

**FNCA 18<sup>TH</sup> MINISTERIAL  
LEVEL MEETING  
10-11 OCTOBER 2017  
ASTANA, KAZAKHSTAN**

**Dr. Dilip Kumar Saha  
Chairman**

**Bangladesh Atomic Energy Commission  
Dhaka, Bangladesh**

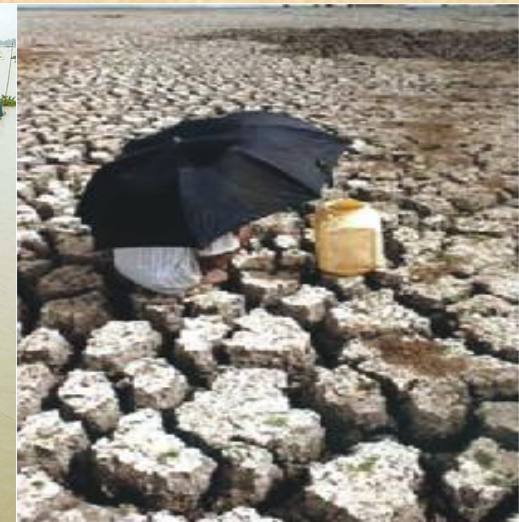
# KEY ISSUES ON CLIMATE CHANGE IN BANGLADESH



**Flood**



**Flood**

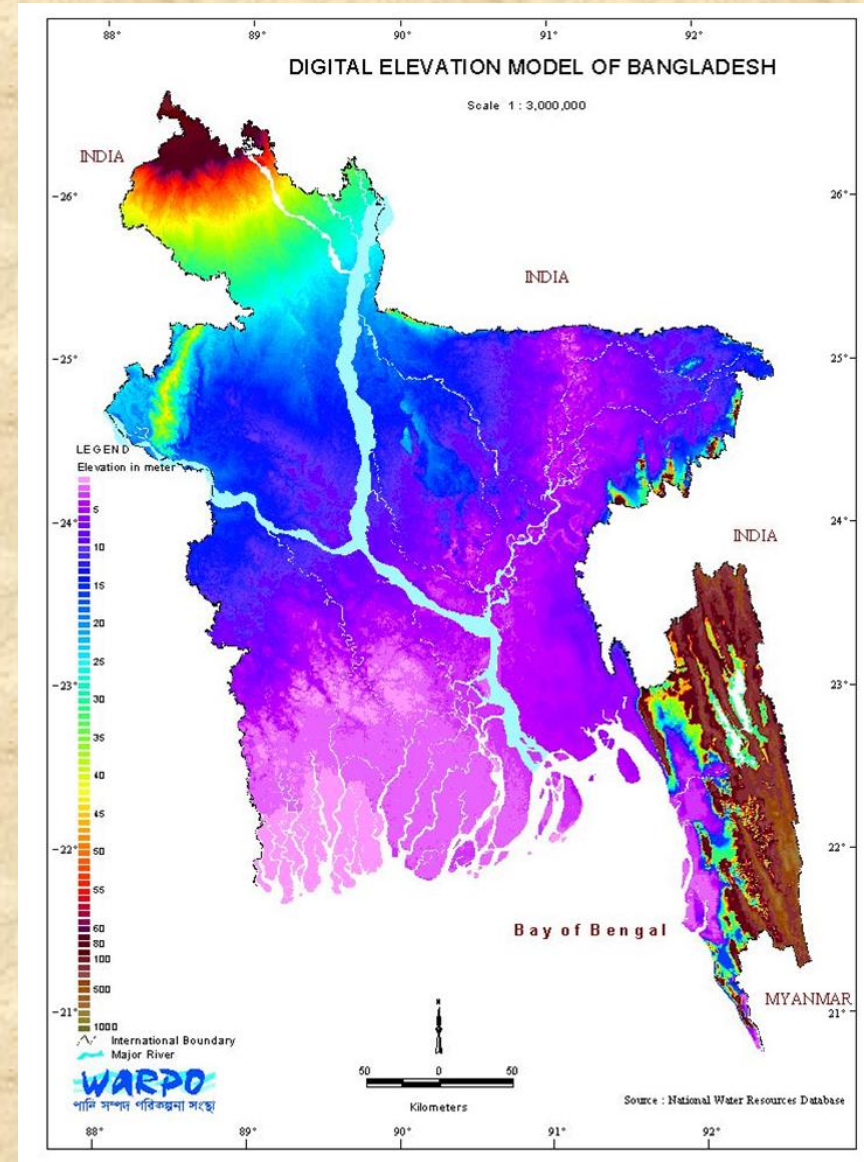


**Drought**



# Climate Change and Bangladesh

- The country is located in the Bengal Basin, a low-lying very flat delta. About 80 per cent of Bangladesh is floodplains with very low mean elevation above the sea level.
- The flat topography makes a significant part of Bangladesh vulnerable to sea level change. The active delta and dynamic morphology complicates the reliable estimation of vulnerability of tidal floodplains to sea level rise.
- The net sea level rise would result in
  - Inundation of coastal land
  - Reduced drainage and hence prolonged flooding due to high backwater.
  - Higher precipitation within GBM basin would result in greater flood magnitude and frequency.



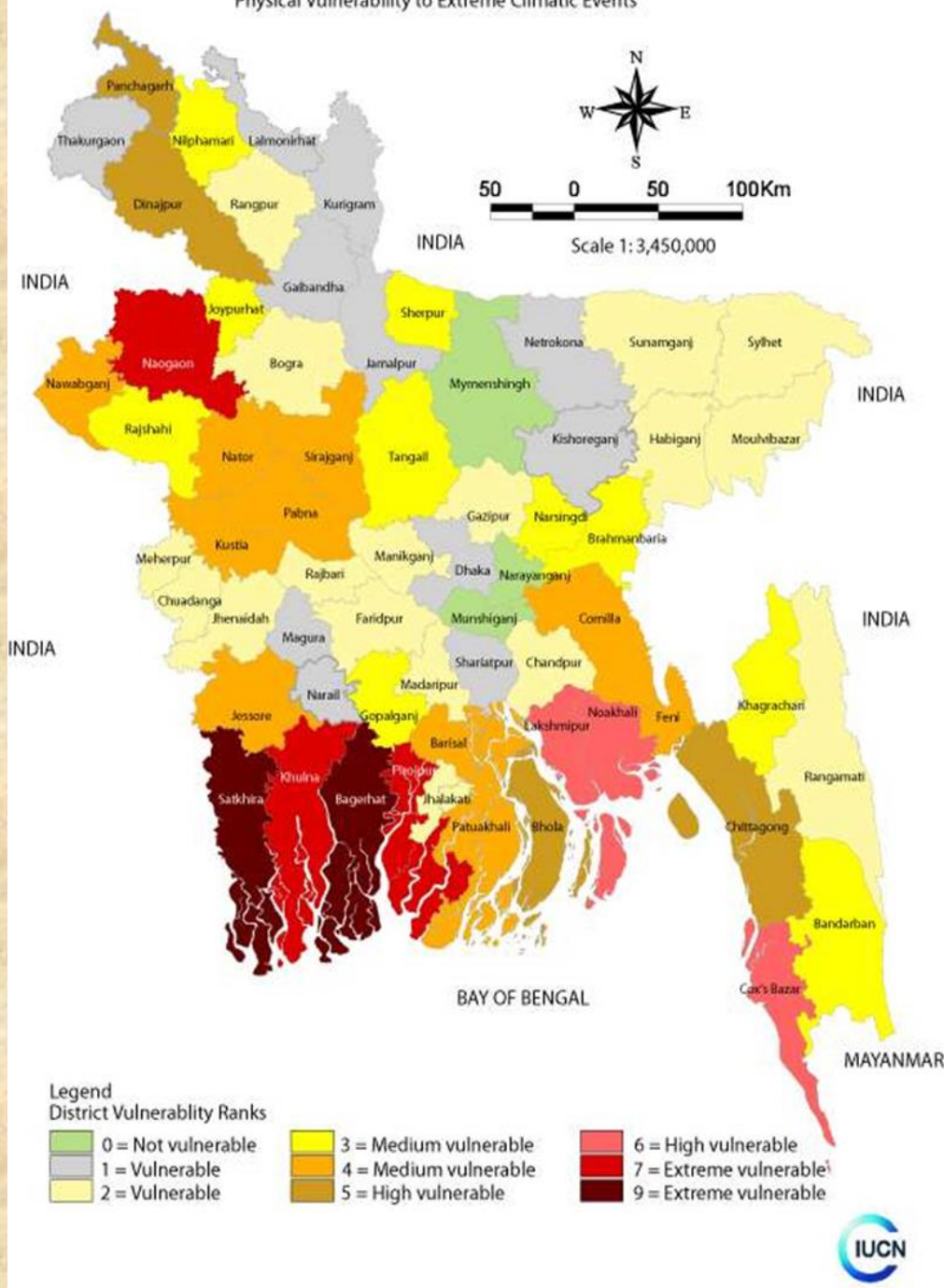
# **Main Impacts of Climate Change in Bangladesh**

- ▣ Drainage congestions due to higher sea levels and flooding
- ▣ Reduced fresh water availability
- ▣ Disturbances to morphological processes (mainly in coastal zone)
- ▣ Increased intensity of disasters (extreme events)

# Climate Change Risks in Bangladesh

- **Extreme events- increased hazards with potential to increased disasters**
  - **More/intense/frequent floods/droughts/cyclones/storm surges etc.**
- **Slow onset / gradual effects leading to disasters**
  - **Salinity intrusion, river bank erosion, temperature variability, erratic precipitation etc.**
- **Climate Change also has severe social impacts that will cause internal and external migration of displaced community.**





## Physical Vulnerability to Extreme Climate Events

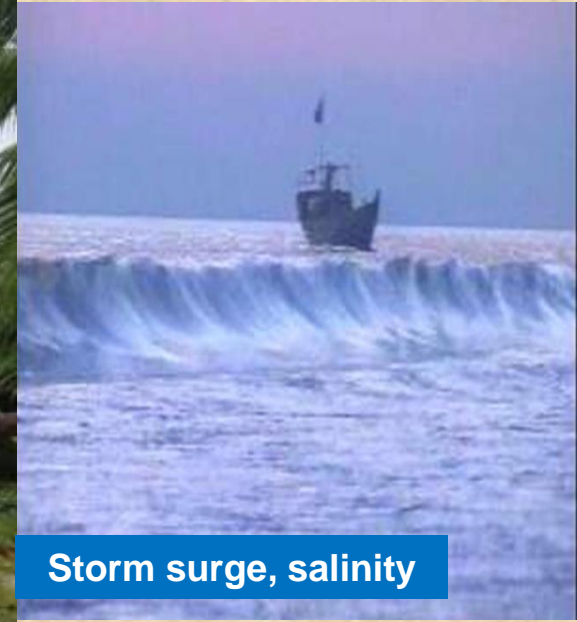
- ❖ Drought, Floods, Cyclones likely to exacerbate in future due to climate change.
- ❖ Country still reeling from devastation due to Cyclone Aila (2009).
- ❖ Disaster risk reduction strategy need strengthening.



**Drought**



**Cyclone**

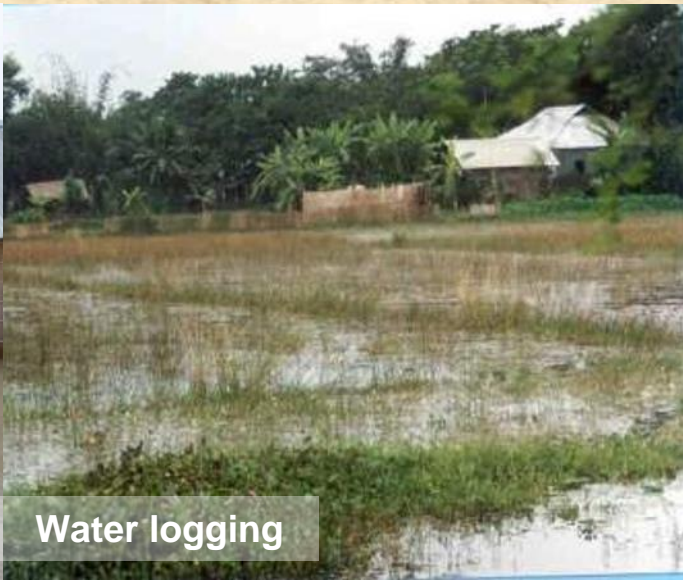


**Storm surge, salinity**

**Climate Induced Major Hazards that affect different sectors in Bangladesh**



**Flood**



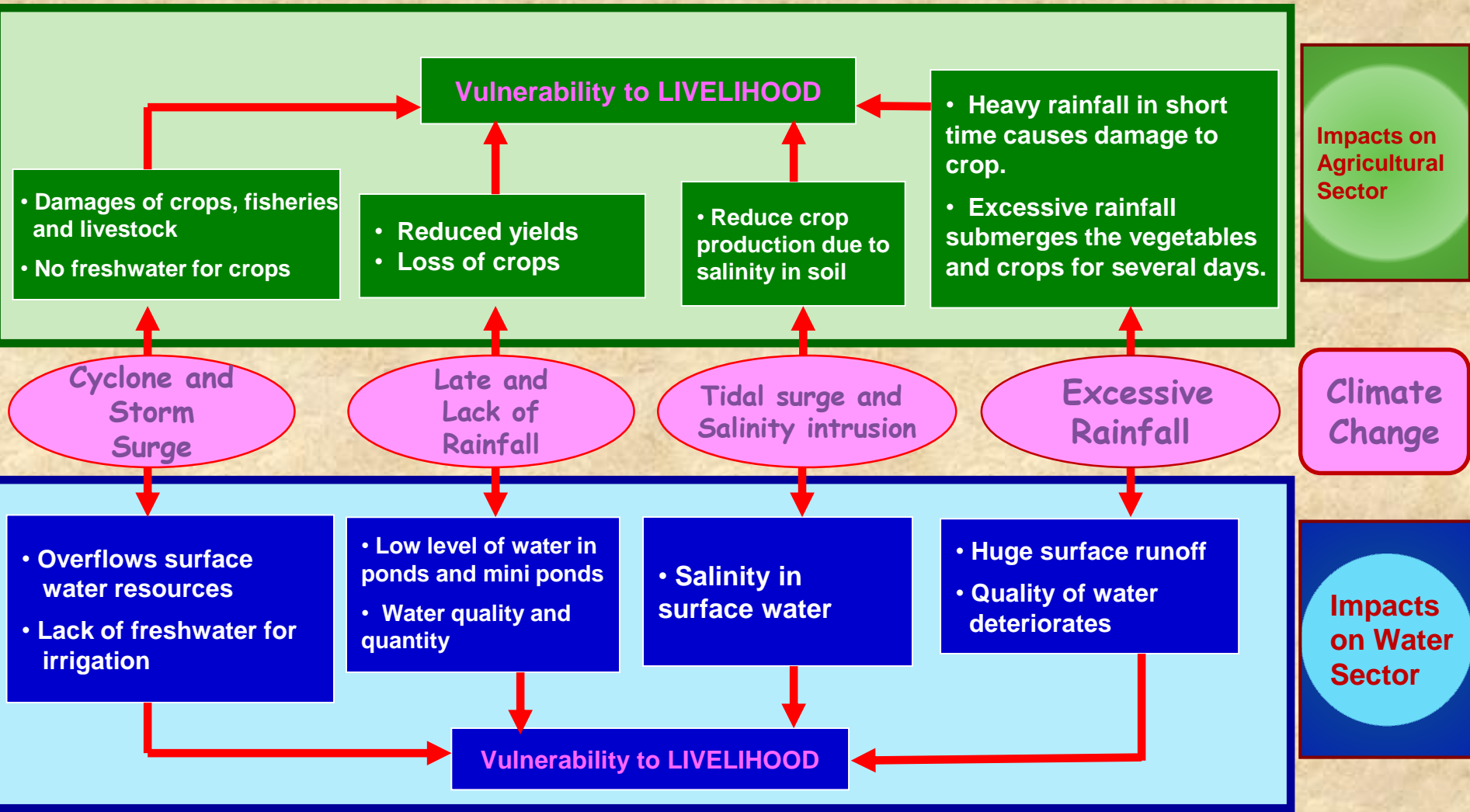
**Water logging**



**Bank Erosion**



# How climate change induced hazards currently affects agricultural and water sectors in the coast of Bangladesh ?





# Impact of Extreme Climate Events



**Embankment breached during Aila (2009) remains unrepaired and water rushes inside the polder areas.**

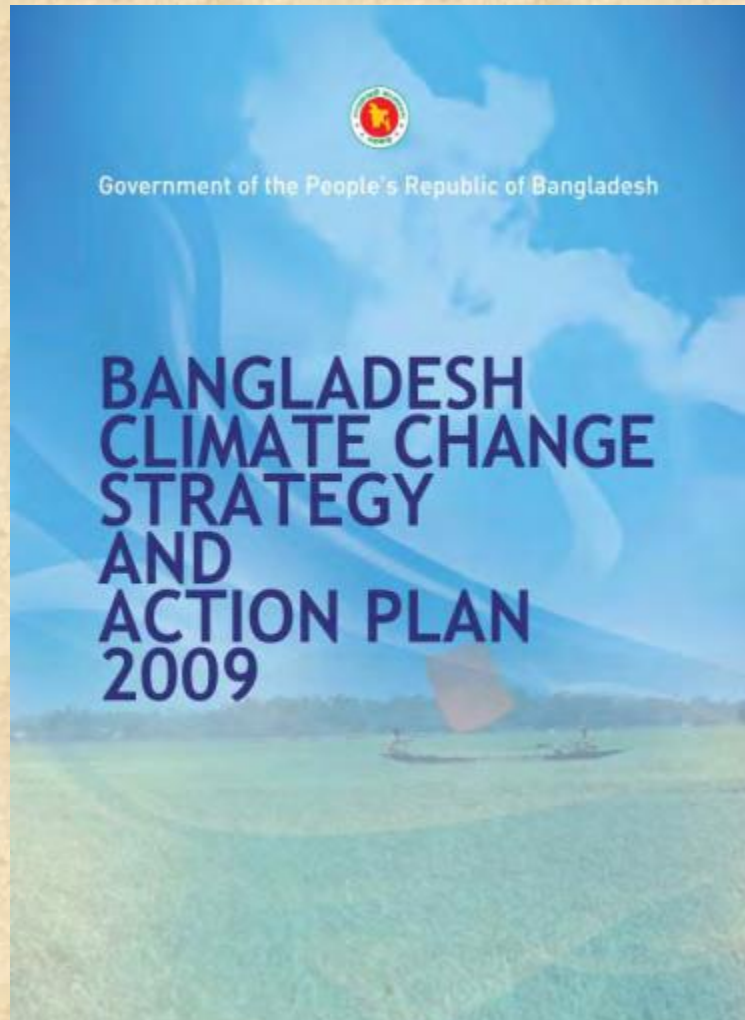


**Villages are submerged.**



**People's Response to Post-Aila Situation;  
Internal Migration due to Loss of Livelihoods.**

# Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009



A pro-poor climate change management strategy, which prioritizes adaptation and disaster risk reduction, low carbon development, mitigation and technology transfer

## SIX THEMATIC AREAS:

- Food security, social protection and health
- Comprehensive disaster management  
Infrastructure
- Research & knowledge management
- Mitigation & low carbon development  
Capacity building & institutional  
strengthening
  - 44 thematic programmes developed.
  - Implementation of several projects initiated.



# KEY ISSUES ON LAND CONTAMINATION IN BANGLADESH



# Water and Soil Pollution

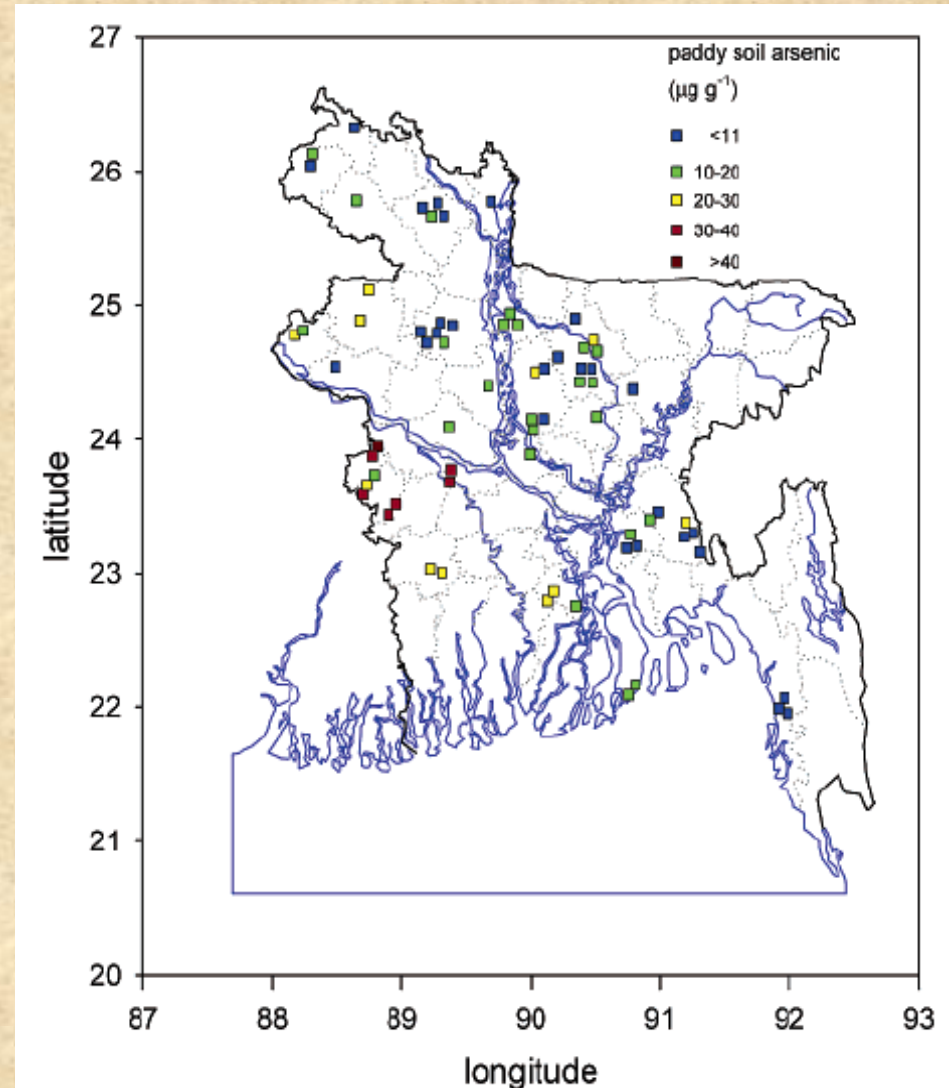
- Bangladesh receives water: 74% from transboundary, 24% from rainfall & 2% from groundwater.
- Source of pollution: Industrial effluent (textiles, tanneries, pulp and paper mill, fertilizer), municipal waste, chemical fertilizer & pesticide, oil & lube spillage from sea & river ports.
- Increasing salinity in the coastal regions during dry seasons.
- Agricultural soil contamination with heavy metals through the repeated use of untreated or poorly treated wastewater from industrial establishments and application of chemical fertilizers and pesticides is one of the most severe ecological problems in Bangladesh.



# Land Contaminated by Arsenic

It is apparent from the findings of different researchers that the average arsenic (As) content in Bangladesh soils are less than 10 mg/kg.

The background value of soil As is much below the average in areas where groundwater contamination has not been reported or where the groundwater is very feebly contaminated.



# Land Contaminated by Effluents Discharged from the Industries

The Export Processing Zones (EPZ) are categorically the leading pollution creators. These industrial units include cap/accessories/garments; textile/knitting plastic goods; footwear/leather goods; metal products; electronic goods; paper products; chemicals and fertilizers and miscellaneous products. Industrial activities discharge untreated or poorly treated industrial wastewater, effluent and even sludge into the surrounding environment that decrease the soil quality by increasing concentrations of pollutants such as heavy metals, resulting in adverse effects on macrophytes, soil fauna and human health.





# Background of Air Pollution in Dhaka



## Scenario

- Rapid urbanization
- Increased economic activity
- High population density
- Increasing number of motor vehicles and industries
- Traffic congestion
- Transboundary transport



§ The most serious pollutant of concern in Bangladesh, especially in cities, is the particulate matter ( PM)

**Thank you all.**