
IURC
INTERNATIONAL URBAN AND REGIONAL COOPERATION
Funded by the European Union
Nature Based Solutions for Flood Management
Tuesday, April 12 2022
03:30 - 5:00 pm IST | 12:00 - 1:30 pm CET

Tuesday 12 April 2022, 12:00PM – 1:30PM (CET) / 03:30PM – 05:00PM (IST)
Moderation: Dr Panagiotis Karamanos IURC AA Country Coordinator

Time	Program
12:00-12:15 pm CET 3:30-3:45 pm IST	**Welcome Address** Ms Kamilla Kristensen Rai, Counsellor, Delegation of the European Union to India **Setting the Scene** Ms Prachi Merchant, Urban Development Manager, IURC - AA
12:15-12:45 pm CET 3:45-4:15 pm IST	**City Inputs on Flood Management Efforts (5 min. each city)** • Mr. Corjan Gebraad, Rotterdam, Strategic Advisor, Urban Management Division, Water Department • Ms. Josephine di Pino, Messina, International Project Expert • Mr. Anil Kumar, Mayor, Kochi Municipal Corporation • Mr. Agnelo Fernandes, Commissioner, Corporation of the City of Panaji • Mr. Nilesh Patel, Executive Assistant, Surat Municipal Corporation • Mr. Ismet Adipradana, Indonesia, Head of Sub Division on Spatial, Land Affairs and Environment Planning, Regional Development Agency of Semarang City
12:45-1:10 pm CET 4:15-4:40 pm IST	**Experiences & Best Practices from the EU, India and Asia** • Mr. Tjitte Nauta, Regional Manager, Deltares, Netherlands • Dr. Vikrom Mathur, Director, Transitions Research, Goa
1:10-1:25 pm CET 4:40-4:55 pm IST	**Questions and Discussion on** 1. Flood prevention; 2. Early warning systems; and/or 3. Flood management coping mechanisms.
1:25-1:30 pm CET 4:55-5:00 pm IST	**Conclusions and Way Forward** Dr. P. Karamanos, IURC AA Country Coordinator

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Setting the scene for flood management

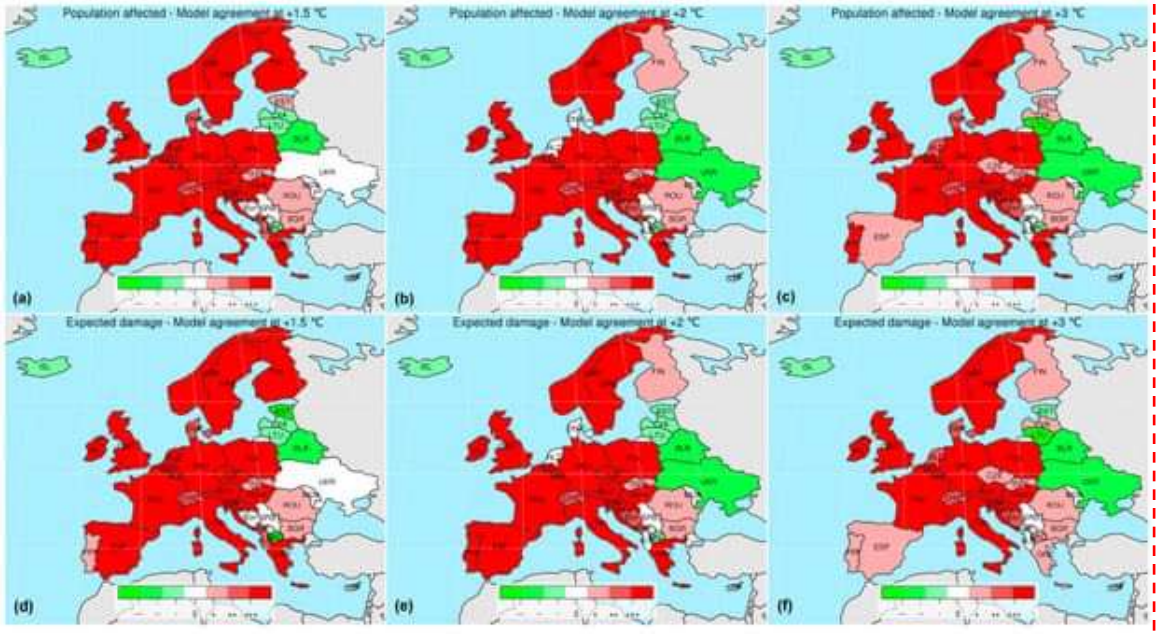
Presenter:
Prachi Merchant,
Urban Development Manager (India)

Date:
12/04/2022

European & Indian scenario

EUROPE

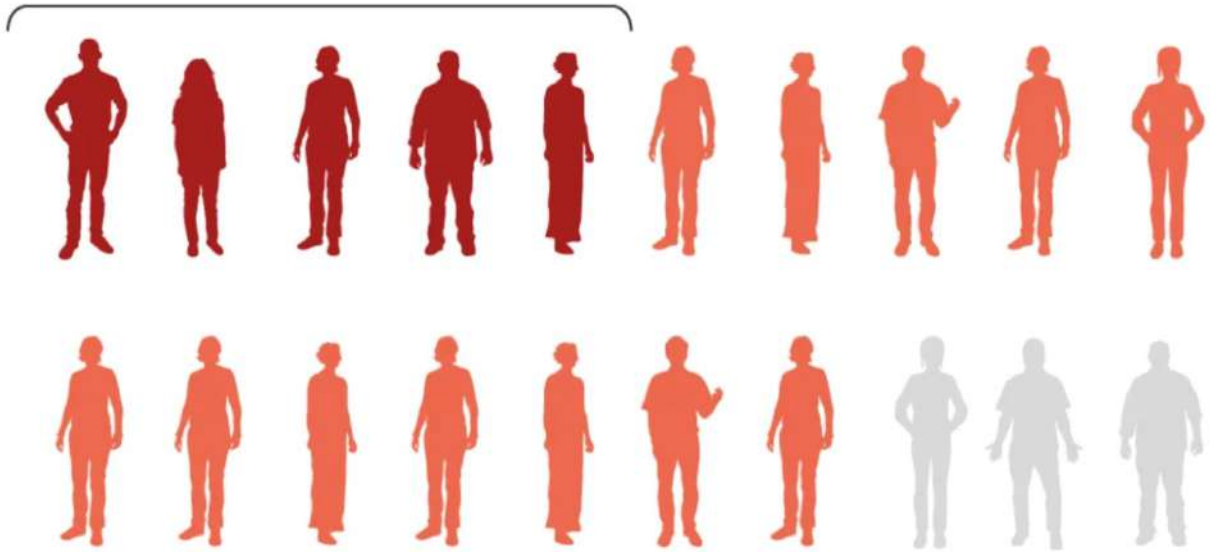
Flood risks are significant in Europe under all climate scenarios



https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/feb/08/climate-change-is-increasing-flood-risks-in-europe

INDIA

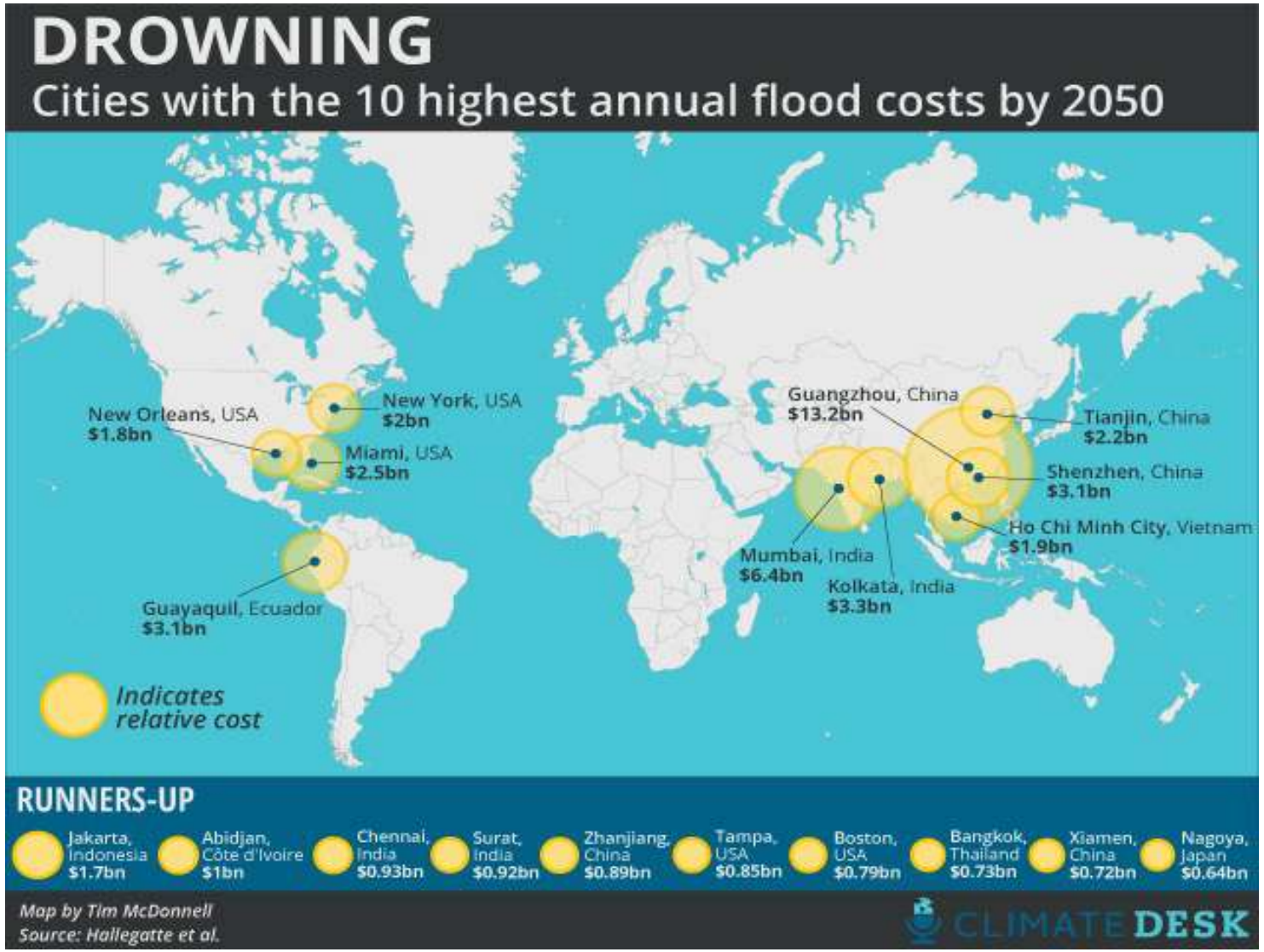
17 out of 20 people in India are vulnerable to extreme hydro-met disasters, while 5 out of 20 are highly vulnerable to drought, flood & cyclone.



CEEW, "Mapping India's Climate Vulnerability-A District Level Assessment," 2021

'Intergovernmental Panel on Climate Change (IPCC)'
***Surat, Mumbai, Kochi, Chennai & Kolkata** in high danger*

Background



CAUSES

1. Warming of sea
2. Rising sea levels
3. Altered monsoon pattern
4. High intensity rainfall in short duration
5. Low absorption
6. Rising population and land use change

CITY EFFORTS

1. Flood/ Cyclone assessment
2. Devise mitigation measures
3. Work on early warning system
4. Climate change action reports
5. Adaptation

Nature based solutions through cooperation

SURAT

Gujarat, India

Area: 474 sq.km

Popn.: 728,000

Location: A delta city on the banks of the Tapti River.
Elevation: 13 m

Issues:
1.Flood Management
2.Groundwater and storm water discharge
3.Water resilience

ROTTERDAM

Netherlands

Area: 324 sq.km

Popn.: 650,000

Location: End of Rhine-Meuse delta, along Nieuwe Maas river leading into North Sea
Elevation: -6 to +4 m

Issues:
1.Longer periods of heat and drought.
2.Seal level rise and extreme rainfall
3.Soil subsidence combined with deteriorating foundations of houses

PANAJI

Goa, India

Area: 8.27 sq.km

Popn.: 50,000

Location: Banks of the Mandovi river and its 10 tributaries, confluence of the river and sea.
Elevation: 7 m

Issues:
1.Disconnected drains & sewage network, reduced natural surface
2.Loss of mangroves

MESSINA

Italy

Area: 213 sq.km

Popn.: 250,000

Location: Harbor city separated from mainland Italy by the Strait of Messina. The city faces two seas, mountains and has a narrow "V" valleys deeply incised, constantly deepening riverbeds
Elevation: 3 m

Issues:
1.Climate Change
2. Heavy rains for the past 15 years
3. Seismic area
4.Illegal building along the rivers

KOCHI

Kerala, India

Area: 98 sq.km

Popn.: 633,553

Location: Between the sea with tapering southern end with hills of the Western Ghats
Elevation: 1.5 m

Issues:
1.Flooding
2.Sea level rise, tidal effect
3.Blocked canals and waterways
4.Lack of proper sewerage

SEMARANG

Indonesia

Area: 373 sq.km

Popn.: 1,653,524

Location: northern shore of central Java consisting of a unique setting of hills, lowlands and coastal area. 40% narrow lowland area faces large rivers of Kali Garang, Pengkol and Bringin River. The hilly area faces rivers that flow in the lowland part of the city
Elevation: 4 m

Issues:
1.Flash floods occurrence due to increasing level of tidal wave
2.Land subsidence

Thank You!

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