

IMPACT OF CLIMATE CHANGE ON CITIES

TRAINING PROGRAM ON URBAN CLIMATE CHANGE RESILIENCE IN INDIA

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Contents

- Vulnerability of Cities
- Direct Physical Risks of Climate Change on Cities.
- Associated Impacts on Urban Systems

Vulnerabilities of Cities

- Cities house
 - More than half of the world's population,
 - Trade, businesses, economic activities
 - Built assets
- Cities are the centres of economic growth generating more than 80% of the global GDP
- Urbanization and economic growth go hand in hand.
- Cities also responsible for a significant share of the GHG emissions and consequent climate change.
- Due to high concentration of people, economic activities, business, property and livelihood.

Cities will be hit hard by Climate Change

Imperative to understand the impacts of Climate Change on cities.



Direct Physical Impacts

Sea level rise



Increase of cyclones



Increase of heavy precipitation events



Climate Change
A unique
challenge
for cities.



Increase of extreme heat events & droughts

SEA LEVEL RISE

- Impact on large population and crucial economic assets.
- Impact on coastal and port cities.
- Flooding of wetlands and tidal flats.
- Erosion of beaches, sedimentation of river floors in estuarine zones.
- Decreasing coastal aquifers affect fresh water supply and peri-urban agriculture.



INCREASE IN HEAVY PRECIPITATION EVENTS



Landslides



Flooding



Disruption of Traffic



Massive destruction
of lives and property

INCREASE IN EXTREME HEAT EVENTS



Increased use of mechanical means for thermal comfort and climate control.

Increase in heat island effect.

Effect on demand and supply of energy.

Increased incidences of diseases.

Lowers overall human productivity and efficiency.

INCREASE IN EXTREME DROUGHT AFFECTED AREAS

- Water shortages due to changes in precipitation.
- Water stress due to increased water demand
- Decline of water quality.
- Reduced food supplies.
- Raised food prices & food insecurity.
- Frequent power outages (when hydropower source of electricity)



INCREASE IN FREQUENCY AND INTENSITY OF CYCLONES

- Large scale destruction of lives, property and assets and ecosystems.
- Inundation and Power shutdowns
- Disruption of normal lives, business, and economic activities for several days.
- Heavy financial burden to bring the city back to normalcy.
- Vulnerable to the outbreak of water borne diseases.



Associated Impacts on Urban Systems

- Complex systems with extensive interlink ages.
- Impacts on a broad spectrum of city functions, infrastructure and services:
 - Impacts on economic activities
 - Impacts on physical infrastructure
 - Damage of lives and property
 - Impacts on urban poor
 - Health
 - Air Pollution
 - Nutritional issues
- Aggravates the existing stresses in the city
- Disruption of physical infrastructure impairs the functioning of the city.
- Eventually impacts living conditions, economic activities and livelihood of the city.
- Damage particularly severe in low lying coastal cities where most of the worlds' largest cities are located



Cities need to...

- Identify risks and vulnerabilities
- Tackle the impacts of climate change and direct the focus on developing climate resilient urban systems.
- Consider both current and future climate risks as well as other likely changes in the urban environment for climate resilient urban planning

THANK YOU