PRESS RELEASE

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Government of India

पृथ्वीविज्ञानमंत्रालय (एम. ओ. ई. एस.)

Ministry of Earth Sciences (MoES)

भारत मौसम विज्ञानविभाग

INDIA METEOROLOGICAL DEPARTMENT

Updated Rainfall Normal based on data of 1971-2020

HIGHLIGHTS

- The ***New*** All-India rainfall normal computed based on data of 1971-2020 for the southwest monsoon season (June-September) is ***868.6mm.*** It will replace the earlier normal of 880.6 mm based on data of 1961-2010
- The ***New*** All-India annual rainfall normal based on data of 1971-2020 is ***1160.1 mm*** compared to earlier normal of 1176.9mm based on data of 1961-2010.
- Thus there is a decrease ***of 12.0 mm in mean rainfall during southwest monsoon season and 16.8 mm in annual rainfall for the country as a whole from 1961-2010 to 1971-2020.***
- The above decrease is part of natural multidecadal epochal variability of dry and wet epochs of all India rainfall. Presently the south west monsoon is passing through dry epoch which started since the decade of 1971-80. The decadal average of all India SW monsoon rainfall for the decade 2011-20 is -3.8% from the long-term mean. The next decade i.e. 2021-30 is expected to come closer to neutral and southwest monsoon would enter into the wet epoch from the decade, 2031-40 (**Fig. 1**)
- The new rainfall normal has been computed using rainfall data 4132 raingauge stations well distributed over the country representing 703 districts of India (**Fig. 2**).
- Based on data of 1971-2020, the southwest monsoon rainfall over India contributes **74.9%** to the Annual Rainfall. June, July, August, and September contribute **19.1%, 32.3%, 29.4% & 19.3%** respectively to the total SW monsoon seasonal rainfall. These figures remained unchanged as compared to those based on data of 1961-2010 (**Table-1**).
- All India premonsoon season (March-May) rainfall (130.6mm) and post-monsoon season rainfall (121.0mm) contribute around 11% and **10%** respectively to the annual rainfall over India.
- Gujarat region receives maximum rainfall i.e. **96%** of it's annual rainfall in southwest monsoon season while Tamil Nadu receives maximum rainfall i.e **48%** of annual rainfall in northeast monsoon season (October-December) followed by 36% in southwest monsoon season.

Updated Rainfall Normal based on data of 1971-2020

India Meteorological Department (IMD) monitors daily, weekly, monthly, seasonal and annual rainfall of districts, states, subdivisions, homogeneous regions, and India as a whole on a real-time basis. Imd prepare rainfall summaries and the percentage departures from the normal. This rainfall Normal is prepared based on the data for the period of 50 years and is updated periodically once in every decade by incorporating the latest data from raingauge stations. The new updated rainfall normal has been prepared based on data of 1971-2020 and will replace the existing rainfall normal based on 1961-2010 with effect from the southwest monsoon season 2022.

During the southwest monsoon season (June-September), India receives about 868.6 mm rainfall which is about 75% of the annual rainfall (1160.1mm). Out of twelve months, July receives maximum rainfall of 280.4 mm followed by August (254.9mm).

The meteorological subdivision, Konkan and Goa receives highest rainfall of more than 300 cm annually followed by subdivisions in the northeastern India which have annual rainfall normal between 200 to 280 cm. West Rajasthan receives lowest annual rainfall of about 33 cm including about 28 cm during southwest monsoon season(**Fig. 3**).

During the winter season (Jan-Feb) extreme northern subdivisions as well as Arunachal Pradesh receives highest rainfall in the range of 120-225 mm due to the western disturbances while western parts receive lowest rainfall (less than 15mm).

In premonsoon season (March-May) northeastern India receive highest rainfall followed by Kerala in the range of 350-758mm.

The normal rainfall for the SW monsoon season is highest over Assam and Meghalaya followed by western coastal subdivisions with value more than 1600mm.

During postmonsoon season (October-December), Tamilnadu and Kerala receive rainfall of more than 350mm while other adjacent subdivisions receive in the range of 150-350mm.

The normal annual rainfall based on 1971-2020 is higher than that based on 1961-2010 over westcentral India, while it is less over UP, Arunachal Pradesh, Nagaland, Manipur Mizoram and Tripura (**Fig.4**).

Table 1(a): Monthly Normal Rainfall over India based on 1971-2020 & 1961-2010

	1961-2010			1971-2020		
Months	Rainfall (mm)	% of Annual Rainfall(mm)	% of Seasonal Rainfall (mm)	Rainfall (mm)	% of Annual Rainfall(mm)	% of Seasonal Rainfall (mm)
January	17.3	1.5	42.4	17.1	1.5	43.0
February	23.5	2.0	57.6	22.7	2.0	57.0
March	30.4	2.6	23.1	29.9	2.6	23.0
April	39.3	3.3	29.8	39.3	3.4	30.1
May	62.0	5.3	47.1	61.4	5.3	47.1
June	166.9	14.2	19.0	165.4	14.3	19.1
July	285.4	24.3	32.4	280.4	24.2	32.3
August	258.1	21.9	29.3	254.9	22.0	29.4
September	170.2	14.5	19.3	167.9	14.4	19.3
October	76.0	6.5	61.4	75.4	6.5	62.3
November	30.4	2.6	24.6	29.7	2.6	24.6
December	17.4	1.5	14.1	15.9	1.4	13.2

Table 1(b): Seasonal Normal Rainfall over India based on 1971-2020 and 1961-2010

	1961-2010		1971-2020	
Season	Rainfall(mm)	% of Annual Rainfall(mm)	Rainfall(mm)	% of Annual Rainfall(mm)
Winter (JF)	40.8	3.5	39.8	3.4
Pre Monsoon (MAM)	131.7	11.2	130.6	11.3
SW Monsoon (JJAS)	880.6	74.8	868.6	74.9
Post Monsoon (OND)	123.8	10.5	121.0	10.4

Table 1(c): Annual Normal Rainfall over India based on 1971-2020 and 1961-2010

Period	1961-2010	1971-2020
Annual Rainfall (mm)	1176.9	1160.1

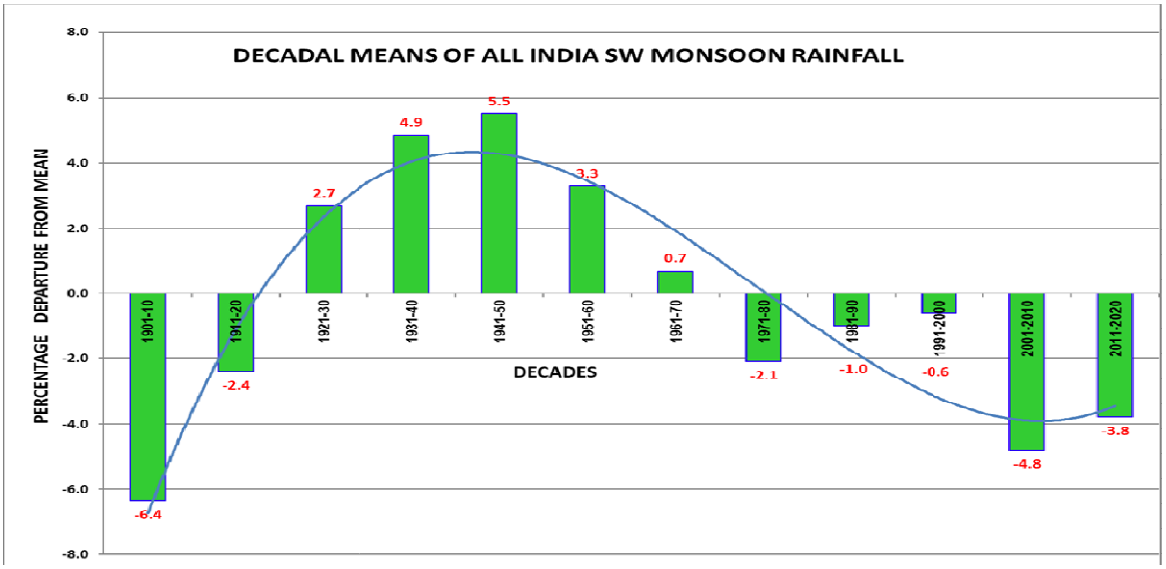

Fig. 1 Decadal Variability of all India SW Monsoon rainfall during 1901-2020

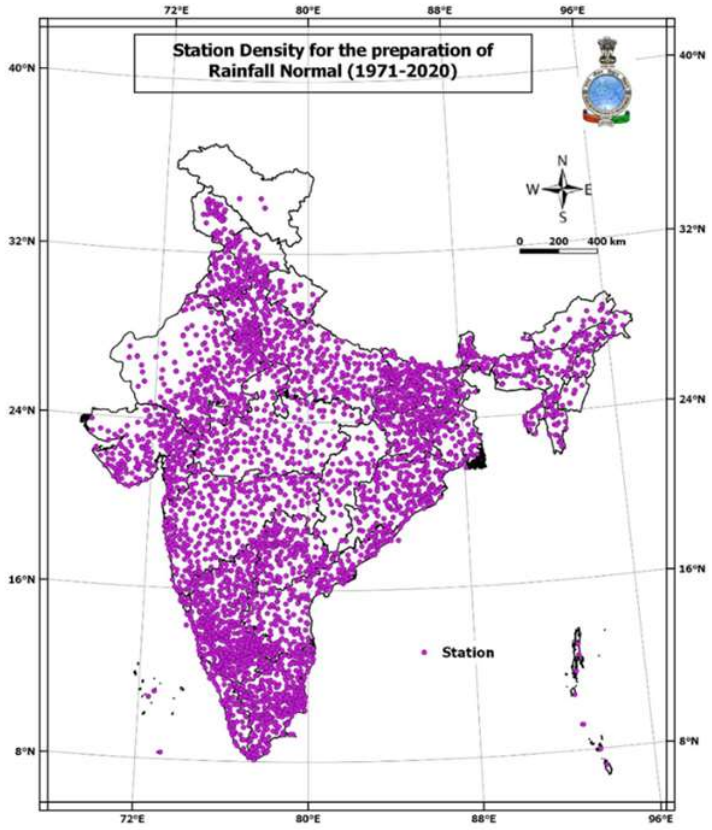

Fig. 2. Distribution of 4132 raingauge stations used for computation of rainfall normal 1971-2020

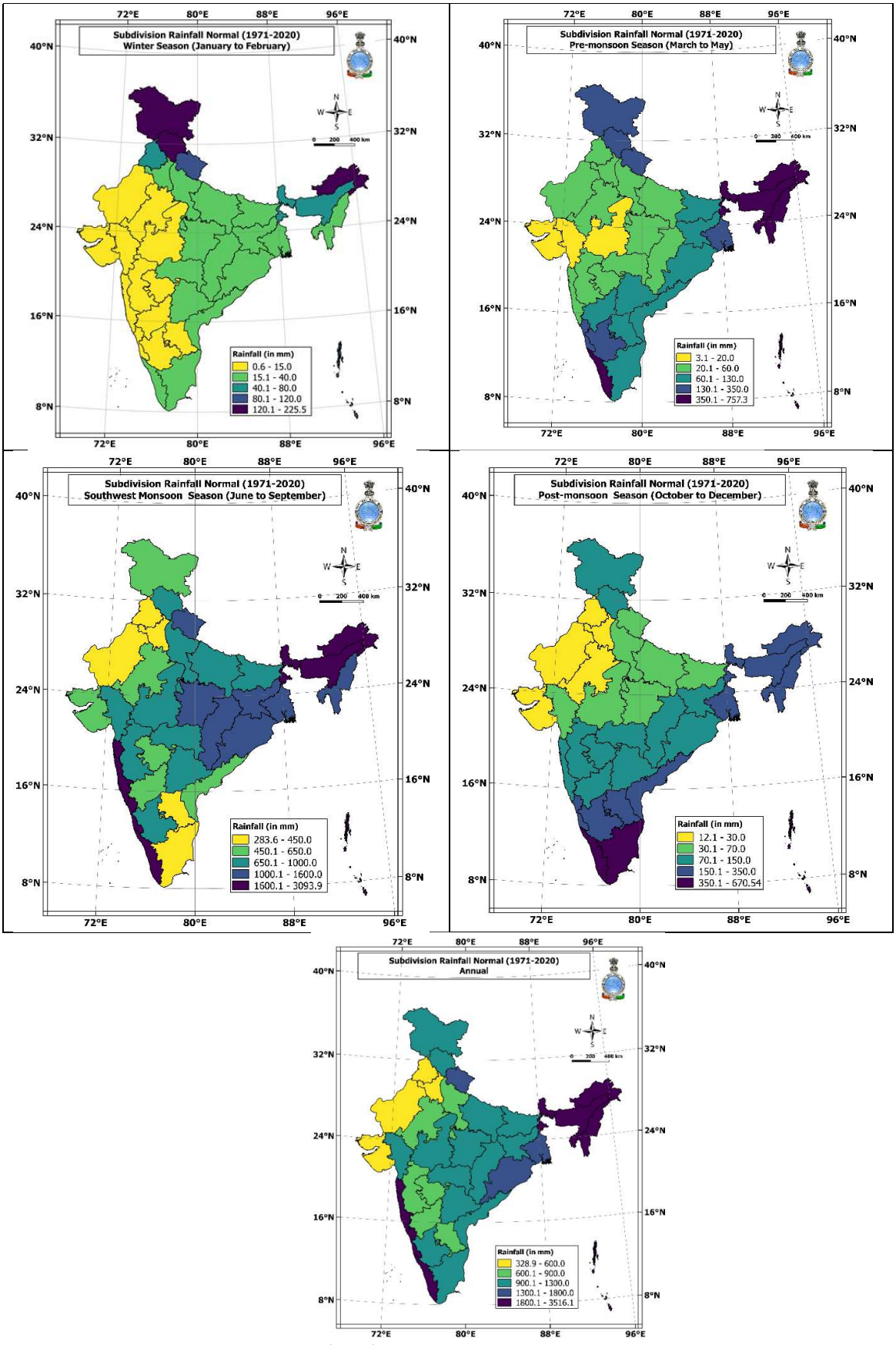

Fig. 3. New rainfall normal (mm)for the 36 meteorological subdivisions of India for four seasons and year as a whole

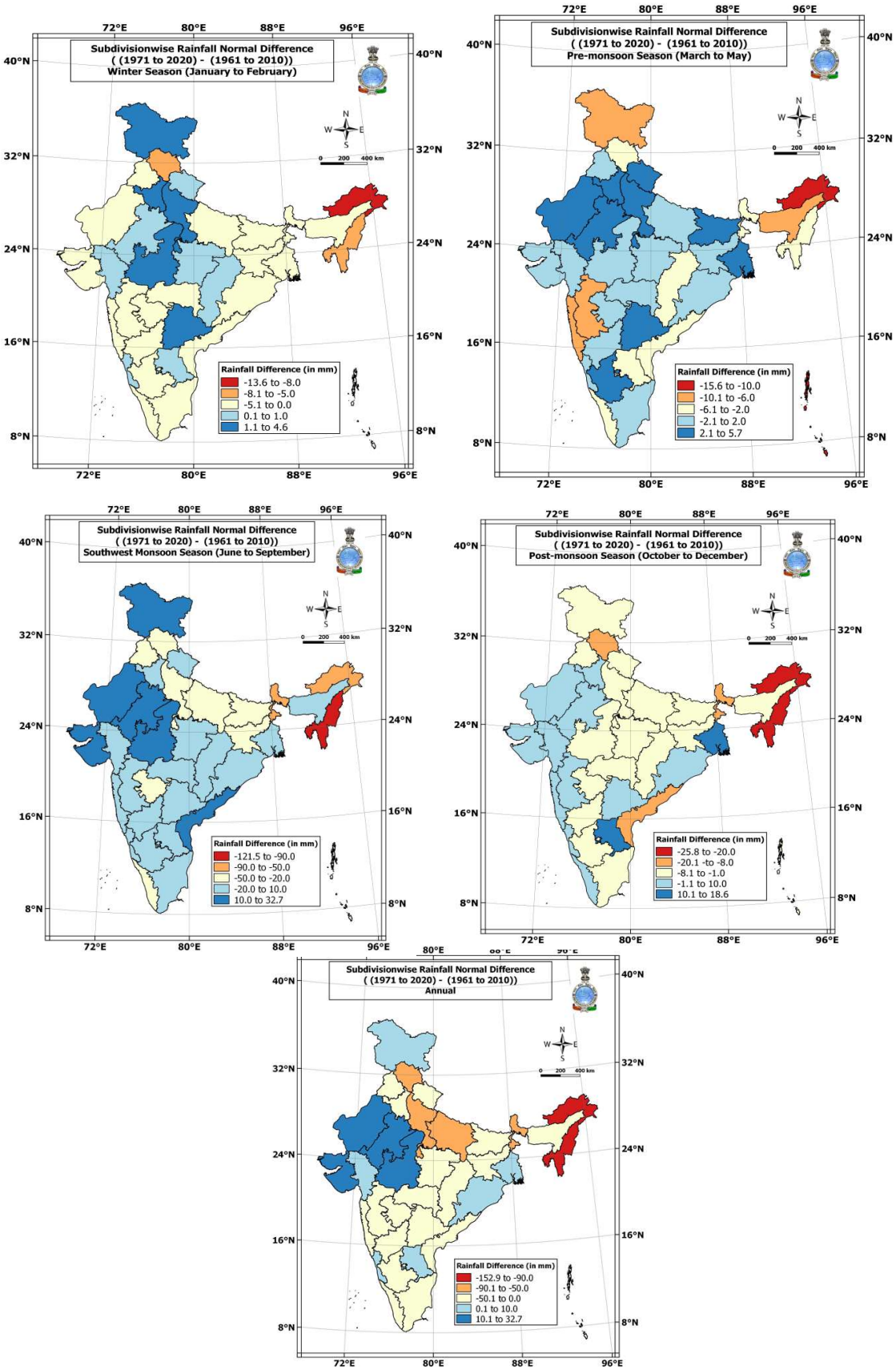

Fig. 4. Changes in normal rainfall (mm) over 36 meteorological subdivisions of India for four seasons and year as a whole based on 1971-2020 against normal rainfall based on 1961-2010