



# State of Climate Services Report 2021: WMO

## Why in News

Recently, the [World Meteorological Organization \(WMO\)](#) released the **State of Climate Services report 2021**. It focuses on **Terrestrial Water Storage**.

- Earlier, on [water day](#) (22<sup>nd</sup> March), in a [report](#) released by the [United Nations Children's Fund \(UNICEF\)](#), **one in five children** worldwide reside in areas of high or **extremely high water vulnerability**.

## Key Points

### ▪ Terrestrial Water Storage (TWS):

- TWS is the **sum of all water on the land surface and in the subsurface**, i.e. surface water, soil moisture, snow and ice and groundwater.
  - Water is a key prerequisite for human development. But only **0.5% of water on Earth is usable** and available as freshwater.
- Water **resources across the world are under tremendous pressure** due to human and naturally-induced stressors.
  - These include population growth, [urbanisation](#) and decreasing availability of freshwater.
- **Extreme weather events** too have been responsible for the pressure on water resources realised across sectors and regions.

### ▪ Global Scenario:

- TWS **dropped at a rate of 1 cm per year in 20 years** (2002-2021).
- The **biggest losses have occurred in Antarctica and Greenland**. But many highly populated, lower latitude locations have also experienced TWS losses.

### ▪ Indian Scenario:

- **About:**
  - The TWS has been **lost at a rate of at least 3 cm per year**. In some regions, the loss has been over 4 cm per year too.
  - India has recorded the **highest loss in terrestrial water storage** if the loss of water storage in **Antarctica and Greenland is excluded**.
  - India is the **'topmost hotspot of TWS loss'**. The **northern part of India** has experienced the **maximum loss** within the country.
- **Per Capita Availability:**
  - In India, per capita water availability is **reducing due to an increase in population**.
  - The average annual per capita water availability has **reduced to 1,545 cubic metres in 2011, from 1,816 cubic metres in 2001**.

- It is **projected to further decrease to 1,367 cubic metres in 2031**, according to the Union Ministry of Housing and Urban Affairs.
- **River Basins:**
  - **Five** of the 21 river basins in India are **'absolute water scarce'** (per capita water availability below 500 cubic metres) according to the Falkenmark Water Stress Indicator.
  - **Five** are **'water scarce'** (per capita water availability below 1,000 cubic metres) and three are **'water stressed'** (per capita water availability below 1,700 cubic metres).
  - By 2050, six will become absolute water scarce, six will become water scarce and four will become water stressed, according to the State of India's Environment in figures, 2020.
  - The **Falkenmark indicator** is one of the most widely used indicators for assessing the stress on water. It **relates the total freshwater resources with the total population** in a country and indicates the pressure that population puts on water resources, including the needs for natural ecosystems.
- **Recommendations:**
  - **Investments Needed:**
    - **Integrated Resources Water Management** as a solution to better manage water stress, especially in [Small Island Developing States \(SIDS\)](#) and Least Developed Countries (LDCs).
    - In **end-to-end drought and flood early warning systems** in at-risk LDCs, including for drought warning in Africa and flood warning in Asia.
  - **Fill Capacity Gap:**
    - Fill the capacity gap in collecting data for basic hydrological variables which underpin climate services and early warning systems.
    - Fill the gaps in data on country capacities for climate services in the water sector, especially for SIDS.
  - **Improve Interaction:**
    - Improve the interaction **among national level stakeholders** to co-develop and operationalize climate services with information users to better support adaptation in the water sector.
    - There is also a pressing need for **better monitoring and evaluation of socio-economic benefits**, which will help to showcase best practices.
  - **Join the Water and Climate Coalition:**
    - Water and Climate Coalition is a platform for its members to partner on joint activities and implement solutions that address the gaps of operational water and climate challenges with a focus on data and information.

## Related Government Initiatives

- [Jal Kranti Abhiyan.](#)
- [National Water Mission.](#)
- [National Rural Drinking Water Programme.](#)
- [NITI Aayog Composite Water Management Index.](#)
- [Jal Jeevan Mission.](#)
- [Jal Shakti Abhiyan.](#)
- [Atal Bhujal Yojana.](#)

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