4. Global Sea-level Rise and Implications

Why in News?

- Recently, the World Meteorological Organisation 's (WMO) Report "Global Sea-level Rise and Implications", India, China, Bangladesh and the Netherlands face the highest threat of sea-level rise globally.

Highlights

- Between 2013 and 2022, Global mean sea-level was 4.5 mm/year and human influence was likely the main driver of these increases since at least 1971.
- Global mean sea-level increased by 0.20m between 1901 and 2018,
- Even if global heating is limited to 1.5 degrees Celsius over pre-industrial levels, there will still be a sizable sea level rise.
- But every fraction of a degree counts. If temperatures rise by 2 degrees, that level rise could double, with further temperature increases bringing exponential sea level increases
- Thermal expansion contributed to 50% of sea level rise during 1971-2018, while ice loss from glaciers contributed to 22%, ice-sheet loss to 20% and changes in land-water storage 8%.
- The rate of Ice-sheet loss increased by a factor of four between 1992-1999 and 2010-2019. Together, icesheet and glacier mass loss were the dominant contributors to global mean sea level rise during 2006-2018.
- At sustained warming levels between 2-3 degree Celcius, the Greenland and West Antarctic ice sheets will be almost completely and irreversibly lost over multiple millennia causing potentially multimeter sea-level rise.
- Sea-level rise will bring cascading and compounding impacts resulting in losses of coastal ecosystems and ecosystem services, groundwater salinization, flooding and damage to coastal infrastructure that cascade into risks to livelihoods, settlements, health, well-being, food, displacement and water security, and cultural values in the near to long-term.