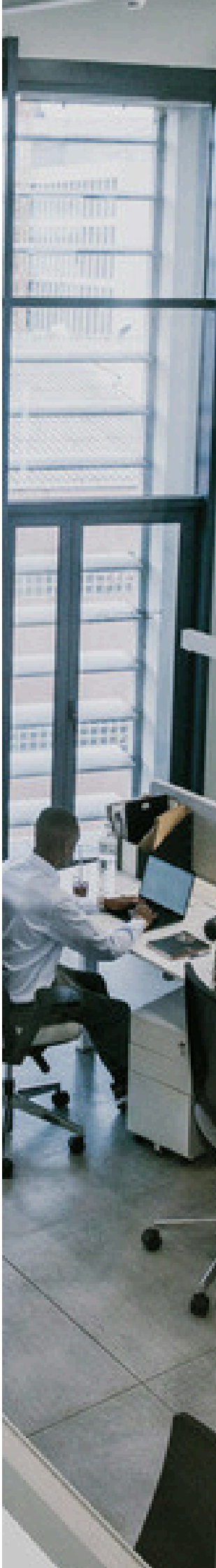
NCDEX
Pragati ka Solid Exchange

INDIA'S FIRST
EXCHANGE-TRADED WEATHER DERIVATIVES

FAQs

INDEX



Background

1. What is meant by weather derivatives?

Weather derivatives are financial instruments that can be used by organizations or individuals as part of a risk management strategy to reduce risk associated with adverse or unexpected weather conditions. A weather derivative has an underlying measure such as rainfall, temperature, humidity, or snowfall etc.

2. What is rainfall-based derivative?

It is a type of weather derivative and financial instrument whose payoff depends on actual rainfall recorded at a defined location during a specific period.

3. How rainfall is defined on any particular day?

Rainfall is measured using rain gauges or automatic weather stations (AWS) installed at specific locations; therefore, rainfall represents the precipitation recorded at that exact location. For example, “rainfall at Colaba Station or rainfall over Colaba Station” refers to the measurement captured by the Colaba rain gauge installed at Colaba station of Indian meteorological department (IMD) or any other exchange specified agency.

The standard unit of rainfall measurement is millimeters (mm), which basically represents the depth of water collected in the gauge.

Rainfall for any given day is defined as the total cumulative rainfall measured during the 24-hour period ending at 8:30 am on that day. For instance, the rainfall for June 5, 2025 is the accumulated rainfall recorded from 8:30 am on June 4, 2025 up to 8:30 am on June 5, 2025.

Note: Even if a portion of the 24-hour period falls on the previous calendar day, the entire 8:30 am–to–8:30 am measurement is attributed to the current day’s rainfall value as per IMD standards.

4. Why are weather derivatives needed in India?

The southwest monsoon is a critical determinant of India’s macroeconomic performance, accounting for nearly 75–80% of annual rainfall between June and September. Monsoon outcomes significantly influence economic planning, policy decisions, and business expectations. Increasing weather variability—especially in rainfall—has emerged as a key risk factor affecting multiple sectors such as agriculture, power, construction, logistics, tourism, and insurance.

Currently, weather risk mitigation in India primarily relies on insurance products (e.g., crop and motor insurance) and government support mechanisms. However, these solutions have limited coverage, involve complex procedures, and often require administrative intervention to assess losses. Insurance payouts are triggered only when predefined thresholds are breached, while government relief is largely confined to catastrophic events and to the agricultural sector. As a result, most corporates and non farm participants remain inadequately protected against weather-related financial risks.

Weather derivatives can address these gaps by offering a market-driven, transparent, and faster risk management solution. Based on objective and verified weather data, they enable farmers, businesses, and institutions to freely hedge weather risks without the need for loss assessment or government intervention, making them a complementary and more effective financial instrument for India’s evolving climate risk landscape.

5. What are the benefits of weather derivatives?

Effective Hedging - Weather derivatives help businesses hedge against financial losses caused by adverse or unexpected weather conditions (e.g., drought, excess rainfall, extreme temperatures). This stabilizes earnings and reduces weather related risk exposure.

Improved Earnings and Cost Stability - By offsetting weather driven revenue shortfalls or cost overruns, weather derivatives reduce volatility in cash flows, supporting more predictable financial performance.

Better Budgeting and Forecasting - They enable firms to plan budgets more accurately by transferring weather uncertainty to the market, improving financial planning and liquidity management.

Enhanced Risk Management - Weather derivatives form part of an integrated risk management framework, helping organizations identify, quantify, and mitigate weather related operational and financial risks.

Price and Market Stability - By reducing uncertainty for weather dependent sectors (such as agriculture, energy, and utilities), they contribute to more stable commodity prices and supply planning.

Encouragement of Investment - Lower exposure to weather variability makes weather sensitive sectors more attractive to investors, supporting long term investment and growth.

Improved Decision Making and Resource Allocation - Market based pricing of weather risk provides valuable signals for operational decisions, such as crop selection, planting schedules, inventory planning, and capacity utilization.

Global Connect

6. Are weather derivatives widely used globally, and how does India's move compare?

Yes, Weather derivatives are already traded and widely used in several international markets, through both regulated exchanges and over-the-counter (OTC) markets and are commonly linked to parameters such as temperature, rainfall, and snowfall. They are most prominently traded on the Chicago Mercantile Exchange (CME Group) where they offers standardized futures and options contracts based mainly on temperature based indices (Heating Degree Days and Cooling Degree Days), for multiple cities across the U.S., Europe, Japan and parts of Asia.

India's introduction of such instruments marks an important step in aligning with global practices in weather risk management.

7. How does RAINMUMBAI compare to CME weather futures in the US?

The CME's HDD (Heating Degree Days) and CDD (Cooling Degree Days) futures — introduced in the US in 1997 — are based on temperature deviations in major American cities. RAINMUMBAI adapts this proven concept for India's monsoon-driven climate risk, using rainfall deviation (CDR) instead of temperature deviation, and targeting sectors where rainfall — not temperature — is the primary economic driver.

8. Why is the introduction of weather derivatives significant for India's financial ecosystem?

Weather derivatives provide a structured mechanism for businesses to manage financial risks arising from unpredictable weather conditions. As climate variability increases, such instruments can play a critical role in improving risk resilience, stabilising revenues, and enabling better financial planning across sectors.

#TradeRain on RAINMUMBAI

9. What exactly is RAINMUMBAI?

RAINMUMBAI (ticker: RAINMUMBAI) is India's first exchange-traded, SEBI-approved weather futures contract, listed on NCDEX. It is based on the Monsoon Cumulative Deviation Rainfall (CDR) — a daily measure of how much Mumbai's actual monsoon rainfall deviates from its 30-year historical average (Long Period Average or LPA of 2,206.7 mm). Contracts are available for each of the four monsoon months: June, July, August, and September.

10. Is RAINMUMBAI insurance?

No. RAINMUMBAI is fundamentally different from insurance. Insurance requires proof of loss (e.g., a government declaration of flood or drought) and covers physical damage. RAINMUMBAI settles purely on actual IMD rainfall data — no declaration of loss is required. It hedges volume, income, and operational risk, not physical damage. Think of it as a complement to, not a replacement for, insurance coverage.

11. How does RAINMUMBAI differ from existing crop insurance schemes like PMFBY or WBCIS?

PMFBY (Pradhan Mantri Fasal Bima Yojana) and WBCIS cover physical crop damage and require administrative loss assessment. They address damage, not income volatility.

RAINMUMBAI hedges against revenue and volume impact caused by rainfall deviation — even when there is no physical crop loss. It is also exchange-traded, transparent, instantly liquid, and requires no government intervention for settlement.

12. Where does the rainfall data come from? Can I trust it?

The settlement data is sourced exclusively from IMD's surface rainfall observations at two base stations — Santacruz and Colaba — both in Mumbai. These are manually recorded by IMD officials using calibrated, standardised instruments and have 97–100% data availability.

Surface observations are preferred over automated AWS data for their superior governance, historical continuity, and reduced equipment noise. It is the same data used for national weather advisories and is fully trustworthy.

13. Does RAINMUMBAI predict or guarantee specific rainfall outcomes?

Absolutely not. RAINMUMBAI does not predict weather. The product settles on actual IMD-recorded rainfall data. Its purpose is risk management — allowing participants to hedge their financial exposure to rainfall variability, not to speculate on weather forecasts. NCDEX does not promise any specific settlement outcome.

14. Who Can Use this product and for what purpose?

The rainfall based derivative can be used by a wide range of stakeholders whose revenues, costs, or operational outcomes are sensitive to rainfall variability.
It enables users across sectors such as agriculture, power, construction, mining, logistics, airline industry tourism, public administration etc. to hedge financial risks arising from deficient or excess rainfall in a transparent and market driven manner.

15. Can retail investors participate in RAINMUMBAI?

Yes. RAINMUMBAI is accessible to retail participants through registered commodity members on NCDEX, similar to how retail investors trade commodity futures. Corporate employees, stockbrokers, small business owners, and other individuals with weather-linked income or business exposure may participate. As always, participants should consult their financial advisor to assess whether the product suits their risk profile.

16. Why was Mumbai chosen as the pilot city?

Mumbai was selected based on four key criteria:

I. Strong data backbone — IMD's Santacruz and Colaba stations offer 97–100% data availability;
II. High value at risk — Mumbai is India's financial and commercial HQ, home to industries with significant weather-linked P&L exposure;
III. Communication advantage — Mumbai serves as a natural financial benchmark, maximising market participation;

Methodology and Contract Details

17. What is the contract launch calendar for weather derivatives?

NCDEX will launch four futures contract under Mumbai Rainfall with expiry at the end each monsoon season month i.e. June, July, August and September.

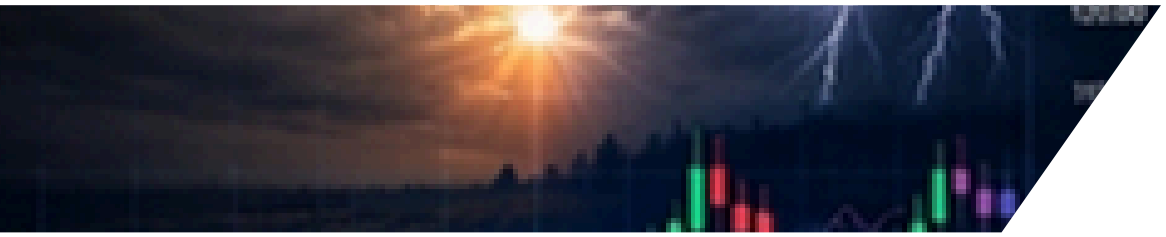
18. How does the CDR methodology work for spot calculation?

Through CDR (Cumulative Deviation Rainfall) methodology, daily spot is calculated starting at the Mumbai Monsoon Season LPA of 2,206.7 mm on Day Zero. Each day, IMD's actual rainfall reading is compared to the historical daily LPA for that date. The difference (deviation) is added to or subtracted from the previous day spot value. If Mumbai receives more rain than normal, the spot rises; if less, it falls. The spot is updated daily once

19. What are the contract specifications of the Mumbai Rain contract?

- Base price for the contract
- The base price of the contract is Rs. 2206.7, which is derived from Seasonal LPA value
- Quotation, Lot Size & Tick Value
- Quotation/Base Value – mm of rainfall (Since rainfall measured in mm)
- Unit of trading – 1 Lot
- Multiplier – Rs. 50 per mm
- Tentative contract value – Rs. 110333 (Base Price*Multiplier - Rs. 2206.7*50 = 110333)
- Tick size – 1 mm
- Tick Value – Rs. 50 (1*50)
- Final Settlement Price (FSP)
  FSP is underlying spot value arrived at the expiry day of the contract
- Trading Schedule

Parameter	Details
Last Trading Day	Business day immediately preceding the last calendar day of the contract expiry month.
Contract Expiry day	Calendar Day following the last trading day



Example of last trading and expiry under different scenarios

	30-Sep	29-Sep	28-Sep	27-Sep	Last Trading Day	Due Day / Expiry Day
Case 1	Holiday	Trading Day	Trading Day	Trading Day	29-Sep	30-Sep
Case 2	Trading Day	Holiday	Trading Day	Trading Day	28-Sep	29-Sep
Case 3	Trading Day	Trading Day	Holiday	Trading Day	29-Sep	30-Sep
Case 4	Holiday	Holiday	Trading Day	Trading Day	28-Sep	29-Sep
Case 5	Trading Day	Holiday	Holiday	Trading Day	27-Sep	28-Sep
Case 6	Trading Day	Trading Day	Holiday	Holiday	29-Sep	30-Sep
Case 7	Holiday	Holiday	Holiday	Trading Day	27-Sep	28-Sep

20. What is the lot size and how are profits/losses calculated?

The lot size is 1 Lot and the multiplier is Rs. 50 per millimetre (mm) of rainfall deviation. Hence, Each 1 mm movement in the spot equals Rs. 50 of profit/loss per lot.

21. How is the contract settled?

RAINMUMBAI contracts are cash-settled. No physical delivery is involved. The Final Settlement Price (FSP) is the undelying spot value arrived on expiry day of the month.

22. What is the minimum initial margin requirement?

The minimum initial margin is 10% of the initial contract value.

23. What trading hours apply to RAINMUMBAI?

Trading is available Monday through Friday, from 10:00 AM to 11:30 PM / 11:55 PM IST (as notified by NCDEX from time to time). NCDEX reserves the right to vary trading hours with due notice.

24. What is the position limit for participants?

Member-wise position limit: 4,00,000 lots or 20% of the market-wide open interest, whichever is higher. Client-wise position limit: 40,000 lots or 5% of the market-wide open interest, whichever is higher.

25. What is Long Period Average (LPA) or Normal?

Long Period Average (LPA) refers to IMD's climatological normal computed over a 30 year reference period (currently 1991–2020). LPA is calculated separately for each station/location and also for each day which denotes the expected or climatologically normal rainfall for each calendar day at that location, expressed in millimeters.

For example, the LPA for 1 June at IMD Colaba is derived by averaging the rainfall recorded on 1 June for each year from 1991, 1992, … up to 2020. This approach ensures consistency in long term climate comparison.

26. What happens if rainfall exactly matches the Long Period Average (LPA)?

If actual rainfall matches the LPA exactly, the net deviation becomes zero. In such a scenario, the spot value remains unchanged from the previous day spot,

27. What is the delivery logic of the contract?

The contract is cash settled contract.

28. Where can I access RAINMUMBAI and get more information?

The following key information is available on www.ncdex.com.

National Commodity & Derivatives Exchange Limited (NCDEX)

Akruti Corporate Park, 1st Floor, LBS Road, Kanjurmarg (W.), Mumbai-400078.

E: Corpcomm@ncdex.com **W**: www.ncdex.com **T**: 1800-266-2339

Follow us on: