Indian Coastal Community and Climate Change

What is the issue?

The Indian coastline has undergone physical changes throughout its geological past.

What is the status of Indian coastal areas?

- The coastal areas of India experience tropical climates and have diverse geological, geomorphologic, and ecological setups.
- The Indian coast is endowed with a wide range of biotic and abiotic resources which provide many demanding products that are essentially required for the welfare of human development.
- Most of India's coastal regions are low-lying and densely populated, with nearly 250 million people living within 50km of the coast.

What is the impact of climate change on the Indian coastal community?

- **Sea Level Rise (SLR) -** It is a major impact on coastal regions that cause a combination of risks in retreat, submersion, erosion, and increased vulnerability to extreme marine events.
- Coastal communities and other stakeholders are impacted by loss of land, erosion, flooding, and saltwater intrusion in coastal aquifers.
- **Increased Sea Surface Temperature (SST) –** SST is the water temperature close to the ocean's surface.
- As greenhouse gases trap energy from the sun, the oceans absorb heat, resulting in an increase in SST.
- Due to changes in SST, several species have disappeared or migrated to other regions.
- Tropical disturbances normally become cyclones if the SST is more than 26 degree Celsius.
- **Frequency of cyclones and floods –** During the 21st century, there has been an increase in the occurrence and severity of flood hazards in India.
- Cyclones and floods cause causalities and injuries besides the devastation of coastal infrastructures, road networks, schools, cyclone centres, health centres, houses, and other common properties.
- **Saltwater Intrusion –** Seawater intrusion problem takes place in the dug wells and bore wells of households and enterprises which are close to the shore, during the summer months.
- High population pressure, intense human activities, inappropriate and indiscriminate landscape alterations, resource use, and the absence of proper management practices add to the deterioration of water resources.
- **Drought –** Climate change parameters also increase drought conditions in coastal areas.

- Drought affects the coastal village through prolonged shortages in the water supply on the surface and groundwater.
- An increase in water demand for drinking, domestic purposes, and agricultural and industrial usage are the major consequences of drought.

How can the situation be managed?

- Coastal habitats shall be demarcated and suitable locations for shelter during the flood which are the high elevated areas along the coasts shall be identified.
- To maintain the fish stock in the coastal zone, fish stock trends and assessments shall be conducted to develop policies and schemes to replenish the economically important fishery resources with the involvement of local stakeholders.
- The codes for the construction of buildings and infrastructure in cyclone-prone areas for disaster preparedness to mitigate climate change impacts should be incorporated into the building plans.
- The efficient use of hazard lines, disaster management plans, Hazard Profile maps, and other relevant local management plans thus support the mitigation of climate change risks experienced by the coastal communities.

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