climate resilience.....

.....transforming their systems to address climate variability and change without compromising on present development challenges.

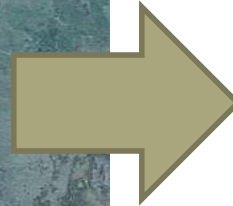


Sea walls, bunds and dykes



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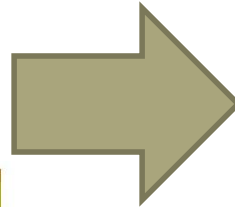
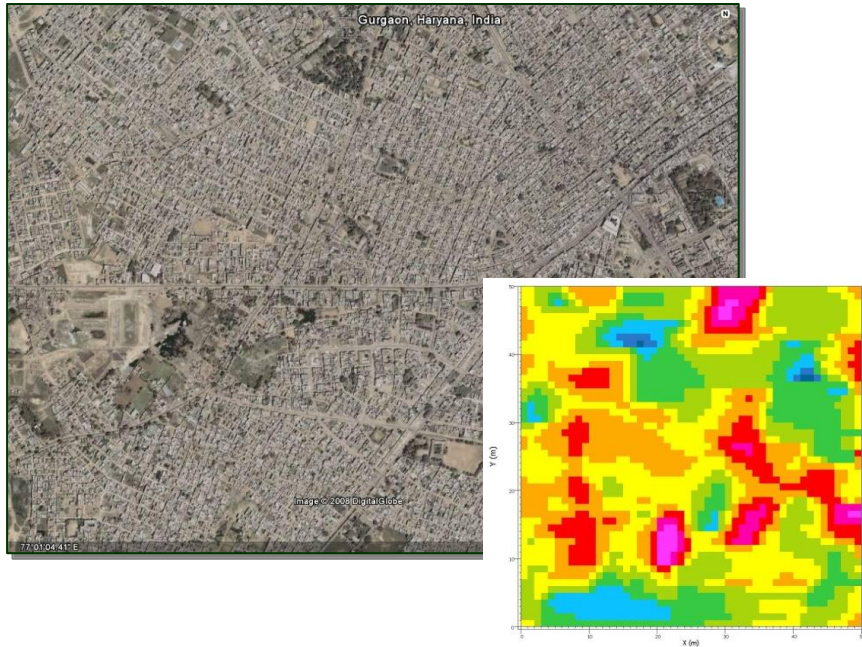


safe and affordable housing



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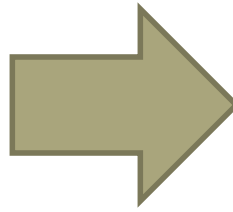


cool roofs for thermal comfort



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urban greenery

How are climate resilient cities different or better?

- Climate resilient cities have the capability to reduce and manage the negative impacts of climate change because they have planned and factored these changes in their development goals and planning by:
 - Utilizing climate information (past and future) to identify climate stressors typical to their cities/region
 - Preparing and implementing strategies to reduce vulnerability of population and city systems.
 - Adapting to change, preparing and responding to disasters, mitigating GHG emissions

Responding to Climate Change : From Reactive to Proactive Action

Reactive (driven by actual perceived climate variability)

Proactive (driven by climate forecasting / future scenarios)



Disaster mitigation/
response
(post
extreme
event)

Disaster preparedness
measures
(based on
current
variability)

“Climate
proofing”
at project
level

Mainstreaming
climate forecasts
into sectoral
policies and
processes

Strategic
multi-
stakeholder
adaptation
and
mitigation
planning

Key actors:

Households,
CBOs, aid/relief
organizations

Private
developers,
insurers,
development
NGOs

Sectoral
agencies
(environment,
water, housing,
etc.)

Centralized unit
(“climate czar”)
with strategic
planning
authority

- **Key steps:**

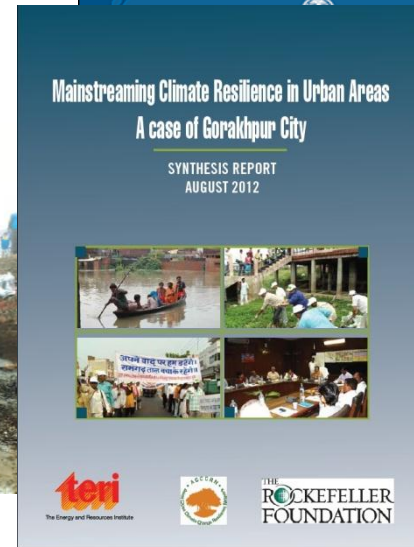
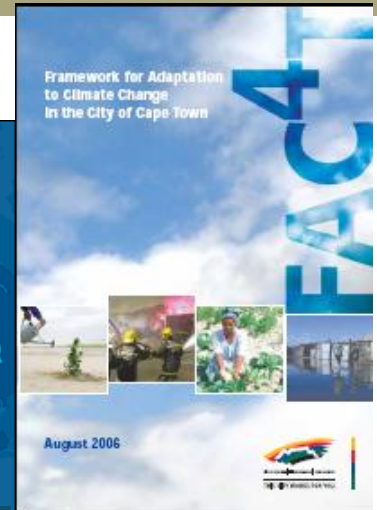
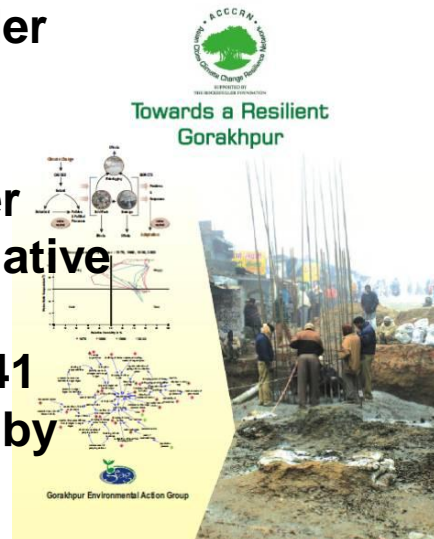
- Urban profiling
- Identification of current and future climate stressors
- Understanding risks and vulnerabilities
- Identification of strategies to reduce vulnerability and manage risks-develop resilience
- Steering governance processes, regulations and institutions for long term benefits
- Locating finance
- Involving community throughout

How to plan for climate resilient cities? Are there general rules to follow?



Indian cities planning for resilience

- Surat, Indore , Gorakhpur , Guwahati, Shimla, Mysore, Bhubaneswar under ACCCRN
- Kanpur and Meerut under WWF initiative
- Delhi and Mumbai under Clinton Foundation Initiative
- Climate roadmaps for 41 Indian cities supported by ICLEI-SA



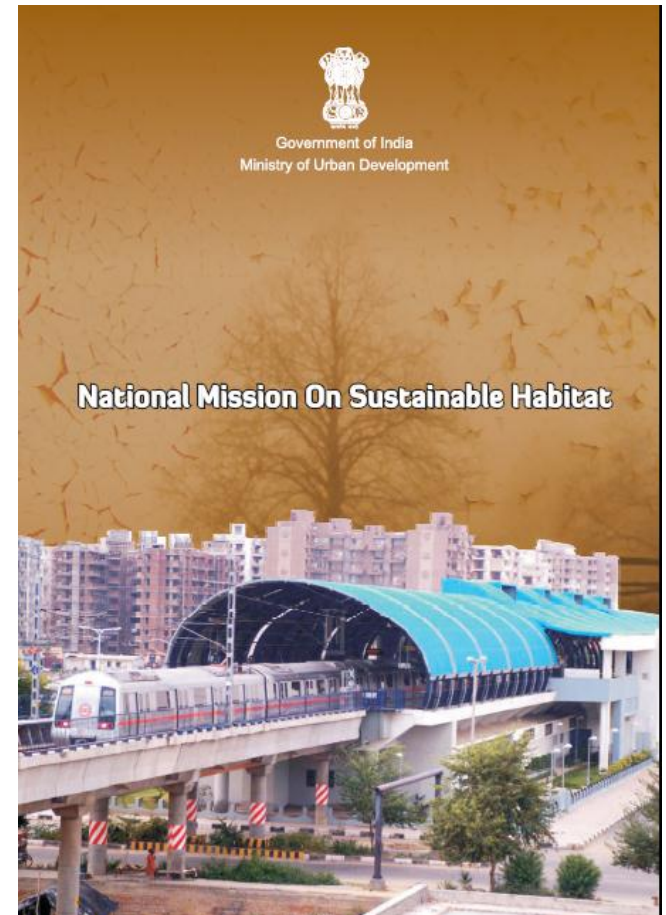
International Programs supporting Resilience

- Asian Cities Climate Change Resilience Network
- Cities Development Initiative of Asia
- UNHABITAT's cities and climate change initiative
- Rockefeller Foundation's recent 100 resilient cities program
- USAID's Climate Change Resilient Development(CCRD) program have been working towards addressing knowledge gaps with improved mechanisms to support cities to be climate resilient.
- Global Resilience partnership
- ADB's Urban Climate Change Resilience Partnership(UCCRP)

.....to name a few

National Programs –existing and Future opportunity

- **National and state level:**
 - National Mission on Sustainable Habitat
 - State action plan on climate change
 - National schemes like UIDSSMT, RAY, BSUPS
 - Smart cities program
- **Local level**
 - Master planning process
 - District disaster management plans
 - Zoning regulations/ building bye laws
 - CDPs/ DPRs



Challenges

- Lack of understanding of the impacts of climate change and the fact that adaptation interventions are best employed and covered at local level.
- Creating awareness amongst the local government that adaptation is synonym to their functions and their development goals
- Already pressing development pressures might overlook adaptation issues
- Integrating adaptation at municipal level would be difficult because of the perception of contest for budget.
- Lack of capacity within the local government .
- Development plans of cities do not factor climate change related factors in a targeted way.
- Translation of global impacts of climate change to local level (downscaling) has been missing
- Lack of data and modeling framework at the city level

Need for a robust 'Institutional Policy Arena' To be made available to support city resilience building

Key Enablers

- ❖ **Policy and mandate** at national and state level
- ❖ **Integration of climate agenda** with city development agenda
- ❖ **Institutionalization** of urban climate resilience planning.
- ❖ **Strong Political leadership** at local and state level
- ❖ Use and involvement of **local expertise** to generate context specific locally driven solutions
- ❖ **Capacity building** and awareness generation to generate momentum and facilitate action at all levels
- ❖ **Access to knowledge** on climate variability and change
- ❖ **Data management** and updating to facilitate decision making

Thank You for Joining

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