

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION NO. 1306  
TO BE ANSWERED ON 9<sup>TH</sup> FEBRUARY, 2022**

**FAILURE OF FORECAST EQUIPMENTS**

1306. SHRI CHUNNI LAL SAHU:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has assessed the losses caused due to climate change in the remote mountainous regions of the State of Chhattisgarh, if so, the details thereof;
- (b) whether the lack of forecasting equipments or the faults of the equipments have been found as the reasons for the same;
- (c) if so, whether the Government has taken any concrete steps in this regard so that future incidents and catastrophes can be minimized; and
- (d) if so, the details thereof?

**ANSWER**

**THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR  
MINISTRY OF SCIENCE AND TECHNOLOGY  
AND EARTH SCIENCES  
(DR. JITENDRA SINGH)**

- (a) Ministry of Earth Sciences (MoES) is mandated to issue forecasts and warnings related to day to day weather events through India Meteorological Department (IMD). The recently published MoES report entitled "Assessment of Climate Change over the Indian Region", highlights the effects of human-made global warming induced climate change. The summer monsoon precipitation (June to September) over India has declined by around 6% from 1951 to 2015, with notable decrease over the Indo-Gangetic Plains.

Additionally, IMD has carried out an analysis of observed monsoon rainfall variability and changes of 29 States & Union Territory at State and District levels based on the IMD's observational data of recent 30 years (1989- 2018) during the Southwest monsoon season from June to September (JJAS) and issued a report on 30 March 2020. The reports on observed rainfall variability and its trend for each State and Union Territory are available in IMD website (<https://mausam.imd.gov.in/>) under "PUBLICATIONS" as well as in IMD Pune website;

**<http://www.imdpune.gov.in/hydrology/rainfall%20variability%20page/rainfall%20trend.html>**

According to this report, no significant change is seen in Southwest monsoon rainfall over Chhattisgarh during the period of study. However, significant increasing trend is observed in the frequency of heavy rainfall days over many parts of Chhattisgarh.

- (b) No Sir. The details of departmental and part time observatories along with details of Automatic Weather Stations (AWS), District Agromet Units (DAMUs) and Agromet Field Units (AFMUs) in Chhattisgarh are given in Annexure. Medium range weather forecast at district level is generated and based on the forecast, Agromet advisories are being prepared and communicated by the AMFUs, to the farmers on every Tuesday and Friday to take decision on day-to-day agricultural operations. These advisories rendered by IMD is a step towards weather-based crop and livestock management strategies and operations dedicated to enhancing crop production and food security besides reducing crop damage and loss due to unusual weather. Currently, about 85,000 farmers in the State of Chhattisgarh are receiving these advisories through sms and are getting benefitted.

In addition to that, there are two RS/RW stations in the state of Chhattisgarh at Jagdalpur and Raipur. Both these stations are having Pilot Balloon (PB) observation facilities also and are carrying out regular observations. IMD has a meteorological centre at Raipur to provide the weather & climate information, forecast and warning services for the State of Chhattisgarh. This centre is equipped with all forecasting equipment as per requirement.

- (c)-(d) IMD provides early warning services related to severe weather events to support public welfare and disaster management related to Natural Hazards.

For this purpose, IMD follows a seamless forecasting strategy. The long-range forecasts (for the whole season) issued are being followed with extended range forecast issued on every Thursday with a validity period of four weeks. To follow up the extended range forecast, IMD issues short to medium range forecast and warnings at 36 meteorological sub-divisions levels (including Chhattisgarh) daily four times valid up to next five days with an outlook for subsequent two days. The short to medium range forecast and warning at district and station level are issued by state level Meteorological Centres (MCs)/Regional Meteorological Centres (RMCs) with a validity of next five days and are updated twice a day. The short to medium range forecast is followed by very short range forecast of severe weather up to three hours (nowcast) for all the districts and 1089 cities and towns. These nowcasts are updated every three hours.

While issuing the warning suitable colour code is used to bring out the impact of the severe weather expected and to signal the Disaster Management about the course of action to be taken with respect to impending disaster weather event. Green color corresponds to no warning hence no action is needed, yellow color corresponds to be watchful and get updated information, orange color to be alert and be prepared to take action whereas red color signals to take action.

IMD is issuing Impact Based Forecast (IBF) which give details of what the weather will do rather than what the weather will be. It contains the details of impacts expected from the severe weather elements and guidelines to general public about do's and don'ts while getting exposed to severe weather. These guidelines are finalised in collaboration with National Disaster Management Authority (NDMA) and is already implemented successfully for cyclone, heat wave, thunderstorm and heavy rainfall.

## Annexure

## Details of AWS installed in Chhattisgarh

S NO.	STATE	DISTRICT	STATION
1	CHHATTISGARH	BASTAR	JAGDALPUR AMFU
2	CHHATTISGARH	BIJAPUR	BIJAPUR TOWN
3	CHHATTISGARH	BIJAPUR	BIJAPUR KVK
4	CHHATTISGARH	BILASPUR	BILASPUR
5	CHHATTISGARH	DANTEWADA	DANTEWADA KVK
6	CHHATTISGARH	DANTEWADA	DANTEWARA TOWN
7	CHHATTISGARH	DHAMTARI	DHAMTARI
8	CHHATTISGARH	DURG	DURG
9	CHHATTISGARH	JANJIR CHAMPA	JANJIR
10	CHHATTISGARH	JASHPUR	DUMARBAHAR KVK
11	CHHATTISGARH	JASHPUR	JASHPUR NAGAR
12	CHHATTISGARH	KABIRDHAM	KAWARDHA
13	CHHATTISGARH	KANKER	KANKER TOWN
14	CHHATTISGARH	KANKER	KANKER KVK
15	CHHATTISGARH	KORBA	KORBA TOWN
16	CHHATTISGARH	KORBA	LAKHANPUR KVK
17	CHHATTISGARH	KORIYA	KORIYA TOWN
18	CHHATTISGARH	KORIYA	KORIYA KVK
19	CHHATTISGARH	MAHASAMUND	MAHASAMUND TOWN
20	CHHATTISGARH	MAHASAMUND	MAHASAMUND KVK
21	CHHATTISGARH	NARAYANPUR	NARAYANPUR TOWN
22	CHHATTISGARH	NARAYANPUR	NARAYANPUR KVK
23	CHHATTISGARH	RAIGARH	RAIGARH
24	CHHATTISGARH	RAIPUR	RAIPUR MC
25	CHHATTISGARH	RAIPUR	RAIPUR AMFU
26	CHHATTISGARH	RAJNANDGAON	RAJNANDAGAON KVK
27	CHHATTISGARH	RAJNANDGAON	RAJNANDGAON TEHSIL
28	CHHATTISGARH	SURGUJA	AMBIKAPUR AMFU

### List of Observatories of Chhattisgarh

#### Regular Observatories

<u>SNO</u>	<u>District</u>	<u>Name of Stations</u>
1	RAIPUR	RAIPUR
2	•BASTAR	JAGDALPUR
3	BILASPUR	BILASPUR
4	PENDRA-GAURELA-MARWAHI	PENDRA ROAD
5	RAIPUR	MANA AIRPORT
6	•SURGUJA	AMBIKAPUR

•BASTAR DISTRICT HQ IS JAGDALPUR AND SURGUJA DISTRICT HQ IS AMBIKAPUR BUT BOTH ARE SITUATED OUTSIDE.

#### Part Time Observatories

<u>SNO</u>	<u>District</u>	<u>Name of Observatory</u>
1	DURG	DURG
2	RAJNANDGAON	RAJNANDGAON

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