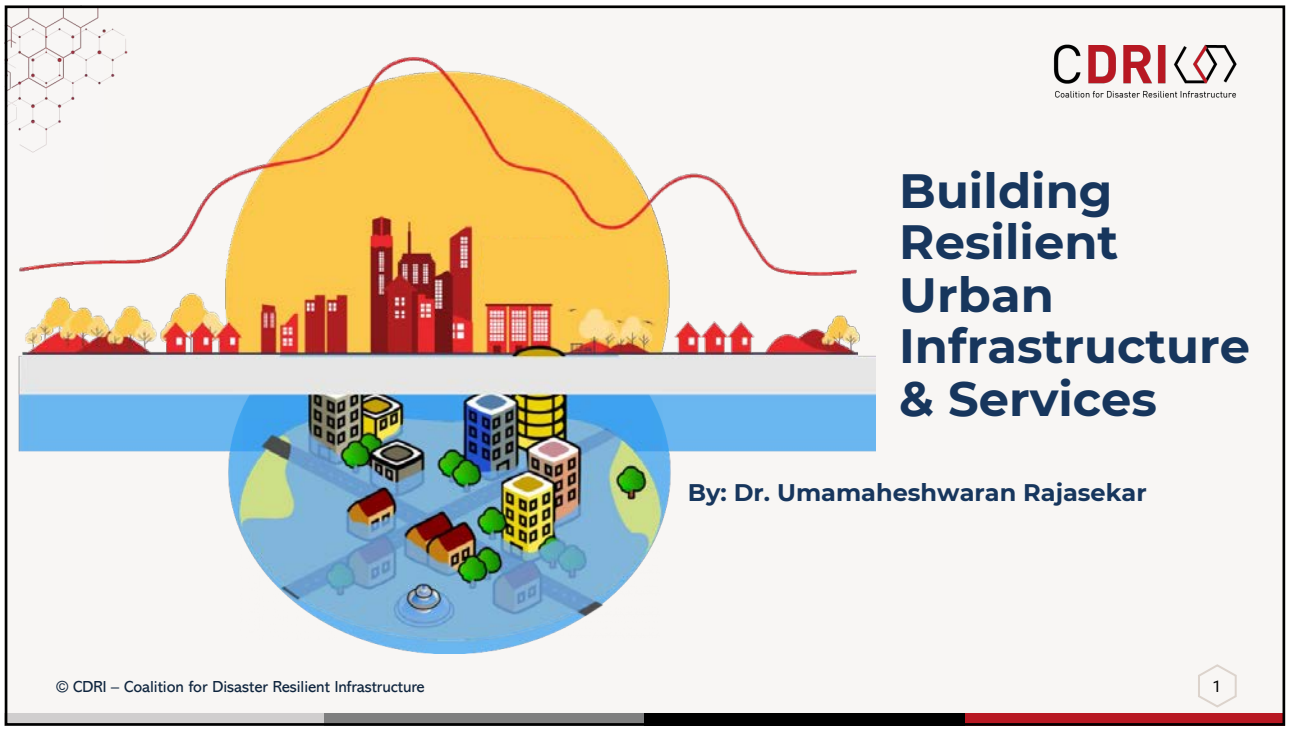
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Coalition for Disaster Resilient Infrastructure
Building Resilient Urban Infrastructure & Services
By: Dr. Umamaheshwaran Rajasekar
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About CDRI
CDRI
Coalition for Disaster Resilient Infrastructure
The Coalition for Disaster Resilient Infrastructure (CDRI) is a partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions that aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development
A Solution-Focused Centre of Excellence for DRI
As a Centre of Excellence for DRI, the Coalition strengthens the individual and collective capacities of its members and partners by aggregating and sharing knowledge, brokering need-based partnerships, and strengthening capacities through collaborative learning and action.

2

Global Coalition

39 COUNTRIES **7** ORGANIZATIONS

ADB · WORLD BANK GROUP · European Investment Bank · UNDP · arise · UNDRR UN Office for Disaster Risk Reduction

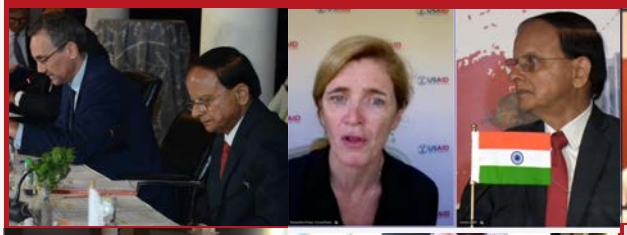
AFGHANISTAN
ANTIGUA AND BARBUDA
ARGENTINA
AUSTRALIA
BANGLADESH
BHUTAN
BRAZIL
CANADA
CHILE
CUBA
DOMINICAN REPUBLIC
FIJI
FRANCE
GERMANY
GHANA
GUATEMALA
GUYANA
HAITI
HONDURAS
INDIA
ITALY
JAMAICA
JAPAN
MALDIVES
MADAGASCAR
MAURITIUS
MONGOLIA
NAURU
NEPAL
NETHERLANDS
PERU
SAMOA
SOUTH SUDAN
SRI LANKA
TAJIKISTAN
TONGA
TÜRKIYE
UNITED KINGDOM
UNITED STATES OF AMERICA

3

Governance

Governing Council

Co-Chairs
India-UK, 2020-22 | India-US, 2022-24 | India-France, 2024-26



Governing Council Meeting: April 2024

Governing Council
Co-Chairs Dr. P. K Mishra, Govt. of India, Ambassador Aurelien Lechevalier, Govt of France

Former Co-Chairs: Administrator Samantha Power, USAID

Former Co-Chairs, The Rt Hon'ble Alok Sharma MP, Govt. of UK

4


Strategic Work Plan 2023-2026
CDRI
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"By 2050, over $10 trillion of new and existing infrastructure investments and services are resilient to natural hazards and climate change through enhanced capacity, informed policy, planning, and management leading to improved quality of environment, livelihood and life of over 3 billion people."
SO1
Advocacy, Governance, Partnerships
SO2
Research, Knowledge Management and Capacity Development
SO3
Programmes and Technical Assistance
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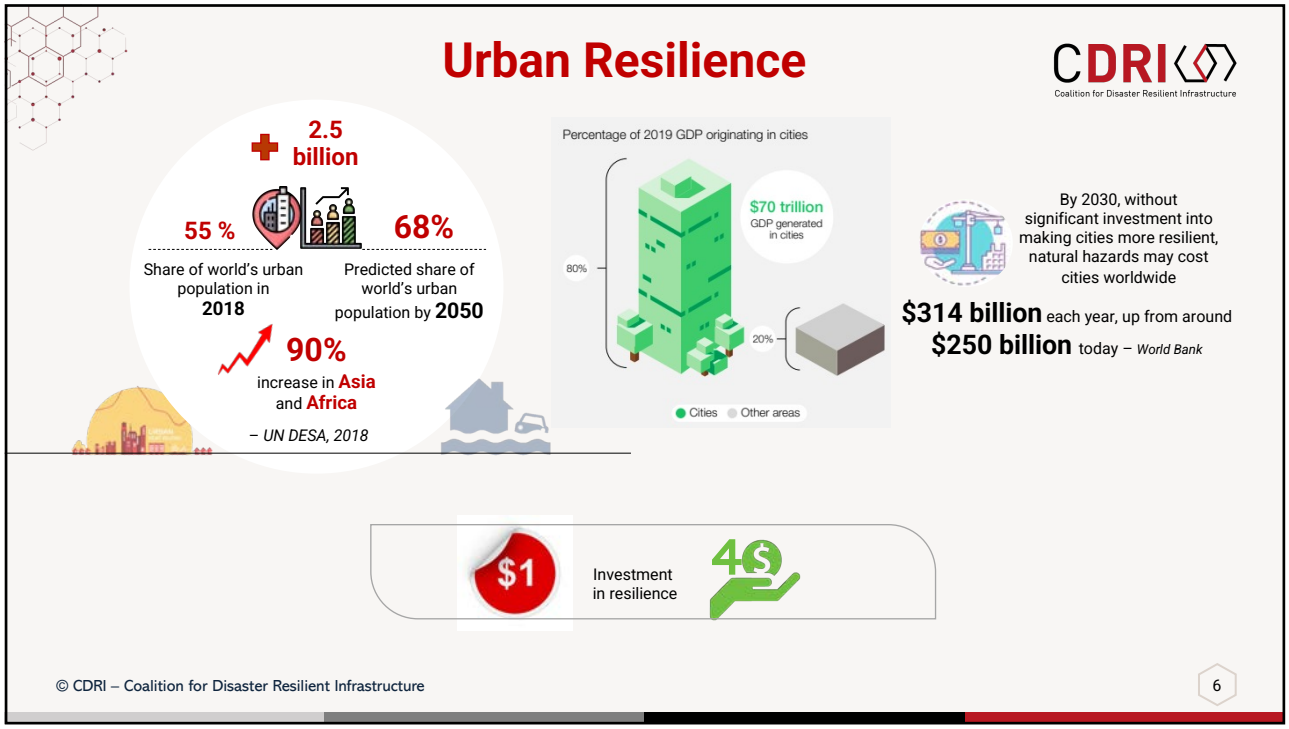
Urban Resilience
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2.5 billion
55 %
Share of world's urban population in 2018
68%
Predicted share of world's urban population by 2050
90%
increase in Asia and Africa
– UN DESA, 2018
Percentage of 2019 GDP originating in cities
$70 trillion
GDP generated in cities
80%
20%
Cities
Other areas
By 2030, without significant investment into making cities more resilient, natural hazards may cost cities worldwide
$314 billion each year, up from around $250 billion today – World Bank
$1
Investment in resilience
4$
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Impact on Infrastructure

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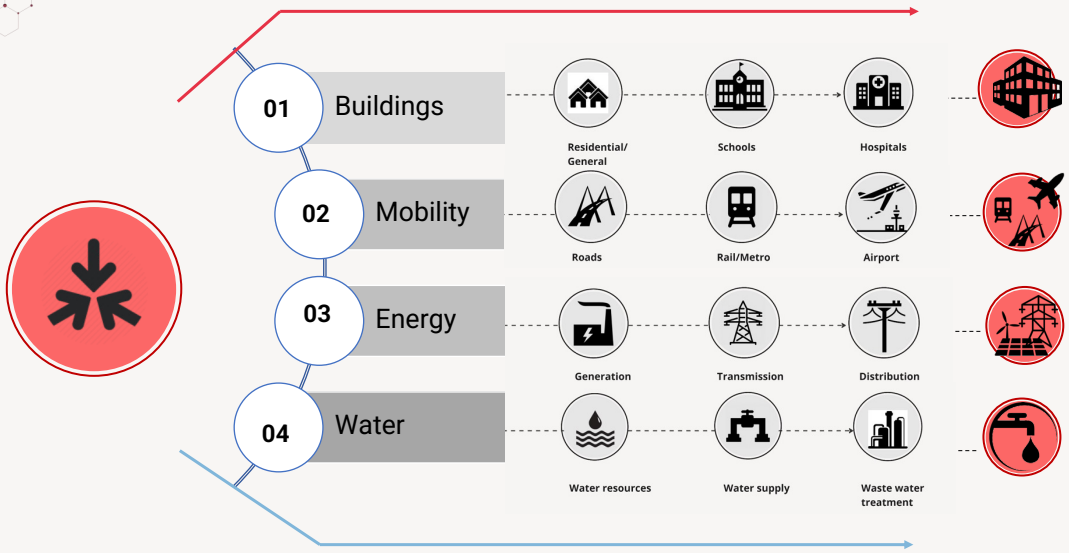


7

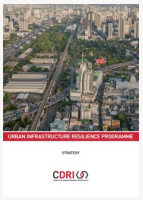
6. Urban Infrastructure Resilience Programme (UIRP)

CDRI

UIRP aims to enhance urban livability by promoting resilient infrastructure planning and implementing data-driven decision-making processes to manage urban shocks and stresses

The initial work will focus on climate change-related hydro-meteorological challenges, such as

Temperature extremes | Flooding | Water scarcity & security



OUTCOME

Improved Urban Infrastructure Resilience Across Low- and Middle- Income Countries

OBJECTIVES

City infrastructure environment, services and systems are resilient against climate extremes through:

- Improved engagement with Member Countries and Partner Organizations
- Increased access to infrastructure finance through MDBs/investment banks/financing corporations
- Access to data, tools and knowledge by Urban Local Bodies (ULBs) leading to improved design, operation, and maintenance of infrastructure.

8

Urban solutions

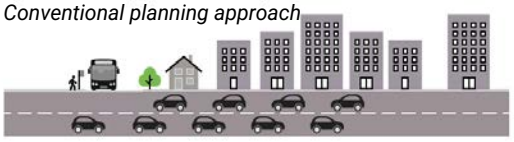
9

Urban Planning

LULC based planning → Network based planning

- Integrating resilience in urban planning
- Risk-based land use planning
- Integration of blue and green infrastructure

Conventional planning approach



Planning approach for cities of tomorrow

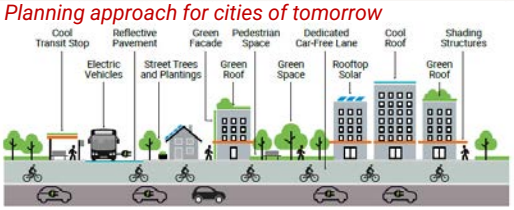


Image source: Both images are taken from "Beating the heat" handbook by UNEP

10

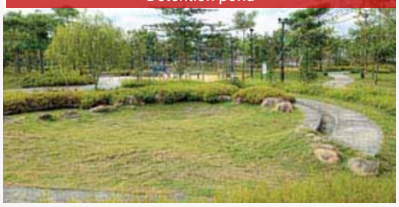
Nature-based Solutions

Sustainable Drainage System (SuDS)

Source Control

Bioretention swales

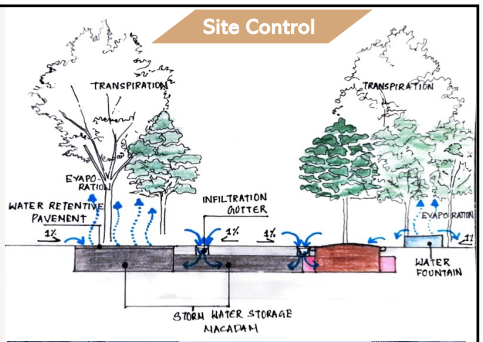
Detention pond



Landscaped green roof and rooftop garden

Infiltration basins

Site Control



Green Pedestrian Axis, Tokyo

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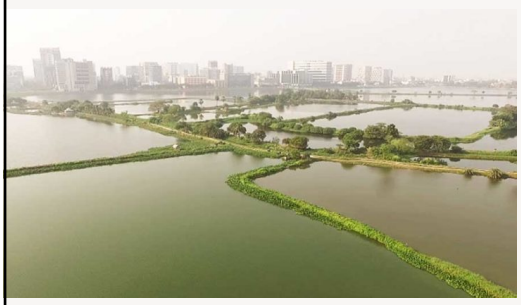
Nature Based Solutions

The East Kolkata Wetlands Management



Adyar River Restoration in Chennai

Before

After

Mangrove Management in Mumbai

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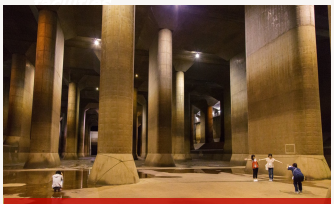
Engineering Solutions

Flood Barriers

The Maeslantkering, Rotterdam

The Thames Barrier, London

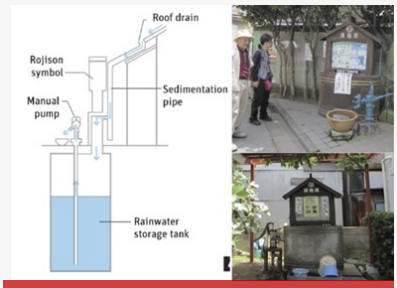
Stormwater drains, detention and retention



Floodwater Diversion Facility, Tokyo

Stormwater Storage Scheme, Hong Kong

Chicago Deep Tunnel



Community Level Rainwater Harvesting, Tokyo

Building Level Rainwater Harvesting: Parkroyal Collection Pickering, Singapore

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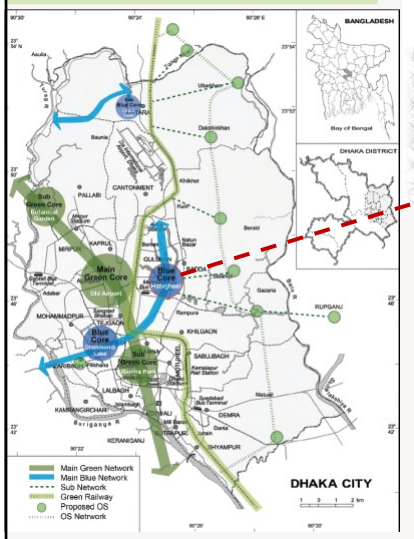
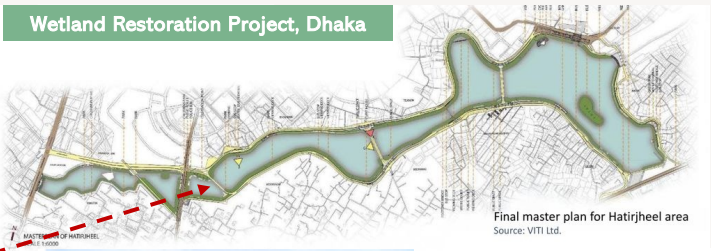
Hybrid Solutions



Wetland Restoration Project, Dhaka



Final master plan for Hatirjheel area
Source: VITI Ltd.

Before

After

Development of Hatirjheel area
Source: SWO

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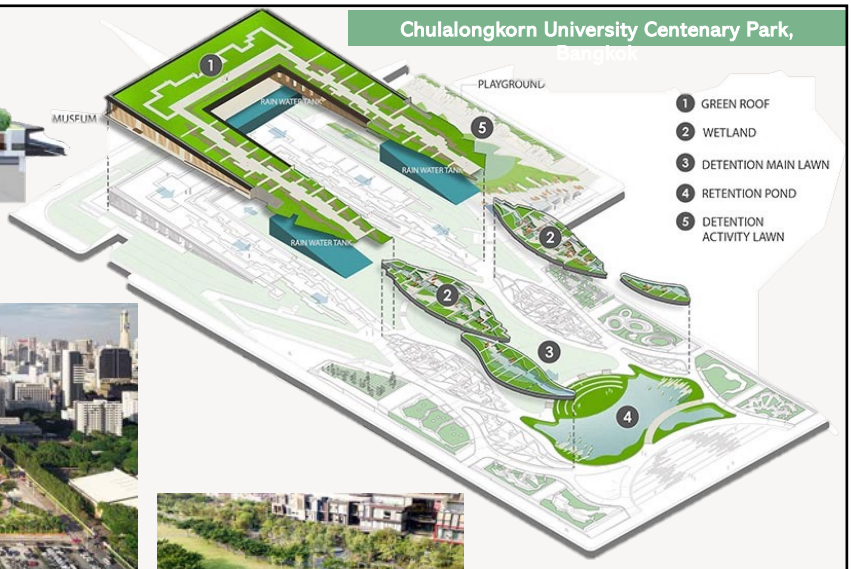
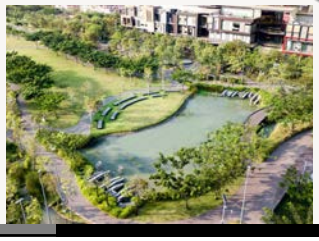
Hybrid Solutions

Chulalongkorn University Centenary Park, Bangkok





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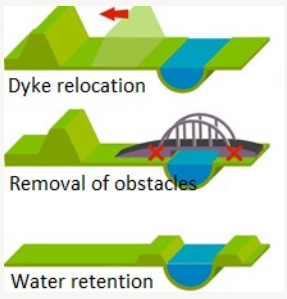
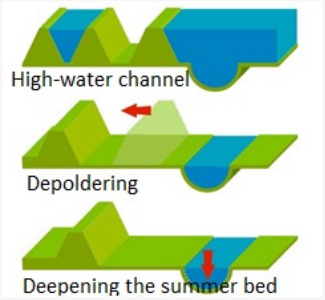
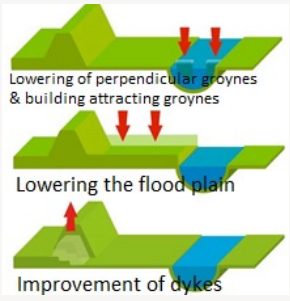
Room for River

Before

After







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Mainstream Disaster Management

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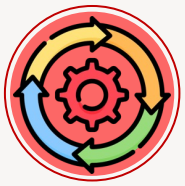
Post Shock Mgt → Mainstreaming



- City level DM cells
- Implementation of mitigation and adaptation mechanisms
- Risk Informed Budgeting and Disaster Risk Financing

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Policy Solutions

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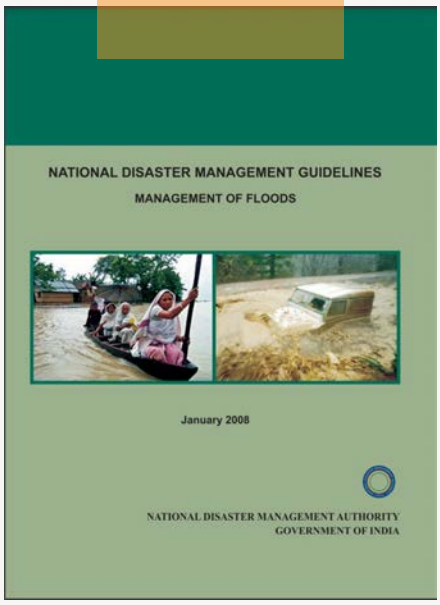

GUIDELINES FOR FLOOD MANAGEMENT

To minimize vulnerability to floods and consequent loss of lives, livelihood systems, property and damage to infrastructure and public utilities.

20

20

SOP FOR URBAN FLOODING

It lays down, in a comprehensive manner, the specific actions required to be undertaken by various departments and agencies in a city/town and also organizations under the district administration as well as State Government for responding to urban flooding/disaster of any magnitude

21

21

URBAN RIVER MANAGEMENT

URMP is a planning framework developed for helping the cities along the Ganga River plan for interventions systematically and holistically, to revive and maintain the rivers in their areas in a sustainable manner. Its overall objective is to assist Ganga towns in improving the state of the river in their stretch.

22

22

CLIMATE SMART CITY ASSESSMENT FRAMEWORK

Urban Planning, Green Cover & Biodiversity

Energy and Green Buildings

Mobility & Air Quality

Water Management

Waste Management

23

23

Data informed decisions

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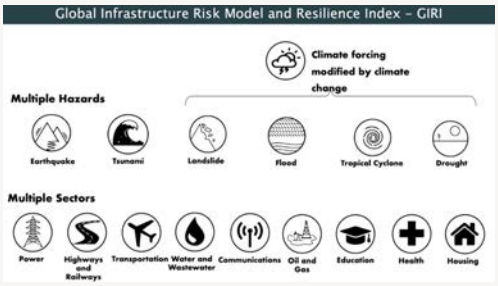
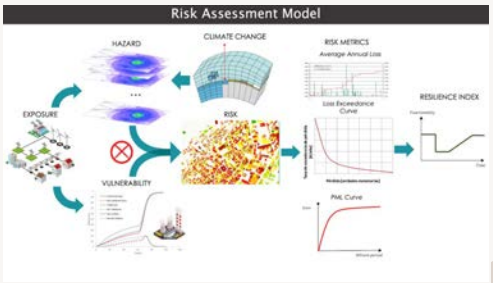
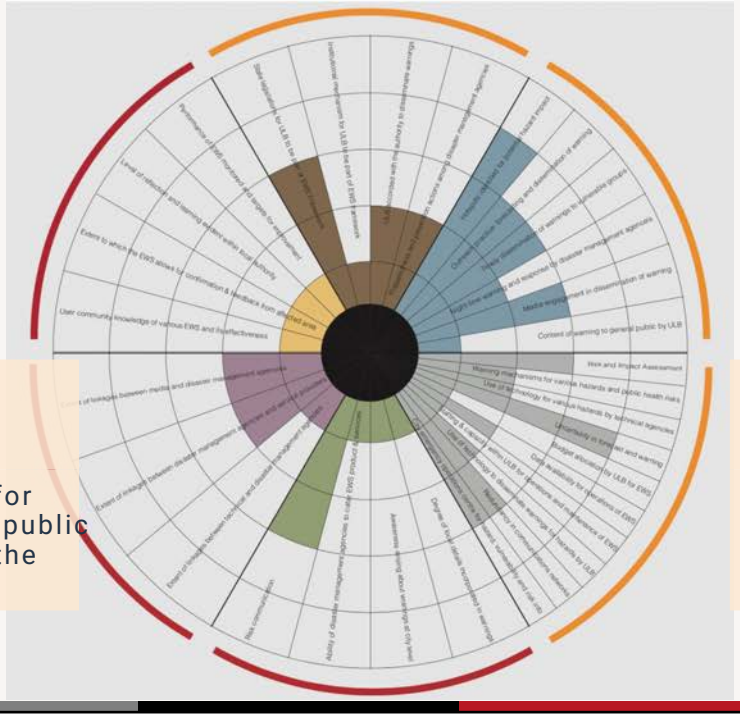
Data support to city governments for decision making

Data platform for collating and visualizing geospatial data for decision making or infrastructure planning / design

Infrastructure Resilience and Resilience of Infrastructure



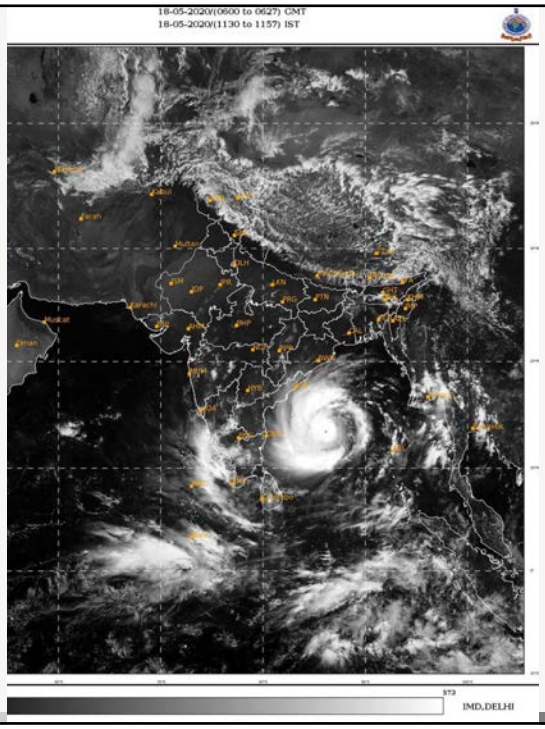




EARLY WARNING SYSTEM

City level warning systems for hydro-met, geophysical and public health hazards are need of the hour

Surat



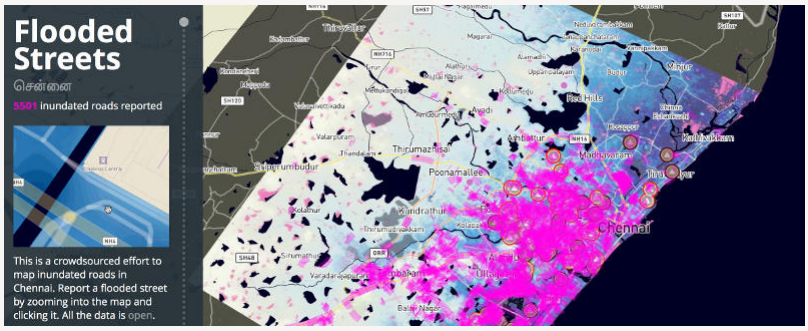
TECHNOLOGY

Over the years there has been considerable development in the area of

- Satellite based remote sensing
- Ground Based Weather Radars
- Automated Weather Stations
- IOTs

Image Source: IMD Monitoring cyclone Amphan, 18 May 2020

LARGER AWARENESS



Over the years there has been increased engagement with communities

- Print Media
- Social Media engagement
- Experience of recent disasters
- INGOs, NGOs, Youth participation


23
DAM MANAGEMENT
Rules needs to be changed to include urban water needs and climate variability and change scenario

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29
FLOOD PLAIN MANAGEMENT
Demarcation and creating safe evaluation / relocation areas by making the information available in public domain for people to comphrehend
Source: Port Authority, Rotterdam

29

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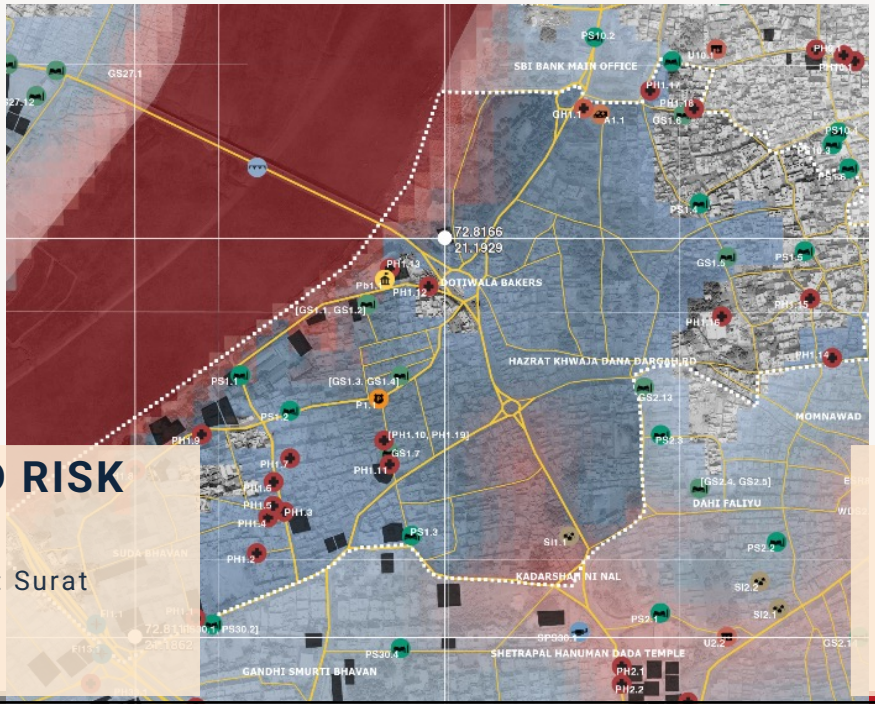

MAKE FLOOD RISK VISIBLE

Lamp post marking: Surat

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CITY DISASTER MANAGEMENT CELL

Mumbai

31


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Thank you

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