

10 extreme temp days this month, highest for Jan in 13 years

**Frigid Sunday,
City Stn Logs
Max Of 12.7°C**

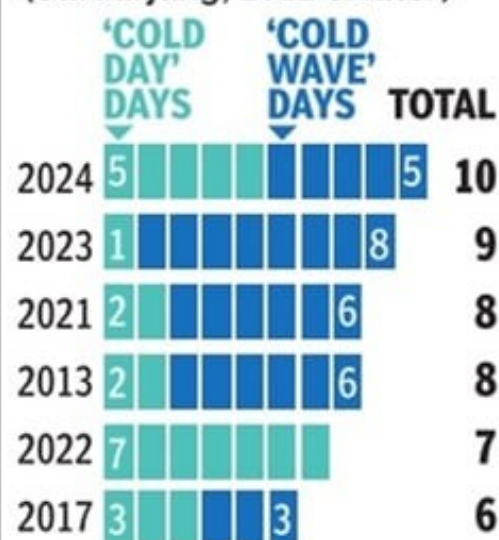
New Delhi: Not many Delhiites may care about the difference between 'cold day' and 'cold wave' conditions, but most would agree that this January has seen one of the longest spells of bitter cold in recent years. Indeed, temperature data bears this out.

With maximum temperature dipping sharply again on a frosty and sunless Sunday, Delhi recorded its fifth 'cold day' of the month. There have also been five 'cold wave' days this Jan, taking the number of days of extreme temperatures to 10 — the highest for Jan in readily available records going back to 2012.

'Cold day' refers to very

5TH 'COLD DAY'

Highest no. of 'cold day' & 'cold wave' days in Jan
(Safdarjung, 2012 & later)



low day temperatures, mostly due to daylong fog and chilly winds — as seen on Sunday — whereas 'cold wave' happens when night temperatures fall way below normal (4 degrees C or lower for Jan). TNN

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I/160427/2024

The Times of India - 22- January-2024

Don't expect immediate respite from fog

TIMES NEWS NETWORK

New Delhi: Safdarjung, the city's base weather station, recorded a maximum temperature of 15.8 degrees Celsius on Sunday, five notches below normal, against 18.5 degrees Celsius logged a day earlier. At 12.7 degrees C, Jafarpur recorded the lowest maximum temperature in the city.

While the city has seen colder days earlier this month, with the lowest maximum at Safdarjung falling to 12.5 degrees, Sunday was unusually cold because the minimum temperature was pretty low as well — 4.6 degrees C, three notches below normal, against 8.5 degrees recorded on Saturday.

While, neither day or night temperature has fallen to record lows this month, the large number of days of either very low night or day temperature has made the winter of this Jan long and bitter so far.

And, it's hardly over yet. IMD has issued an orange alert for 'cold day' conditions and dense fog on Monday and Tuesday.

"A layer of fog several hundred metres above the surface persisted through Sunday, blocking the sun



COLD TRUTHS THIS JAN

and causing cooling. Similar conditions are likely at some places on Monday. Dense fog situation too will continue," said an official at IMD.

Safdarjung witnessed its first cold day on January 4, when the maximum temperature dipped to 12.5 degrees. Though the base station has seen five

'cold day' days, isolated parts of the city have seen cold day conditions for seven days. Five consecutive cold waves were recorded from January 12 to 16 with the minimum temperature staying below 4 degrees Celsius.

"Apart from cold waves and cold day spells, Delhi saw dense fog on a

majority of the days in January so far," said a met official.

Explaining why extremely cold conditions have persisted for so long, Kuldeep Srivastava, scientist and head of IMD's Regional Weather Forecasting Centre, said, "No active western disturbance has impacted the plains in this January till now. Usually two-three active western disturbances hit the plains, including Delhi, during the month. A western disturbance would have caused rain and cloudiness, and regulated the temperatures, with moderate weather breaking spells of very cold conditions."

Meanwhile, city also saw dense fog condition — visibility below 50 metres — engulfing the areas around IGI airport thus impacting flight operation.

By contrast to harsh conditions in Jan, this Dec was the warmest in six years with a mean maximum temperature of 24 degrees C and an average minimum temperature of 8.6 degree C. Dec 2023 ended without recording any cold day or cold wave day.

Meanwhile, the air quality continues to remain very poor. The air quality index (AQI), on a scale of 0 to 500, was 349 against 329 a day earlier.

I/160427/2024

The Tribune - 22- January-2024

Multi-pronged strategy needed to conserve groundwater



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ALTHOUGH India accounts for about 17.5 per cent of the global population, only 4 per cent of the world's water resources are available in the country. Human-induced climate change is creating water-stressed conditions in many regions of India. There is a declining availability of fresh water amid increasing demand. Out of India's 766 districts, 256 are water-stressed.

According to the hydrological cycle, 1,399 billion cubic metres (bcm) of water resources are annually generated in India. Of this, the water that can be beneficially utilised is 1,126 bcm; 436 bcm comes from groundwater contribution and the remaining from surface water contribution. The first census report (2023) of water bodies revealed that out of 34.34 lakh of them, 72 per cent have a spread area of less than 5 hectares. About 1.6 per cent of the water bodies are encroached upon, primarily in rural areas.

A NITI Aayog report (2019) indicates that by 2030, India's water demand will be

twice the available supply. Groundwater meets about 62 per cent of the requirement in the case of irrigation, 85 per cent for rural water supply needs and 50 per cent for urban water supply. While groundwater is a replenishable resource, its availability varies as per the season and the region.

In 2023, the Central Ground Water Board (CGWB) assessed 6,553 monitoring wells and estimated the total annual groundwater recharge at 449 bcm, an increase from the 2022 estimate of 437 bcm. The annual extractable groundwater (considering allocation for natural discharge) was estimated at 407 bcm, higher than the 2022 estimate of 398 bcm. The annual groundwater extraction was 241 bcm, surpassing the 2022 estimate of 239 bcm. Overall, the average groundwater extraction in 2023 was 59.26 per cent, slightly lower than the 2022 estimate of 60.08 per cent.

In 2023, the states where the groundwater extraction was at least 50 per cent higher than the annual recharge included Delhi (90.13 per cent), Gujarat (51.68 per cent), Haryana (133.74 per cent) and Punjab (183.76 per cent). Last year, there was a notable imbalance between groundwater extraction and recharge in states like Haryana, Punjab and Rajasthan. Moreover, when compared to 2022, there was an increase of more than 1



SCARCITY: Metered power supply and pricing can help curb overextraction of groundwater.

bcm in 'groundwater recharge for states such as Gujarat, Karnataka, Telangana and West Bengal.

Out of 6,553 assessment units, 706 (11.23 per cent) are categorised as 'overexploited', which is a decrease compared to the 2022 figure of 14 per cent and the 2017 figure of 17 per cent. The 'overexploited' units are concentrated in Punjab, Haryana, Delhi and western UP where there have been indiscriminate withdrawals of groundwater; western India (Rajasthan and Gujarat), where groundwater recharge is limited due to the arid climate; and southern states (Karnataka, Tamil Nadu, Telangana, Andhra Pradesh), where the groundwater availability is low due to the inherent characteristics of crystalline aquifers. In some areas, groundwater augmentation and conservation measures have

improved due to government and private initiatives.

The annual increase in groundwater recharge in 2023 can be attributed to good rainfall, government interventions in conservation activities, the revival and rejuvenation of tanks and water bodies resulting in increased recharge from surface water resources, and surface water irrigation in various states. The decrease in groundwater recharge in Delhi and Punjab can be attributed to factors such as reduced recharge from rainfall, lining of unlined canals, decreased recharge from ponds and tanks and reduced extraction, along with a decrease in the irrigation draft.

Sustainable groundwater management involves managing both supply and demand. On the supply side, aquifer recharge of groundwater occurs through rivers, rainfall percolation and natu-

ral water bodies. However, the speed of groundwater recharge is slow from the last two sources; worse, rivers are shrinking due to mismanagement. Major rivers like Ganga, Narmada and Cauvery have experienced contraction, leading to a reduction in the recharge potential.

On the demand side, addressing groundwater management issues such as crop diversification, enhancing water use efficiency (WUE) and adopting better agronomic practices is crucial. A coordinated approach is necessary as different ministries oversee these aspects. Metered electricity supply and pricing can help reduce the demand and overextraction of groundwater.

Increasing WUE is a must for reducing groundwater demand for irrigation. Flood irrigation has a WUE of around 40 per cent, while micro-irrigation systems offer a higher WUE of about 80-95 per cent. Despite the potential for about 70 million hectares (mha) for micro-irrigation in India, only around 9 mha had been covered by 2010.

The institutional framework, such as the India Easements Act, 1882, poses a challenge to groundwater control. Section 7(g) of the Act grants the landowner full control over the water beneath his/her property, often resulting in overexploitation. Legislative amendments are required to address such

loopholes. The Supreme Court's recommendation to designate groundwater as a common pool resource under the 'Public Trust Doctrine', with states as trustees, should be promptly adopted.

The Centre has formulated a Model Ground Water Bill aimed at regulating and developing groundwater. However, several states and UTs have not adopted it, and they should be provided incentives to do so.

The 1992 amendment to the Constitution introduced devolution of functions from the state to panchayats, encompassing minor irrigation, water management, watershed development, drinking water and the upkeep of community assets. However, in many states, panchayats have little role in groundwater management. Relevant state departments often retain control over groundwater irrigation management, citing a lack of technical knowledge and expertise among panchayats. This must be reconsidered, emphasising increased participation of the people in groundwater management. Panchayats should be given incentives for groundwater conservation and penalties should be imposed for failing to meet the targets. Water regulators may assume an overseeing role in ensuring sustainable groundwater management in the states and UTs.

Increasing water use efficiency is a must for reducing groundwater demand for irrigation.