



## Implications of No Snowfall In Kashmir

**For Prelims:** Implications of No Snowfall In Kashmir, [Western Disturbance](#), [Climate Change](#), [Himalayan region](#), [El Nino](#).

**For Mains:** Important Geophysical Phenomena, Geographical features and their location, Impacts of Climate Change.

[Source: IE](#)

### Why in News?

The absence of Snowfall in Kashmir during the winter season is not **only affecting the region's tourism industry**, particularly in popular destinations like Gulmarg, but it also has significant implications for various aspects of the local environment and economy.

### What Causes No Snowfall In Kashmir?

#### ▪ Climate and Weather Patterns:

- The entire Jammu and Kashmir and Ladakh regions have seen a **lack of rains or snow this winter**, with a notable **80% rainfall deficit in December 2023** and 100% (no rain) deficit in January 2024 so far.
- Winter precipitation in these regions, crucial for the local climate, is mainly in the form of snowfall.

#### ▪ Decline in Western Disturbance:

- The overall trend of decreasing snowfall has been attributed to a decline in [Western Disturbance](#) events and a **gradual rise in temperatures**, likely influenced by [Climate Change](#).
- Western Disturbances are the **primary source of winter precipitation** in the [Himalayan region](#).
  - The number of Western Disturbance events has been showing a declining trend, contributing to less overall precipitation during the winter months.
  - Western Disturbance are large **eastward-moving rain-bearing wind systems** that originate beyond Afghanistan and Iran, picking up moisture from as far as **the Mediterranean Sea and even the Atlantic Ocean**.

#### ▪ Role of Climate Change and El Nino:

- Climate change is considered a contributing factor to the declining snowfall in Kashmir, as indicated by various studies.
- The rate of temperature increase is higher in upper elevation areas than in the **plains, further impacting snowfall**.
- The current [El Nino](#) event in the eastern Pacific Ocean is suggested as an **additional factor affecting global atmospheric circulation** and contributing to the deficit precipitation in the region.
  - There have been several years in the last one decade — 2022, 2018, 2015 — when winters have been relatively dry in Jammu and Kashmir, and snowfall has been very

low.

## What are the Implications of No Snowfall in Kashmir?

- **Short and Long Term Impact:**
  - Short-term effects include an increase in forest fires, agricultural drought, and a drop in crop production.
  - Long-term consequences **include a reduction in hydroelectricity generation**, an increase in glacier melting, and adverse effects on drinking water supply due to less recharge of groundwater.
- **Vital for Winter Crops:**
  - The winter snow, crucial for **moisture in the soil**, is vital for winter crops, particularly horticulture. The yields of apples and **Saffron**, significant contributors to the local economy, are adversely affected in the absence of sufficient snowfall.
- **Impact on Tourism:**
  - Gulmarg, a key winter tourism spot in Kashmir, is witnessing a sharp decline in tourist visits this season due to insufficient snow. Despite substantial tourist numbers in 2023, officials project at least a **60% reduction in footfall**.
  - The scarcity of snow is adversely affecting **ski resorts and related businesses, impacting the local economy**.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### Prelims

**Q. With reference to 'Indian Ocean Dipole (IOD)' sometimes mentioned in the news while forecasting Indian monsoon, which of the following statements is/are correct? (2017)**

1. IOD phenomenon is characterised by a difference in sea surface temperature between tropical Western Indian Ocean and tropical Eastern Pacific Ocean.
2. An IOD phenomenon can influence an El Nino's impact on the monsoon.

**Select the correct answer using the code given below:**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans: (b)**

### Mains

**Q. Most of the unusual climatic happenings are explained as an outcome of the El-Nino effect. Do you agree? (2014)**