

The coast and islands

The 7,517 kilometre Indian coast can be divided into the west coast, the eastern coastal plain and the biodiversity-rich Indian islands. The region is already witnessing climate change impacts like frequent, severe cyclones and sea ingression due to sea level rise

POPULATION

Total
201.3 million

Rural **53%** Urban **47%**



LAND USE

Net sown area
42.3%

Forest
21.7%

LIVELIHOODS

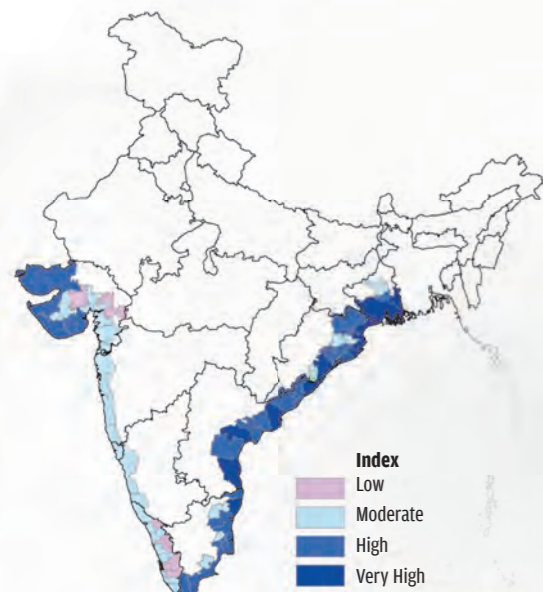
48.5% depend on agriculture

26% on service sector

CLIMATE CHANGE TRENDS

Cyclone

The Kutch region in Gujarat and the entire eastern coastal region are projected to have the highest incidence of cyclone



State-wise projections and impacts

Gujarat



Decrease in mean minimum temperature
0.5 C (1891-1996)



Increase in mean maximum temperature
0.5 C (1891-1996)

Impact and vulnerabilities:

- Junagadh and Porbandar districts to witness increased intensity and frequency of cyclones
- Rainfall to increase by 6-8% in the western coast by the 2030s

Maharashtra



Increase in mean minimum temperature
2.2 C (by 2021-50)



Increase in mean maximum temperature
1.8 C (by 2021-50)



No. of days with 'high' and 'very high' rainfall to **increase** (by 2079-99)

Impact and vulnerabilities:

- Sea level rise of one metre will inundate 0.18 per cent of the state
- Thane has the highest vulnerability to climate change

Karnataka



Increase in temperature
1.7-2.2 C (by 2030s)



Monsoon rainfall decreased by 6% in last 50 years

Impact and vulnerabilities:

- In Dakshina Kannada and Udupi, 28% coast has reported erosion
- 10-15% decline in rice yield by 2050

Kerala



Increase in temperature (for coastal areas)
2.1 C (by 2030)



No. of rainy days to decrease; intensity of rainfall to rise by 1-4 mm/day

Sea level rise: 1.3 mm ± 0.7 mm/year

Impact and vulnerabilities:

- Coconut yields are projected to increase by 30%

Tamil Nadu



Increase in mean minimum temperature
3.4 C (by 2100)



Increase in mean maximum temperature
3.4 C (by 2100)



Annual rainfall intensity to increase by 8-14 mm/day (by 2100)

Sea level rise: 0.32 mm/year

Impact and vulnerabilities:

- Sea water intrusion will impact drinking water sources; 13 districts already affected
- Six coastal districts to witness intense cyclones

Andhra Pradesh



Increase in temperature
2.5 C (by 2080s as compared to 2020s)



Modest increase in future

Impact and vulnerabilities:

- Reduction of fish catch in coastal areas
- Temperature fluctuation will negatively impact winter crop
- Coconut production to increase by 10%

Odisha



Increase in temperature (in coastal areas by 2021-50)
1.5 C-2.0 C



Fewer rainy days with high intensity (by 2020s)

Impact and vulnerabilities:

Cyclonic intensity to increase during July-October by 2020s

West Bengal



Increase in temperature
1.8 C-2.4 C (by 2021-50)



Little or no change expected

Sea level rise: Sea level rise will be higher than global rate

Impact and vulnerabilities:

- Sea surge heights may increase to 7.46 metres
- Kolkata hardest hit by sea level rise, risking one million people and assets worth US \$2 trillion
- Potato production may decline by 4-16% by 2030s

A one-metre rise in sea level will displace **7.1 million** people in India

Andaman & Nicobar Islands

- There is no projected trend on rainfall and temperature, but a rise in sea surface temperature of approximately 1 C above the normal maximum summer temperature over the past 20 years has led to bleaching events
- The sea level along the islands' coast has been rising at above 1.3 mm/year

Lakshadweep

- No projections for temperature and there is no observed change in rainfall in past 30 years
- But in the past 40 years, the observed sea level rise was 1.06-1.75 mm/year
- Projections indicate an estimated loss of 10-40% in crop production by 2100

Source: Rama Rao C.A., et al., Atlas on Vulnerability of Indian Agriculture to Climate Change, Central Research Institute for Dryland Agriculture, Hyderabad, 2013