



# Is climate change real for India?

Anjal Prakash

Research Director and Adjunct Associate Professor,  
Indian School of Business, India

# The 5 environmental challenges in India



## Changing Climate

Climate change is there and is affecting people's life



## Water Shortages

Water demand and supply gaps are increasing



## Rising Temperature

Earth temperature is increasing at an unprecedented rate



## Increased Urbanization

Unplanned urbanisation; climate induced risks and hazards



## Industrial pollution

Effluents and air pollution due to rising economy and lack of enforcements of regulations



# Key sectors affected by climate change



**Health** – increases the prevalence of vector-borne diseases and with increased severe weather events, vulnerability to water borne diseases



**Economic growth** – Climate change is expected to alter the path and impede economic growth due to changes in natural systems and resources, infrastructure, and labor productivity



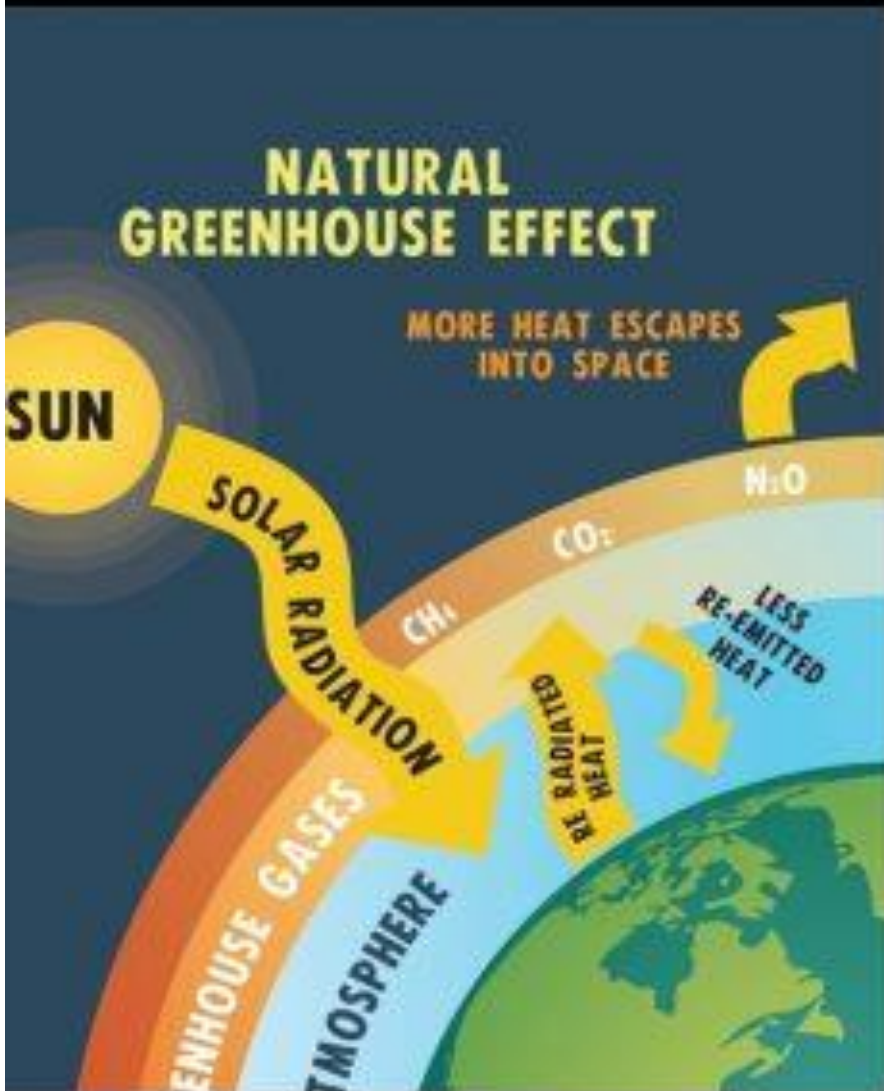
**Food security** – Climate change poses a threat to food security by reducing natural resource productivity and by exacerbating malnutrition



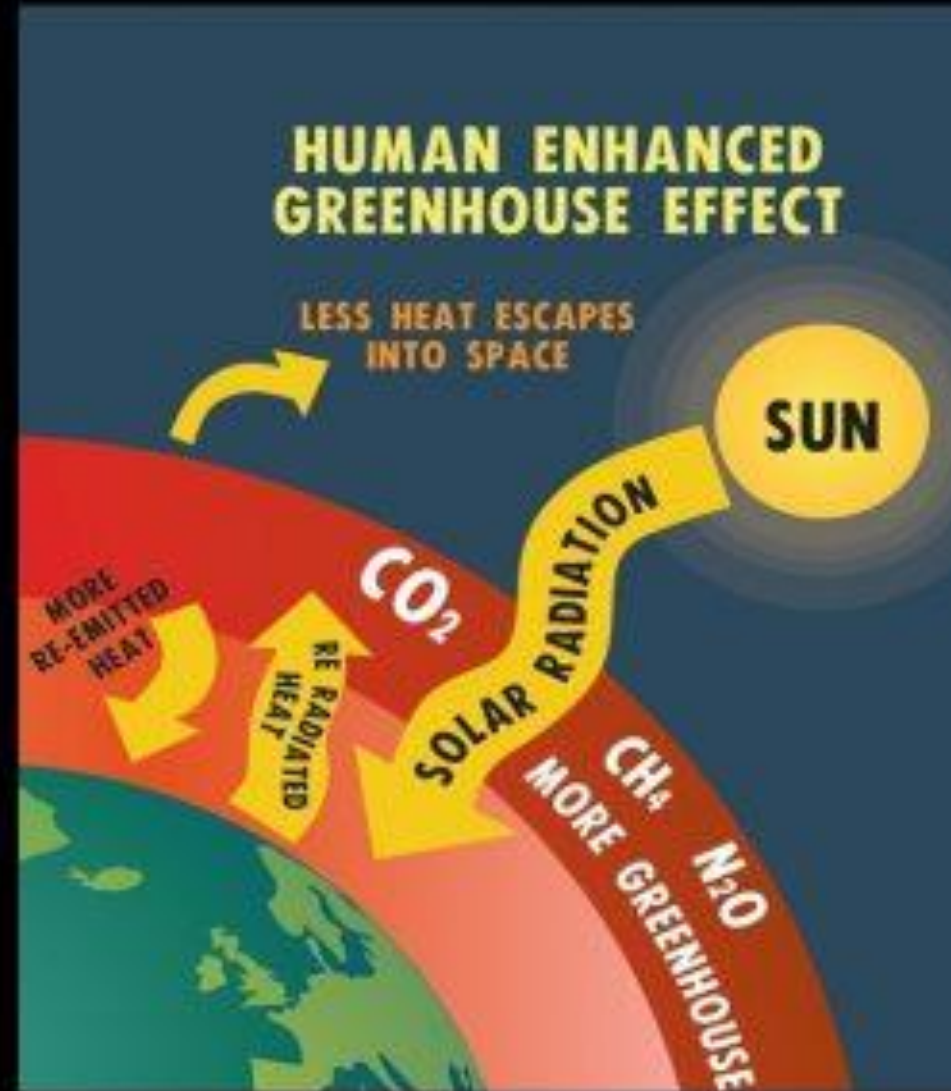
**Water** – Climate change further reduces access to water or change water regimes – flood and drought

# "The Greenhouse Effect" ?

CO<sub>2</sub> = Carbon  
CH<sub>4</sub> = Methan  
N<sub>2</sub>O = Nitrous



With GHGs -18°C. With GHGs +14°C



Additional GHGs have taken us over

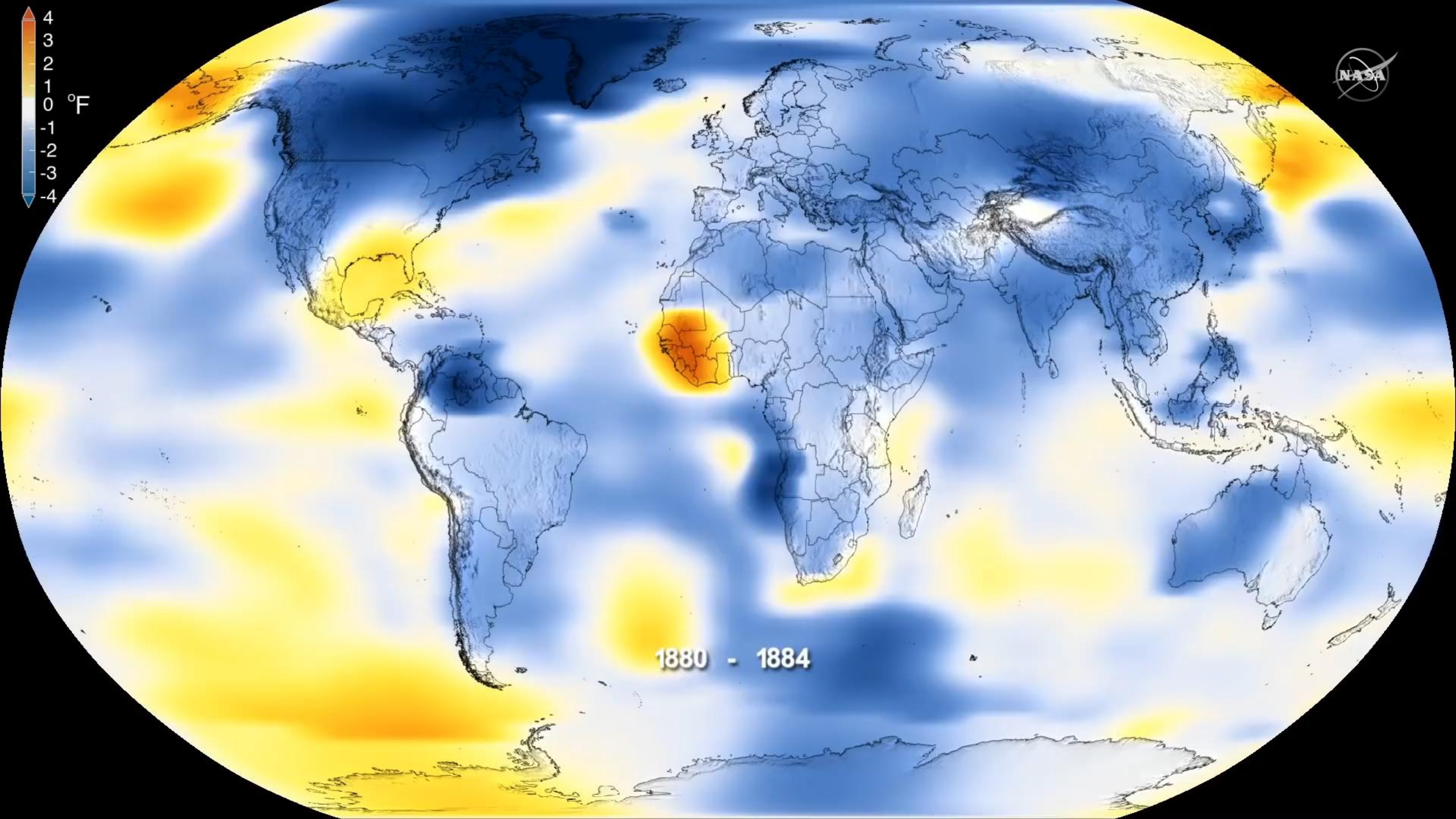
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## Global Warming

**Question:** What is the increase in average global temperature on earth since 1880 till date?

- A: 0.8 Degree C
- B: 1.16 Degree C ✓
- C: 1.5 Degree C
- D: None of the above





4  
3  
2  
1  
0  
-1  
-2  
-3  
-4

°F



1880 - 1884

# What was agreed to in the “Paris Agreement” that came out of COP-21, held in Paris in 2015?

**A:** To protect biodiversity and end the deforestation of the world's rainforests

**B:** To keep global temperature rise well below 2°C pre-industrial levels and to pursue a path to limit warming to 1.5°C

**C:** To limit sea level rise to 3 feet above current levels

**D:** To pursue a goal of 100% clean, renewable energy

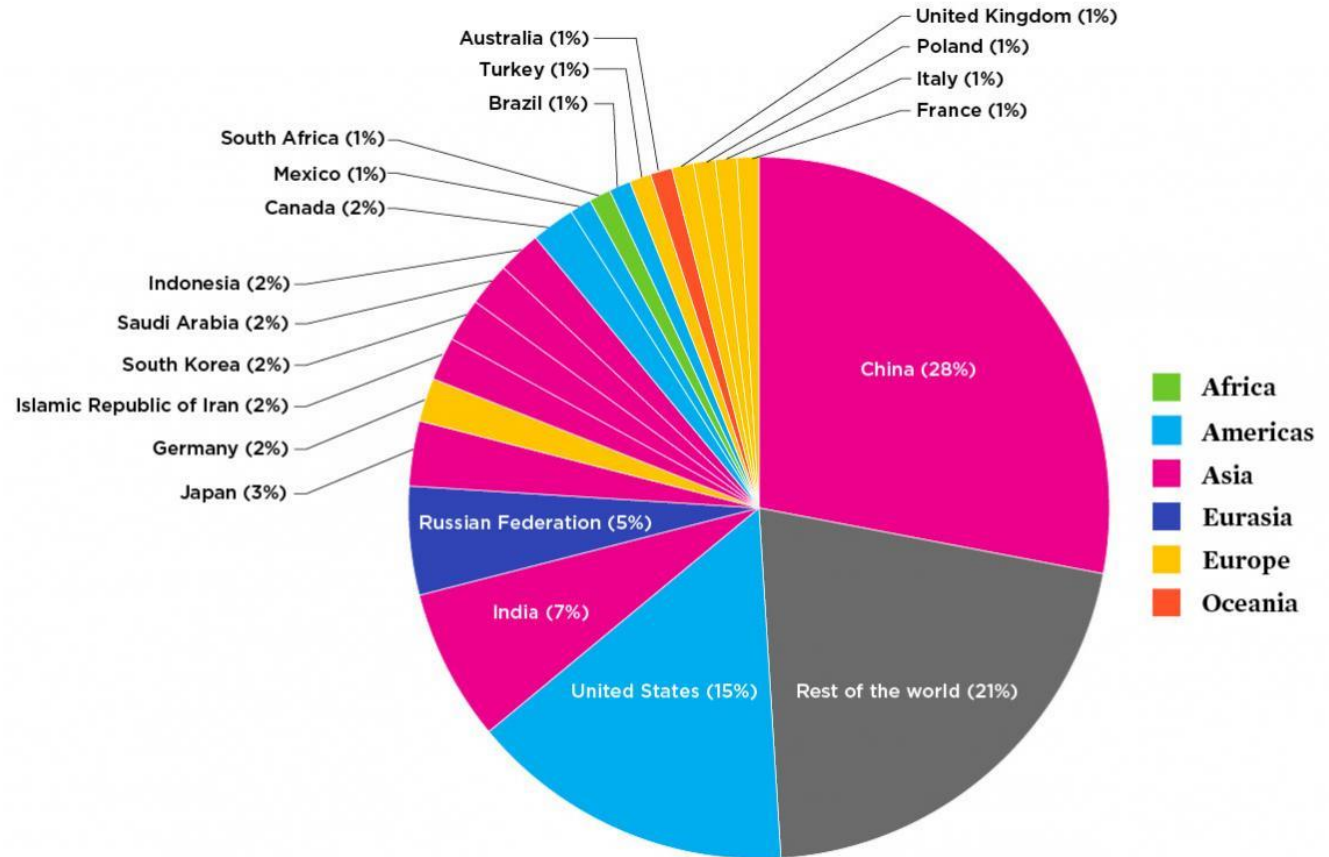
# Which of these countries emits the most CO2?

A: USA

B: China ✓

C: India

D: Russia





# Globally, which of the following economic sectors emits the largest percentage of greenhouse gas emissions?

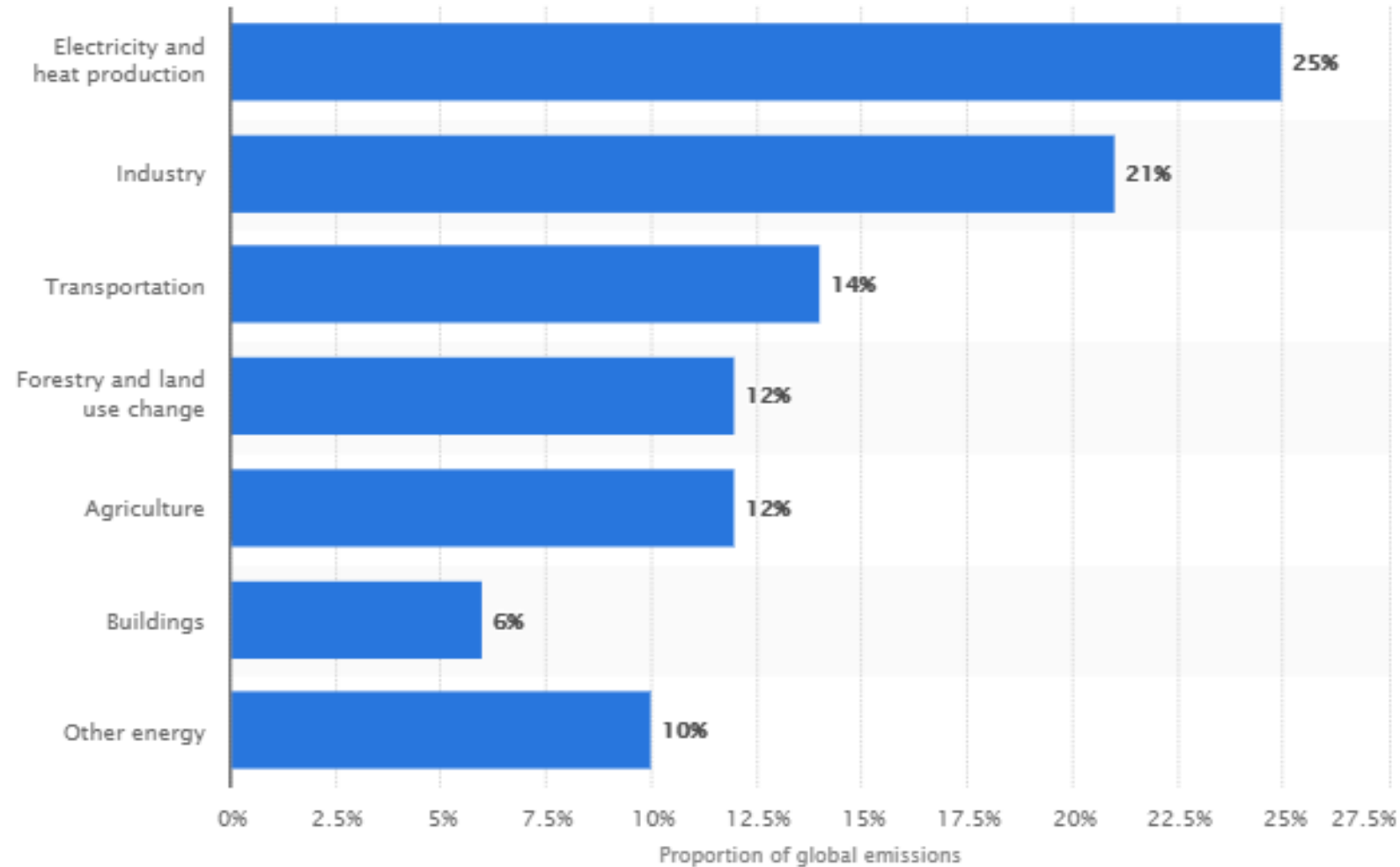
A: Transportation

B: Buildings

C: Industry

D: Electricity and heat Production ✓

E: Agriculture



# Key global warming threats for India



Average temperature in India has been on the rise



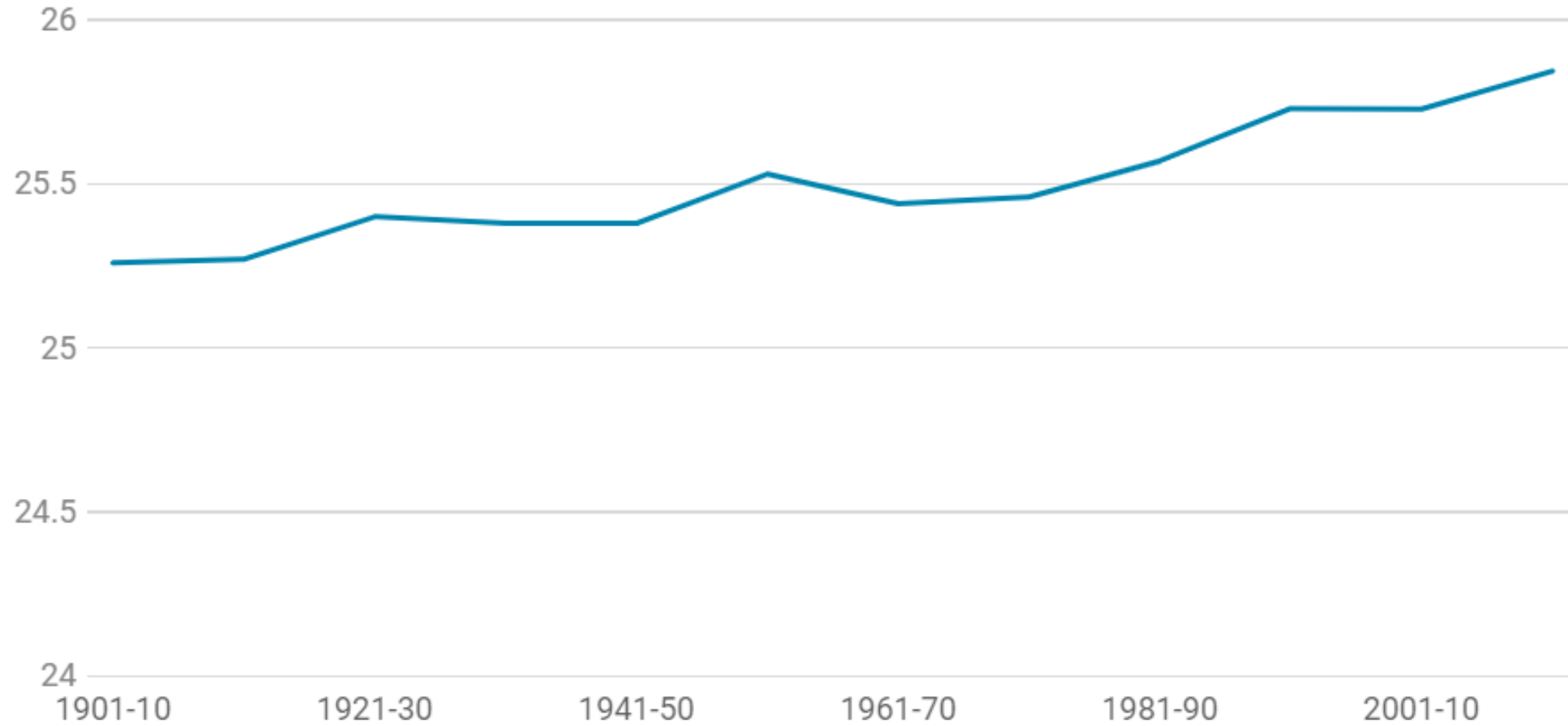
Among the most populated countries, India will lose out the most from heat stress



Indian Cities are getting hotter

# Average temperature in India has been on the rise

Decadal average in degree celsius

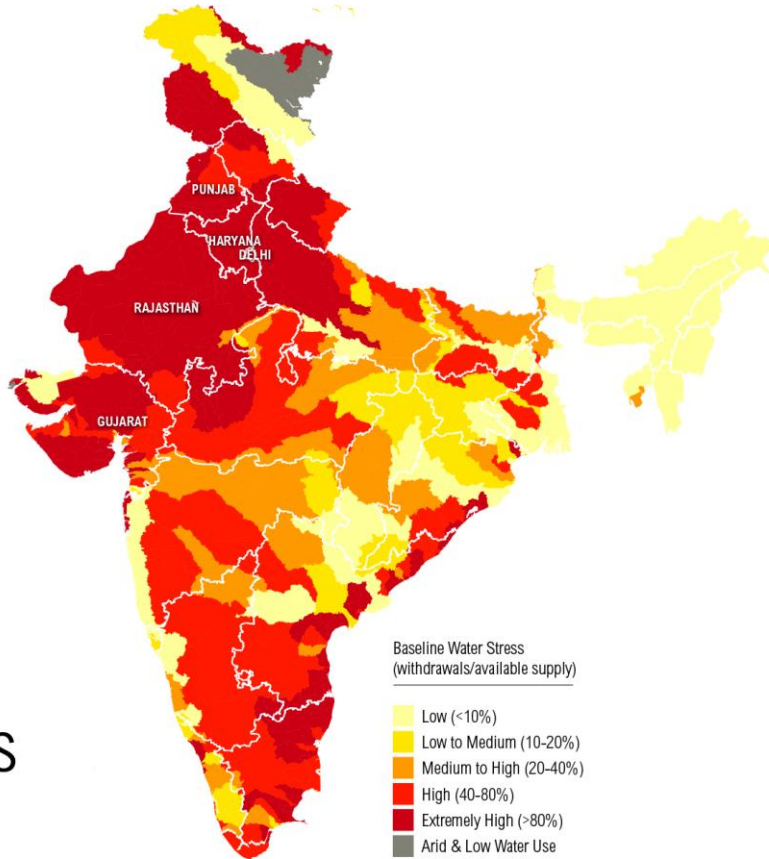


*Current decade data includes the years 2011 to 2018 only. In the last 8 years, the hottest year was in 2016 when the average temperature across India was 26.2*

Source: [Environment Statistics 2019, MOSPI](#) • [Get the data](#) • Created with [Datawrapper](#)

# Warming and Water Stress

**54%**  
of India  
Faces  
**High to  
Extremely  
High**  
Water Stress



## 6 groups

1. River
2. Coasts
3. Mountains
4. Agriculture
5. Cities
6. Industry

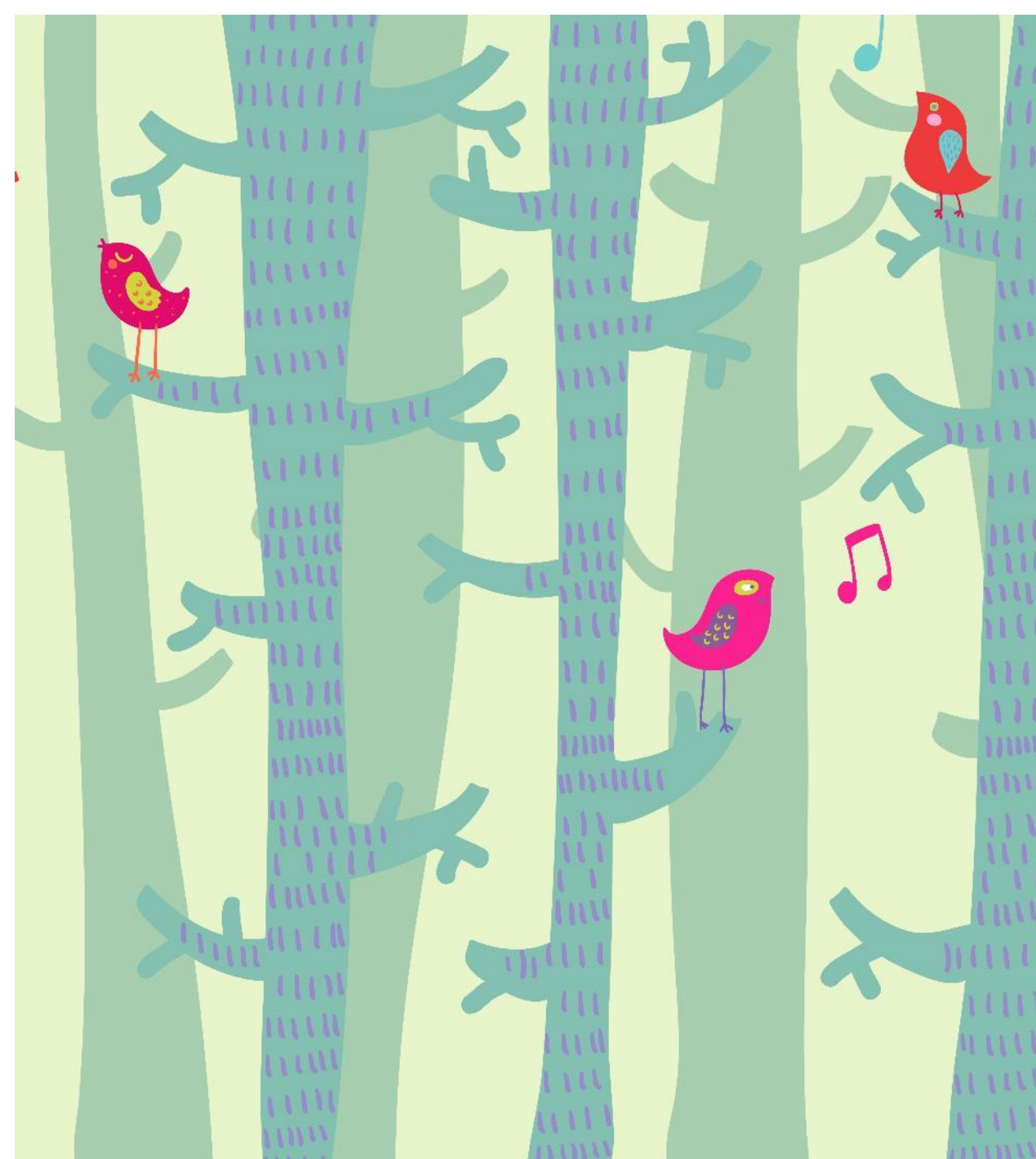
- Good (without climate change)
- Bad (with climate change)

# Show clips

- Farmers distress

- From drought to prosperity

So.. What is the solution?



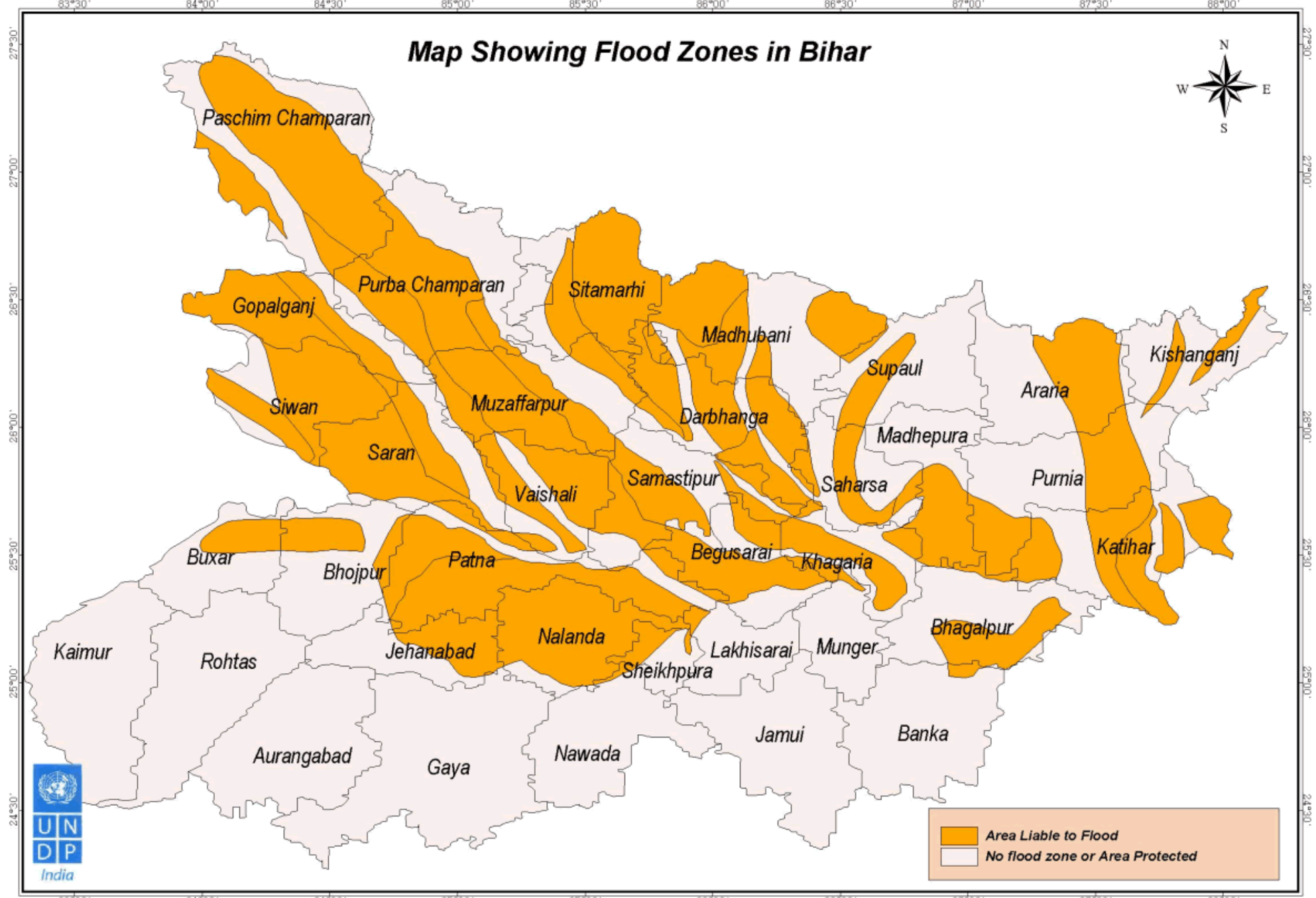
# Flood resilient toilets in Pashchim Champaran, Bihar, India



मेघ पाईन अभियान  
Megh Pyne Abhiyan

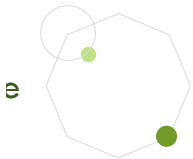


# Map Showing Flood Zones in Bihar



Disclaimer: This map was collated based on the data/information compiled by the Ministry of Urban Development and Poverty Alleviation; UNDP has not verified the accuracy of information of the Map. Source: BMTPC, India

(Updated on 28/11/2014)



# Phydemand shauchalay (beneficial toilet)– ecological sanitation?



- Groundwater in the region is acting both like a sink and source, thereby creating a favorable environment for health concerns
- Saves water and protects groundwater from contamination and has positive health impacts for the communities especially during the flooding season
- An odourless and integrated sanitation method for individual households
- This will also contribute to making manure available for agriculture activities
- A constant access to sanitation providing hygiene and privacy especially for the women and adolescent girls, the eco-san is helping in the resilience of the vulnerable population







Your Logo or Name Here

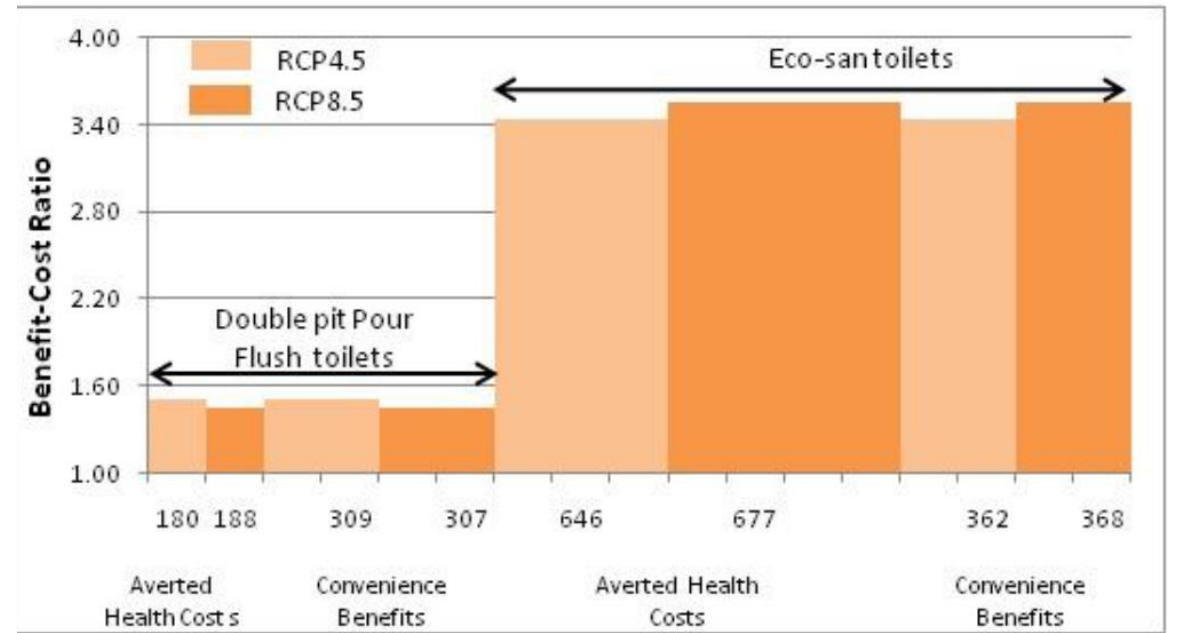




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# Benefit-cost ratio for ecosan vs pour flush toilets



# Show pani documentary

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# Acknowledgement

- [Article in the print](#) - The growing threat of climate change in India

<https://www.livemint.com/news/india/the-growing-threat-of-climate-change-in-india-1563716968468.html>


- Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments
- Megh Pyne Abhiyan, Pachim Champaran and HI-AWARE project of ICIMOD
- WOTR and Pani Project



# Thank You



Anjal Prakash 

+91 9030122271 

Anjal.Prakash@terisas.ac.in 

<http://www.terisas.ac.in/> 