GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 3259
TO BE ANSWERED ON FRIDAY, JULY 12, 2019

DEFFICIENCY IN MONSOON RAINFALL

3259.   DR. M.K. VISHNU PRASAD:

Will the Minister of EARTH SCIENCES be pleased to state:

(a)   whether there is deficiency in monsoon rainfall in the country;

(b)   if so, the details thereof and the extent of such deficiency;

(c)   the States/UTs which are likely to experience deficiency in monsoon rainfall;

(d)   whether El Nino factor has any impact on the monsoon rainfall; if so the details thereof; and

(e)   the mechanism put in place to predict the current monsoon rainfall along with cyclone and other natural calamities in the near future?

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

(a) & (b)   No Sir. Government has not estimated the monsoon to be below average during the current year. Both the first stage Long Range Forecast issued on 15th April and the second stage updated Long Range Forecast issued on 31st May 2019 suggest that the monsoon seasonal rainfall 2019 for the country as whole is likely to be near Normal. Quantitatively, the monsoon seasonal rainfall 2019 is likely to be 96% of the Long Period Average (LPA) with a model error of ± 5%; the LPA of the seasonal rainfall over the country as a whole for the period being 89 cms. Copy of the highlights of the forecast is attached herewith as Annexure-I.

(c)   Deficiency of rain has not been predicted for southwest monsoon season 2019 by IMD. However, delay in monsoon is onset over Kerala and its progress further has caused deficiency of rainfall in the month of June. State-wise rainfall statistics for June 2019 is given in Annexure-II.

(d)   EL-Nino is one of the factors which can impact monsoon rainfall. The current weak El Nino conditions are likely to continue for some time and then to turn to neutral ENSO conditions during the second half of the monsoon season. Moreover, expected positive Indian Ocean Dipole conditions are likely to compensate the negative aspects (if any) of the unfavourable El Nino conditions, making the seasonal rainfall for the country to be near normal as predicted.

(e)   India Meteorological Department (IMD) operates dedicated weather and climate monitoring, detection and warning services useful for various sectors of economy. The weather forecasting systems in the country are at par to most of the developed countries in the world.

IMD is fully capable for early prediction and issuance of forecasts and warnings of extreme weather phenomena like heavy Rainfall, tropical Cyclones etc. so as to enable disaster managers to minimise loss of life and damage to property.IMD has well established infrastructure for meteorological observations, data exchange, monitoring & analysis, forecasting and warning services using contemporary digital computerized technology. IMD uses a suite of quality observations from Satellites, Radars and conventional & automatic weather stations for monitoring weather developments. It includes INSAT 3D, 3DR and SCATSAT satellites, Doppler Weather Radars (DWRs) along the coast, automated weather stations (AWS), automatic rain gauges (ARGs), meteorological buoys and ships.

Under National Monsoon Mission, MoES has implemented two state of the art dynamical prediction systems for short, medium &extended range forecasts and seasonal forecasts. All these initiatives have helped to improve the accuracy of forecast.

The recent upgradation of the High Performance Computing Systems with Mihir and Pratyush commissioned in the recent past has helped in the implementation of the following numerical models which would further refine weather forecasting.

- Global Ensemble Forecasting System (GEFS) at a very high a resolution of 12 km to provide forecast upto 7 days (from 1st June, 2018).
- The Unified Model (UM) and Unified Model Ensemble Prediction System (UMEPS) to provide forecast upto 7 days with 12 km resolution (from 1st June, 2018).

In addition to this, IMD also runs cyclone specific multi-nested Hurricane Weather Research & Forecast (HWRF) Model with a resolution of 18 km, 6 km and 2 km for cyclone track and intensity prediction.

Upgradation of the forecasting system is a continuous process in IMD with respect to weather monitoring and analysis, forecasting and warning services along with high-end computing and networking infrastructure including effective dissemination system.

भारत सरकार
Government of India
पृथ्वी विज्ञान मंत्रालय (एम. ओ. ई. एस.)
Ministry of Earth Sciences (MoES)
भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
Long Range Forecast Update for
The 2019 Southwest Monsoon Rainfall

Highlights

- Rainfall over the country as a whole for the 2019 southwest monsoon season (June to September) is most likely to be **NORMAL** (96% to 104% of long period average (LPA)).

- Quantitatively, monsoon season rainfall for the country as a whole is likely to be **96%** of the LPA with a model error of **±4%**.

- Region wise, the season rainfall is likely to be **94%** of LPA over North-West India, **100%** of LPA over Central India, **97%** of LPA over South Peninsula and **91%** of LPA over North-East India all with a model error of **± 8 %**.

- The monthly rainfall over the country as whole is likely to be **95%** of its LPA during July and **99%** of LPA during August both with a model error of **± 9 %**.

- The current weak **El Niño** conditions over Pacific are likely to continue during the monsoon season with some possibility of these conditions to turn to neutral ENSO conditions during the latter part of the monsoon season.

  IMD will issue forecast for the rainfall during the second half of the season in the end of July 2019.

STATE-WISE RAINFALL (MM) DISTRIBUTION

S. NO.	STATES	ERIOD:	01.06.2019	TO	30.06.2019
		ACTUAL	NORMAL	% DEP.	CAT.
EAST & NORTH EAST INDIA					
1	ARUNACHAL PRADESH	310.3	490.7	-37%	DEFICIENT
2	ASSAM	314.2	418.3	-25%	DEFICIENT
3	MEGHALAYA	615.7	792.8	-22%	DEFICIENT
4	NAGALAND	190.7	282.8	-33%	DEFICIENT
5	MANIPUR	155.1	425.3	-64%	LARGE DEFICIENT
6	MIZORAM	273.9	435.5	-37%	DEFICIENT
7	TRIPURA	316.7	460.1	-31%	DEFICIENT
8	SIKKIM	486.0	425.4	14%	NORMAL
9	WEST BENGAL	162.4	316.7	-49%	DEFICIENT
10	JHARKHAND	89.6	199.9	-55%	DEFICIENT
11	BIHAR	98.7	167.7	-41%	DEFICIENT
NORTH WEST INDIA					
1	UTTAR PRADESH	37.3	94.8	-61%	LARGE DEFICIENT
2	UTTARAKHAND	84.3	177.8	-53%	DEFICIENT
3	HARYANA	18.9	47.5	-60%	LARGE DEFICIENT
4	CHANDIGARH (UT)	24.8	130.2	-81%	LARGE DEFICIENT
5	DELHI	6.6	62.1	-89%	LARGE DEFICIENT
6	PUNJAB	25.0	50.4	-50%	DEFICIENT
7	HIMACHAL PRADESH	54.2	100.5	-46%	DEFICIENT
8	JAMMU & KASHMIR	79.2	73.9	7%	NORMAL
9	RAJASTHAN	45.7	50.2	-9%	NORMAL
CENTRAL INDIA					
1	ODISHA	146.4	217.7	-33%	DEFICIENT
2	MADHYA PRADESH	70.4	120.9	-42%	DEFICIENT
3	GUJARAT	84.8	113.6	-25%	DEFICIENT
4	DADRA & NAGAR HAVELI (UT)	364.7	349.1	4%	NORMAL
5	DAMAN & DIU (UT)	236.8	280.6	-16%	NORMAL
6	GOA	781.7	898.3	-13%	NORMAL
7	MAHARASHTRA	155.3	207.6	-25%	DEFICIENT
8	CHHATISGARH	129.4	193.5	-33%	DEFICIENT
SOUTH PENINSULA					
1	A & N ISLAND (UT)	662.2	413.7	60%	LARGE EXCESS
2	ANDHRA PRADESH	61.1	91.0	-33%	DEFICIENT
3	TELANGANA	86.3	132.0	-35%	DEFICIENT
4	TAMILNADU	33.6	54.1	-38%	DEFICIENT
5	PUDUCHERRY (UT)	30.5	73.0	-58%	DEFICIENT
6	KARNATAKA	152.8	199.3	-23%	DEFICIENT
7	KERALA	358.5	643.0	-44%	DEFICIENT
8	LAKSHADWEEP (UT)	243.5	330.3	-26%	DEFICIENT

COUNTRY AS A WHOLE	112.1	166.9	-33%

CATEGORYWISE DISTRIBUTION OF NO. OF STATES

CATEGORY	PERIOD: 01.06.2019 TO 30.06.2019
	NO. OF STATES
LARGE EXCESS (+60% or more)	1
EXCESS (+20% to +59%)	0
NORMAL(+19% to -19%)	6
DEFICIENT ((-20% to -59%)	24
LARGE DEFICIENT (-60% to -99%)	5