

Concerns of Rising Sea Level

Why in news?

World Meteorological Organization's (WMO) State of the Global Climate 2022 report highlighted that the world's sea level is rising at an unprecedented rate.

How much is the sea rising?

- The rate of global mean sea-level (GSML) rise has doubled between the first decade of the satellite record and the last.

To calculate the rate of change in the GSML, i.e. how fast or slow the sea level is changing, we can calculate the difference in the GSML across a few years, usually a decade, and then divide the difference by the number of years.

- The sea level has been rising in the last 3 decades.
- The rate of sea-level rise was 2.27 mm/year in 1993-2002, it shot up to 4.62 mm/year in 2013-2022.

What causes accelerated sea-level rise?

- Thermal expansion due to increasing ocean temperatures.
- Ocean warming the phenomenon of rising mean ocean temperatures contributed 55% to GSML rise.
- According to the State of the Global Climate 2022 report in 2005-2019, loss of glaciers and ice sheets contributed 36% to the GSML rise.
- Changes in the storage of land water contributed less than 10% to GSML rise.
- Thinning of cryosphere leading to melting of glaciers.

The cryosphere includes the Arctic and Antarctic regions, seasonal snow cover, and permafrost (mass of land that remains below 0° C for at least 2 straight years).

- Increasing concentrations of carbon dioxide and other greenhouse gases.

What are the impacts of sea level rise?

- **Groundwater crisis** - It allows the salt water to enter underground making the underground water salty.
- **Coastal areas** - It affects the coastal areas by swallowing the land
- **Migration** - People in coastal areas gets migrated due to increasing sea level rise.
- **Land cover** - May be decreased leading to population density
- Acute shortage of land for human use.
- **Cyclones** - The chances of cyclones could increase, affecting coastal communities and leading to large economic liabilities to tropical countries.
- **Disintegrate the coastal communities** - People on the coastal ecosystem may be affected and push them to poverty and force them to migrate.

Quick facts

World Meteorological Organization (WMO)

- WMO is an intergovernmental organization with a membership of **193 Member** States and Territories.
- WMO originated from the International Meteorological Organization (IMO), the roots of which were planted at the 1873 **Vienna International Meteorological Congress**.
- WMO is **specialized agency** of the United Nations for meteorology (weather and climate), operational hydrology and related geophysical sciences.
- WMO's Its supreme body is the **World Meteorological Congress**.

References

1. [The Hindu | Sea Level Rise](#)