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भारत मौसम विज्ञान विभाग

पृथ्वी विज्ञान मंत्रालय

INDIA METEOROLOGICAL DEPARTMENT

Ministry of Earth Sciences

WEEKLY WEATHER REPORT
साप्ताहिक मौसम विवरण

for the week ending on **17th May 2017** (27th Vaisakha 1939 Saka)

CHIEF FEATURES: (1) The Southwest Monsoon advanced into some parts of southeast Bay of Bengal, Andaman Sea and Andaman & Nicobar Islands during 14th - 17th May. (2) Severe heat wave / heat wave conditions prevailed at isolated places in central, east and southeast India.

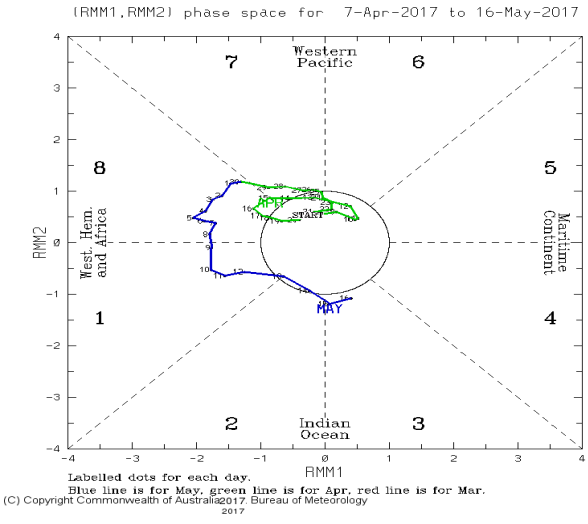


Fig. (a)

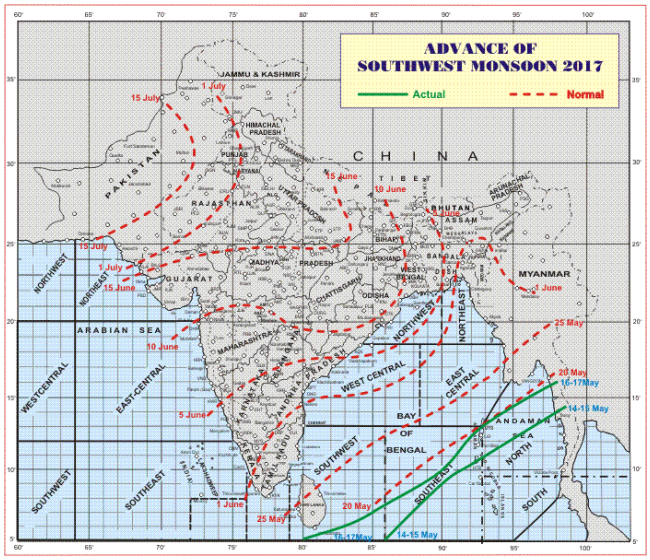


Fig. (b)

The Madden Julian Oscillation (MJO) phase diagram reproduced in Fig. (a) depicts the progression of MJO through different phases which generally coincides with the locations along the equator around the globe. RMM1 & RMM2 are mathematical methods that combine cloud amount and wind at upper & lower levels of the atmosphere to provide a measure of the strength and location of the MJO. When the index is within the circle, it is considered to be weak and outside the circle, stronger. From the figure, it may be noted that the MJO propagated eastwards from western Hemisphere & Africa to the Indian Ocean during 13th - 16th May. This contributed to the enhanced convection over the region during the later part of the week. With the formation of a cyclonic circulation over Andaman Sea, the southwesterlies crossing the equator strengthened and deepened, leading to persistent cloudiness and rainfall over the region. **Thus the Southwest Monsoon advanced into: some parts of southeast Bay of Bengal, Nicobar Islands, entire south Andaman Sea and parts of north Andaman Sea on 14th and into some parts of southwest Bay of Bengal, some more parts of southeast Bay of Bengal and north Andaman Sea and remaining parts of Andaman & Nicobar Islands on 16th.**

The Northern Limit of Monsoon (NLM) passed through: Lat.5°N / Long. 86°E, Lat.9°N / Long. 90°E, Hut Bay and Lat. 14°N / Long. 98°E on 14th-15th and through Lat.5°N / Long. 80°E, Lat.7°N / Long. 85°E, Lat. 10°N / Long. 90°E, Maya Bandar and Lat. 16°N / Long. 98°E on 16th - 17th May. Fig (b) shows the isochrones of advance of southwest monsoon.

SEMI-PERMANENT FEATURES:

1. **Intertropical Convergence Zone (ITCZ):** The ITCZ or the seasonal trough (at surface and in the lower tropospheric levels) passes from south Arabian Sea to Andaman Sea across the south peninsula during the month of October. It further shifts southwards to the south of Lat. 10°N, during November & December and starts shifting northwards subsequently. The climatological normal mean sea level pressure is 1010 hPa. During the week, its western part was located close to Equator and the eastern part remained to the north of 5°N.
2. **Sub Tropical Westerly Jet (STWJ):** The STWJ is a fast flowing narrow air current from west to east around 200 hPa level with core wind speed more than 60 kts. It shifts northwards during the southwest monsoon season. As the Tibetan Anticyclone shifts southeastwards towards the end of the southwest monsoon season, STWJ also shifts southwards and re-establishes over the Indian latitudes. During the week, its core was located between Lat. 26°N & Lat. 30°N with the wind speed varying from 63 - 87 kts around 200 hPa. The highest wind speed of 87 kts was recorded over Dibrugarh at 194 hPa on 15th May.
3. **Sub Tropical Ridge (STR):** The STR is a significant belt of high pressure situated around the latitudes of 30°N in the Northern Hemisphere and 30°S in the Southern Hemisphere. It tilts equatorwards with height. It osillated between Equator to Lat. 19°N.

MAXIMUM TEMPERATURES/HEAT WAVE:

Severe heat wave conditions prevailed at isolated places in coastal Andhra Pradesh on 16th.

Heat wave conditions prevailed at a few places in Odisha, east Madhya Pradesh and Vidarbha on 15th and in Odisha, Vidarbha and coastal Andhra Pradesh on 16th and at isolated places in north Madhya Pradesh on 13th, isolated places in: Odisha, east Uttar Pradesh, Madhya Pradesh and Vidarbha on 14th, in Jharkhand, east Madhya Pradesh and Tamil Nadu on 16th and in Odisha, Vidarbha, coastal Andhra Pradesh and Tamil Nadu on 17th.

Warm night conditions prevailed at isolated places in east Rajasthan on 14th.

The highest maximum temperature recorded over the plains was 47.0°C at Banda (east Uttar Pradesh) on 15th.

SEVERE WEATHER EVENTS:

As reported by M. C. Dehra Dun, Hailstorm occurred at isolated places in Pauri, Nainital and Pithoragarh districts of Uttarakhand on 16th. As per media reports, Hailstorm occurred at isolated places in Keonjhargarh (Odisha) on 16th.

Thunder Squalls occurred at Alipore & Dum Dum (Gangetic west Bengal) and at Ranch (Jharkhand) on 11th; at Pune (Madhya Maharashtra) , Alipur, Haldia, Dum Dum (Gangetic west Bengal) on 13th; at Malda (west Bengal) on 15th; at Alipore on 16th and at Haldia and Malda (west Bengal) on 17th.

WEATHER AND ASSOCIATED SYNOPTIC FEATURES:

- Last week's the east - west trough upto 0.9 km a.s.l. from Haryana to west Assam extended from central parts of Rajasthan to south Assam across north Madhya Pradesh, southeast Uttar Pradesh, Bihar and Sub-Himalayan West Bengal on 11th. It became less marked on 12th.
- A cyclonic circulation extending upto 1.5 kms a.s.l. lay over central parts of south Uttar Pradesh and adjoining north Madhya Pradesh embedded in the above trough on 11th, over southeast Uttar Pradesh & neighbourhood extending upto 0.9 km a.s.l. on 12th and over Bihar and adjoining Jharkhand on 13th. It became less marked on 14th.
- A cyclonic circulation extending upto 0.9 km a.s.l. lay over central parts of Rajasthan and neighbourhood embedded in the above trough on 11th, over northwest Madhya Pradesh & neighbourhood extending upto 1.5 kms a.s.l. on 12th, over central parts of south Uttar Pradesh and adjoining north Madhya Pradesh on 13th, over east Uttar Pradesh and neighbourhood extending upto 0.9 km a.s.l. on 14th -15th, over southeast Uttar Pradesh and neighbourhood on 16th and over north Chhattisgarh and neighbourhood on 17th.
- A trough upto 0.9 km a.s.l. extended from the above cyclonic circulation to: Mizoram across Bihar, Sub-Himalayan West Bengal and Assam on 14th, east Arunachal Pradesh across Bihar, Sub-Himalayan West Bengal and south Assam on 15th, northwest Bay of Bengal across Jharkhand and Gangetic West Bengal on 16th and to north coastal Andhra Pradesh across interior Odisha upto 1.5 kms a.s.l. on 17th.
- A cyclonic circulation between 1.5 & 2.1 Kms a.s.l. lay over eastern parts of Bihar and adjoining Sub-Himalayan West Bengal on 12th and over northern parts of Bangla Desh and neighbourhood extending between 1.5 & 3.1 kms a.s.l. on 13th. It persisted there, lay embedded in the above trough extending upto 0.9 km a.s.l. on 14th, lay embedded in the above trough extending upto 2.1 kms a.s.l. on 15th, over Meghalaya and neighbourhood extending between 1.5 & 5.8 kms a.s.l. on 16th and over Mizoram and neighbourhood on 17th.
- The cyclonic circulation extending upto 1.5 kms a.s.l. over Assam and neighbourhood persisted there on 11th and over east Assam & neighbourhood between 1.5 & 2.1 kms a.s.l. on 12th. It became less marked on 13th.
- Last week's the Western Disturbance (WD) as a trough in mid tropospheric westerlies with its axis at 5.8 kms a.s.l. roughly along Long. 62°E to the north of Lat. 25°N persisted there on 11th and along Long. 64°E to the north of Lat. 25°N on 12th. It lay as a cyclonic circulation over north Pakistan and adjoining Jammu & Kashmir extending upto 3.1 kms a.s.l. on 13th, over Jammu & Kashmir and adjoining north Pakistan on 14th, over Jammu & Kashmir and neighbourhood on 15th and over northeast Jammu & Kashmir and neighbourhood on 16th - 17th.
- A fresh WD as a trough in mid tropospheric westerlies with its axis at 5.8 kms a.s.l. extended roughly along Long. 54°E to the north of Lat. 30°N on 14th, Long. 60°E to the north of Lat. 27°N on 15th, Long. 64°E to the north of Lat. 27°N on 16th and along Long. 72°E to the north of Lat. 25°N on 17th.
- A cyclonic circulation extending upto 1.5 kms a.s.l. lay over north interior Karnataka and adjoining Telangana on 11th and over north interior Karnataka & neighbourhood extending upto 0.9 km a.s.l. on 12th - 13th. It persisted there at 1.5 kms a.s.l. on 14th. It became less marked on 15th.
- The trough from north interior Karnataka to south Tamil Nadu extended from the above cyclonic circulation to: Comorin area across interior Tamil Nadu at 1.5 kms a.s.l. on 11th, south Kerala across south interior Karnataka extending upto 0.9 km a.s.l. on 12th and to Comorin area across south interior Karnataka and interior Tamil Nadu on 13th. It became less marked on 14th.
- A trough upto 0.9 km a.s.l. extended from northwest Madhya Pradesh to north Madhya Maharashtra on 14th. It became less marked on 15th.
- A trough upto 0.9 km a.s.l. extended from Marathwada to south Tamil Nadu acorss Telangana and Rayalaseema on 14th. It became less marked on 15th.
- A cyclonic circulation extending upto 3.6 kms a.s.l. lay over south Andaman sea and adjoining Malay peninsula on 12th - 13th, over north Andaman Sea and neighbourhood on 14th - 15th and over Gulf of Martaban and neighbourhood on 16th - 17th.
- A trough at mean sea level extended from: north coastal Andhra Pradesh to south coastal Tamil Nadu along the east coast on 16th and from south coastal Andhra Pradesh to south Tamil Nadu across Rayalaseema on 17th.
- A cyclonic circulation between 1.5 & 2.1 kms a.s.l. lay over Maldives and adjoining Lakshadweep area on 12th and over Lakshadweep area and neighbourhood extending upto 1.5 Kms a.s.l. on 13th. It became less marked on 14th.
- The cyclonic circulations over (i) Haryana and neighbourhood, (ii) Sub-Himalayan West Bengal & Sikkim and (iii) south coastal Andhra Pradesh and neighbourhood became less marked on 11th.

Details of the rainfall received under the influence of these synoptic systems are given in the subsequent Figures and Tables.

Media Reports: Thundersquall claimed 25 lives and injured 40 as a wall collapsed during a wedding in Bharatpur, Rajasthan (**UNI/PTI/Hindusthan Times 11th May**). Lightning claimed: 1) five lives and injured two in Maharashtra, 2) One life in Mysuru, Karnataka, 3) five lives and two injured in Bihar, 4) seven lives and injured three in Ananthapuram and Kurnool, Andhra Pradesh (**UNI 11th, 12th, 14th & 15th May**). Lightning / Squall claimed eight lives and injured three others in Kolkata, south Bengal (**UNI 14th May**). Sunstroke claimed 46 lives (so far) in Odisha (**UNI 17th May**).

(Sunitha Devi S.)

17th May 2017
Pune - 5

For Head, Climate Monitoring & Analysis Group,
Climate Research Division, Pune

Rainfall % Departure
For the week ending
17th May 2017

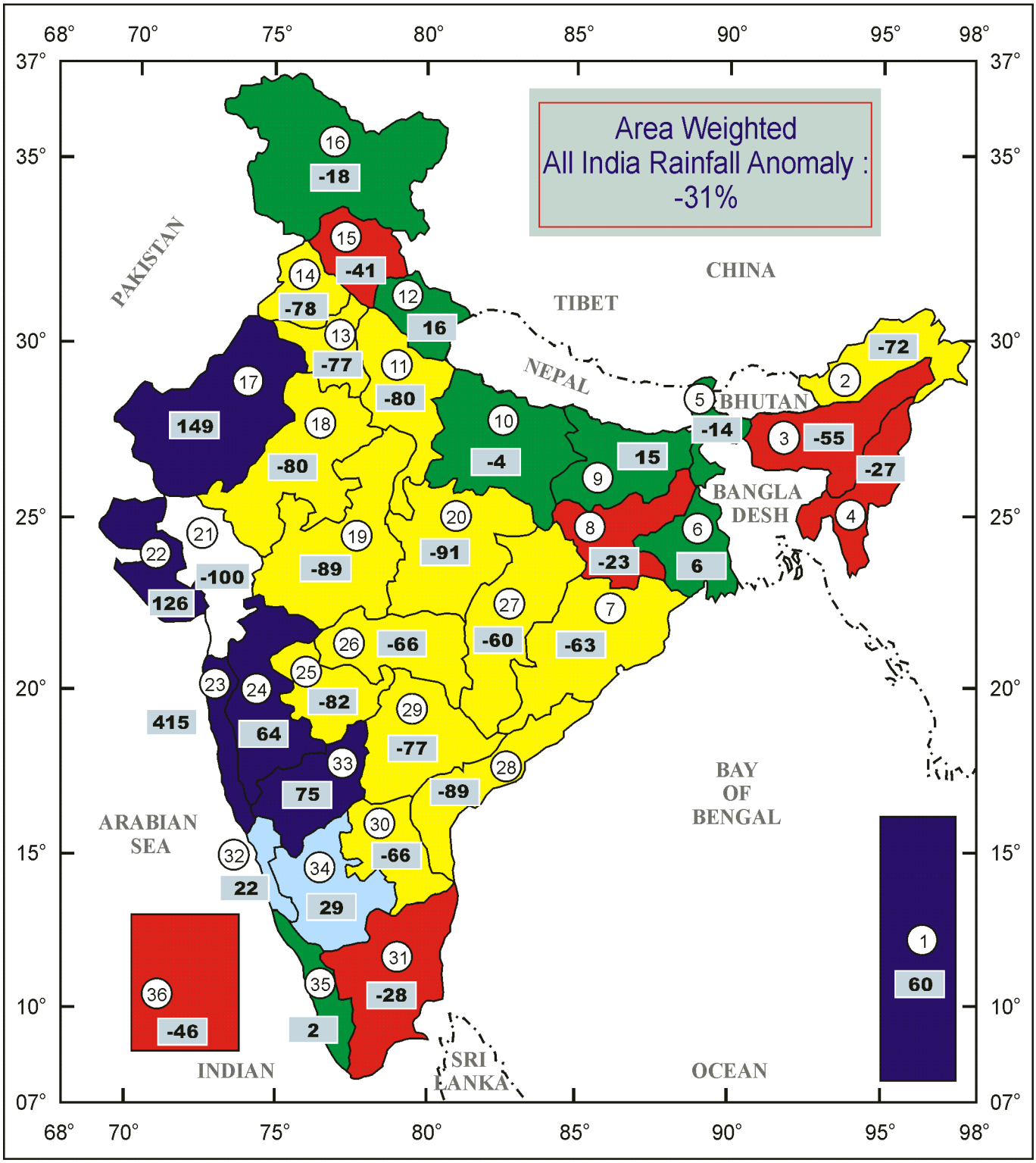
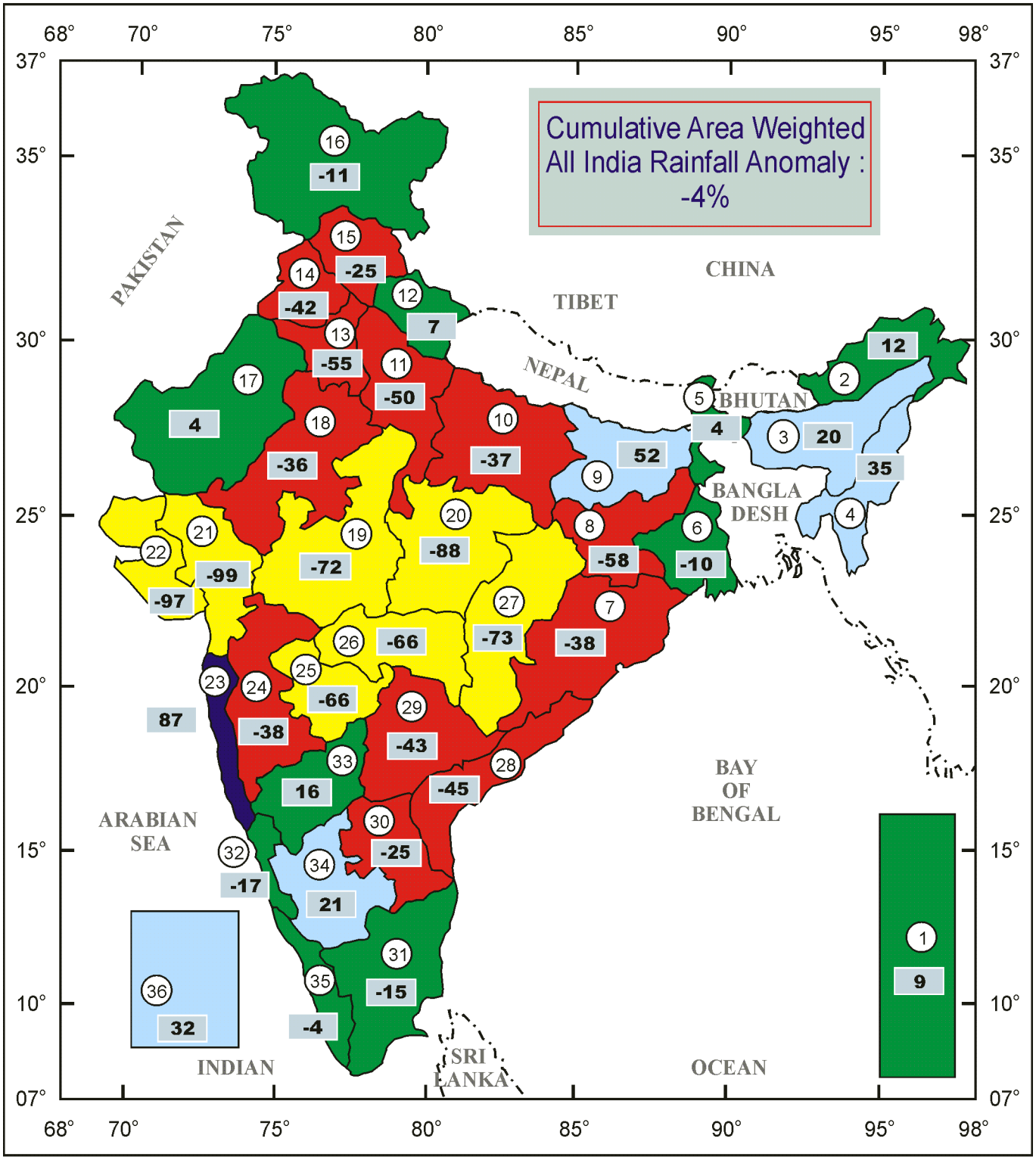


Figure in ○ Indicates sub-division number. Figure in □ indicates rainfall anomaly.

Large Excess +60% and above 06	Excess +20% to +59% 02	Normal -19% to +19% 07	Deficient -20% to -59% 06
Large Deficient -60% to -99% 14	No Rain -100% 01		

Rainfall % Departure
For the period
1st March to 17th May 2017



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Large Excess +60% and above 01	Excess +20% to +59% 05	Normal -19% to +19% 11	Deficient -20% to -59% 12
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