

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO.817
TO BE ANSWERED ON FRIDAY, FEBRUARY 05, 2021

IMPACT OF WESTERN DISTURBANCES

817. SHRI BHAGWANT MANN :

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has made any assessment of the impact of western disturbances during winter season on Indian climate;
- (b) if so, the details thereof indicating the ill-effects of such western disturbances; and
- (c) the steps taken to prevent the adverse effects of the western disturbances?

ANSWER

**MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)**

- (a) Yes Sir. There are several studies conducted by various scientific institutes in the country in regard to the impact of western disturbances during winter season on Indian climate. The studies show that;
 - 30% of annual precipitation over North West Indian region (J & K, Ladakh, Himachal Pradesh & Uttarakhand) is received during winter and it is mostly associated with Western Disturbances. It also causes rainfall over the adjoining places of north India.
 - Precipitation associated with Western Disturbances (WDs) influences Himalayan climate, glaciers, snow-water storage, flora, fauna, agricultural crops and human inhabitants etc.
- (b) The adverse weather elements associated with Western Disturbances are;
 - Intense precipitation in the form of snow, rain or hail leading to landslides, avalanches and damage of agriculture and manmade structures.
 - Dense to very dense fog events leading to interruption in aviation / rail / road transport services.
 - Cold Wave to Severe Cold Wave and Cold Day to Severe Cold Day conditions after the passage of western disturbances.
 - However, precipitation from the western disturbances is very vital for the Rabi Crop over northwest India. Also snowfall/snowmelt in the Hilly regions contribute to river flow and drinking water for people living downstream.

(c) India Meteorological Department (IMD) issues forecast & warnings for the weather elements related to WD also. From National Weather Forecasting Centre (NWFC), IMD forecasts are given in sub-divisional scale whereas the Regional Weather Forecasting Centre (RWFC) and State Weather Forecasting Centre (SWFC) issue forecast and warnings in district level and station level.

In addition to these, a Forecast Demonstration Project (FDP) for winter weather systems has been initiated from 2016 and it has brought together several institutes other than IMD to enhance the monitoring and forecast of weather elements related to WD. Accordingly a FDP bulletin is prepared and issued daily during November to February when the Western Disturbances are more active.

From November 2020 onwards, IMD started issuing a special bulletin related to winter weather systems (All India Multi-hazard Winter Warning Bulletin) which provides colour coded warning for five days for the adverse weather elements associated with WD, along with present weather scenario.

IMD started issuing Impact Based Forecast (IBF) in the recent past. Impact Based Warning contains guidelines to the general public while getting exposed to the severe weather. These guidelines are finalized by NDMA (National Disaster Management Authority) in coordination with IMD and the same is being issued for the adverse weather elements related with WD.
