



# Global Water Resources Report 2021: WMO

**For Prelims:** Climate Change, Water Crisis, La Nina, Drought, Floods, Cryosphere, Indo-Genetic Plain.

**For Mains:** World Meteorological Organization (WMO), Global Water Resources Report 2021.

## Why in News?

Recently, [WMO \(World Meteorological Organization\)](#) has released its first annual **State of Global Water Resources Report 2021**.

## What is this Report About?

- The aim of this annual report is to **support monitoring and management of global freshwater resources** in an era of growing demand and limited supplies.
- The report **focuses on three major areas**:
  - **Streamflow**, the volume of water flowing through a river channel at any given time.
  - **Terrestrial water storage (TWS)** — all water on the land surface and in the sub-surface.
  - **The cryosphere** (frozen water).

## What are the Findings of the Report?

- **Overview:**
  - Between 2001 and 2018, UN-Water reported that a **staggering 74% of all natural disasters were water-related**.
    - The recent UN climate change conference, [COP27](#), in Egypt, urged governments to further **integrate water into adaptation efforts**, the first-time water has been referenced in a COP outcome document in recognition of its critical importance.
  - **3.6 billion people have inadequate access to water at least one month per year** and this is expected to increase to more than five billion by 2050.
  - Large areas of the **globe recorded drier-than-normal conditions in 2021**, which was a year in which precipitation patterns were **influenced by [climate change](#) and a [La Niña event](#)**.
  - The area with below-average streamflow was **approximately two times larger than the above-average area**, in comparison to the 30-year hydrological average.
- **Region wise Streamflow:**
  - **Drought:** Areas that were unusually dry included **South America's** Rio de la Plata area, where a **persistent [drought](#) has affected the region since 2019**.
  - **Below Normal:** In Africa, major rivers such as the Niger, Volta, Nile and Congo had **below-average water flow in 2021**. The same trend was observed in **rivers in parts of Russia, West Siberia and in Central Asia**.
  - **Above Normal:** On the other hand, there **were above-normal river volumes in some North American basins**, the North Amazon and South Africa, as well as in China's Amur River basin, and northern India.
- **Terrestrial Cover:**

- **Below Normal:** Aside from river flow variations, **overall terrestrial water storage was classified as below normal** on the west coast of the United States, in central South America and Patagonia, North Africa and Madagascar, Central Asia and the Middle East, Pakistan and North India.
- **Above Normal:** It was **above normal in Central Africa**, northern South America – specifically the Amazon Basin – and northern China.
- **Cryosphere:**
  - Mountains are often called natural “water towers” because they are the source of **rivers and freshwater supplies for an estimated 1.9 billion people**.
  - Changes to **cryosphere water resources affect food security**, human health, ecosystem integrity and maintenance, and lead to significant impacts on economic and social development.

## What is the Scenario of India?

- There is more evidence of the **worsening impact of global warming on the [Indo-Gangetic Plain \(IGP\)](#)** that straddles eastern Pakistan, northern India, southern Nepal and the whole of Bangladesh.
- The Ganga-Brahmaputra and Indus basins that form the Plain, recorded more **water flowing in the river channels due to glacial melt** even as their total water storage declined in 2021.
- This will be **extremely worrying news since the IGP supports nearly half a billion people** across the four countries.

## What are the Recommendations?

- There is insufficient understanding of changes in the distribution, quantity, and quality of freshwater resources, there is a need to fill that **knowledge gap and provide a concise overview of water availability in different parts** of the world.
- There is a need for the **development of end-to-end drought and flood early warning systems**.
- The long-term projections of glacier run-off and the timing of peak water, should be key **inputs to long-term adaptation decisions**.
- There is a need to accelerate the **availability and sharing of hydrological data, including river discharge and transboundary** river basin information.

## What is the World Meteorological Organization (WMO)?

- The World Meteorological Organization (WMO) is an **intergovernmental organization with a membership of 193 Member States and Territories**.
  - **India** is a member of WMO.
- It originated from the **International Meteorological Organization (IMO)**, which was established after the **1873 Vienna International Meteorological Congress**.
- Established **by the ratification of the WMO Convention on 23<sup>rd</sup> March 1950**, WMO became the specialized agency of the United Nations for meteorology (weather and climate), operational hydrology and related geophysical sciences.<sup>1</sup>
- WMO is **headquartered in Geneva, Switzerland**.

**[Source: DTE](#)**