

'Long Period Average' (LPA)

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In news— The India Meteorological Department's (IMD) recent prediction of a normal monsoon was based on the LPA of the 1971-2020 period, during which India received 87 cm of rain for the entire country on average.

What is the Long Period Average (LPA)?

- **The IMD predicts a “normal”, “below normal”, or “above normal” monsoon in relation to a benchmark “long period average” (LPA).**
- According to the IMD, the **“LPA of rainfall is the rainfall recorded over a particular region for a given interval** (like month or season) averaged over a long period like 30 years, 50 years, etc”.
- The IMD has in the past calculated the LPA at 88 cm for the 1961-2010 period, and at 89 cm for the 1951-2000.
- While this quantitative benchmark refers to the **average rainfall recorded from June to September for the entire country**, the amount of rain that falls every year varies from region to region and from month to month.
- The IMD also maintains LPAs for every meteorological region of the country; this number ranges from around 61 cm for the drier Northwest India to more than 143 cm for the wetter East and Northeast India.
- The IMD records rainfall data at more than 2,400 locations and 3,500 rain-gauge stations.
- **A 50-year LPA covers for large variations in either direction caused by freak years of unusually high or low rainfall** (as a result of events such as El Nino or La Nina), as well as for the periodic drought years and the increasingly common extreme weather events caused by climate change.
- **The IMD maintains five rainfall distribution categories on an all-India scale. These are:**

1. **Normal or near normal**, when the percentage departure of actual rainfall is +/-10% of LPA, that is, between 96-104% of LPA.
2. **Below normal**, when departure of actual rainfall is less than 10% of LPA, that is 90-96% of LPA;
3. **Above normal**, when actual rainfall is 104-110% of LPA.
4. **Deficient**, when departure of actual rainfall is less than 90% of LPA; and
5. **Excess**, when the departure of actual rainfall is more than 110% of LPA.

What is the Range of normal rainfall in the country?

- As per IMD, southwest monsoon seasonal (June to September) rainfall over the country as a whole is most likely to be normal (96 to 104% of LPA).
- Quantitatively, the monsoon seasonal (June to September) rainfall is likely to be 99% of the LPA with a model error of $\pm 5\%$.

The India Meteorological Department(IMD) -

- It was established in 1875.
- It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology and allied subjects.
- The administrative responsibilities of the Department are under the supervision of the Ministry of Earth Sciences of the Indian Government.
- IMD is headquartered in Delhi and operates hundreds of observation stations across India and Antarctica.
- Regional offices are at Chennai, Mumbai, Kolkata, Nagpur, Guwahati and New Delhi.
- IMD is also one of the six Regional Specialised Meteorological Centres of the World Meteorological Organisation.
- It has the responsibility for forecasting, naming and

distribution of warnings for tropical cyclones in the Northern Indian Ocean region, including the Malacca Straits, the Bay of Bengal, the Arabian Sea and the Persian Gulf.

Further

reading -

<https://journalsofindia.com/india-meteorological-department-ind/>