



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)