

Hindustan Times- 13- April-2023

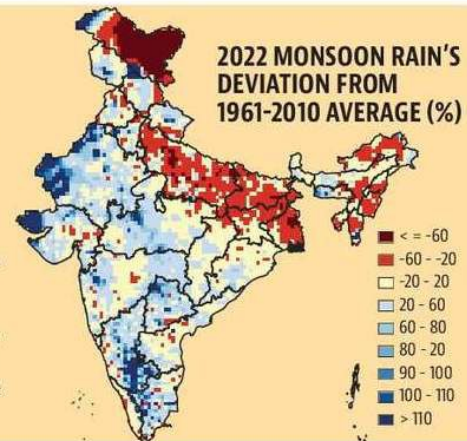
What the debate over a 'normal' monsoon omits

By Abhishek Jha

Private weather forecaster Skymet predicted a "below normal" monsoon for India on April 10. A day later, the India Meteorological Department (IMD), India's official weather agency, predicted a "normal" monsoon. IMD defines a "normal" monsoon on the basis of rainfall volume's departure from the long period average (LPA). Before 2022, LPA was the average rain in the 1961-2010 period (now it is the 1971-2020 period) and the monsoon was termed normal if it was within 10% of the LPA (now this number is 4%). IMD's forecast on April 11 says that monsoon rain this year is likely to be 96% (with an error margin of $\pm 5\%$) of LPA. It is still early days for these forecasts to be tested, as India's rainy season only begins on June 1. However, an HT analysis of IMD data shows that obsessing too much about the quantum of overall rainfall may miss the point about other features of the monsoon, especially its impact on agriculture, which requires timely and proportionate rain throughout the season.

1 A national normal monsoon is consistent with abnormal sub-national rains...

Last year's monsoon saw India receive 106% rain of LPA, compared to the 99% forecast made by IMD in April. In the same forecast, IMD saw "above normal" rain as the predominant possibility in the Gangetic plains. However, the region ran so dry last year that it could not make up the deficit despite heavy rain towards the end of the season. The four states of the Gangetic plains – Uttar Pradesh, Bihar, Jharkhand, and West Bengal – lagged the rest of the country in monsoon rain the most since 1901 last year. To put things in perspective, these are also some of the most important states for rice cultivation in India.

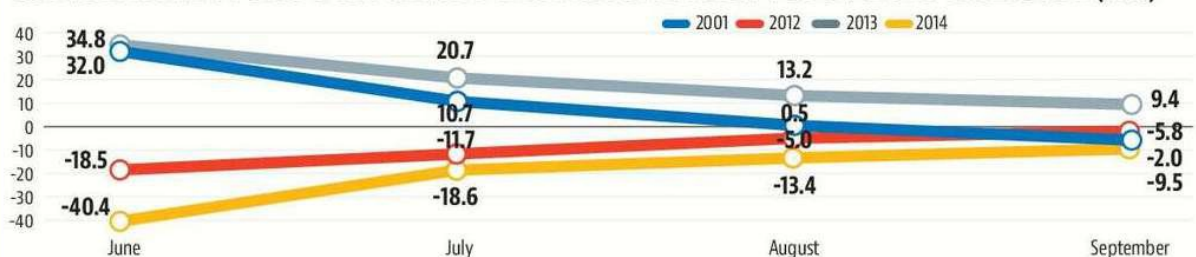


2 ...As is a normal monsoon rainfall with patches of deficient and surplus rains

If it does not rain at all in June and rains a lot in September, one can still have a normal monsoon in terms of total rainfall. While the temporal spread of the rain does not matter as far as recharging of groundwater and reservoirs is concerned, it is critical for various phases in the cropping season. For example, delayed rains can derail

sowing of paddy saplings and seriously impact overall production. While wild monthly deviations within the monsoon season are rare, we have seen four of them since the 2000s when overall rainfall was more than 10% away from the 1961-2010 average for the first half of the season, but came within the 10% range by the end of the season.

CUMULATIVE MONSOON RAIN'S DEPARTURE FROM 1961-2010 AVERAGE (in %)



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3 Even a normal month is no guarantee of normal days

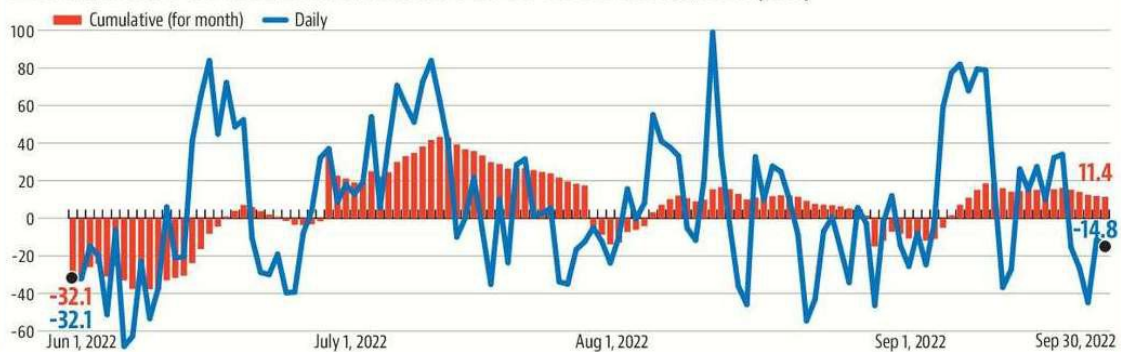
To be sure, despite the monthly deficits and surpluses, rain roughly follows monthly patterns during most monsoon seasons. Within a month, however, daily rain is more erratic.

This means that monthly totals can be made up of extremely wet and extremely dry patches. For example, the departure for the cumulative rain in June and September last year took very sharp turns after a few days of surplus rain that wiped out the deficit from

a preceding dry patch. Similarly, the distribution of individual days in June looked very different from the distribution in July, August, and September.

This, when all the months were separated by about six percentage points in terms of departure from LPA: -1.5% in June, 5.2% in August, 11.4% in September, and 17.4% in July. As is obvious, such deviations are associated with a high risk of flooding.

DEPARTURE OF 2022 RAIN FROM 1961-2010 AVERAGE (in %)



DISTRIBUTION OF DAYS IN 2022 BY DEPARTURE FROM 1961-2010 AVERAGE (in %)

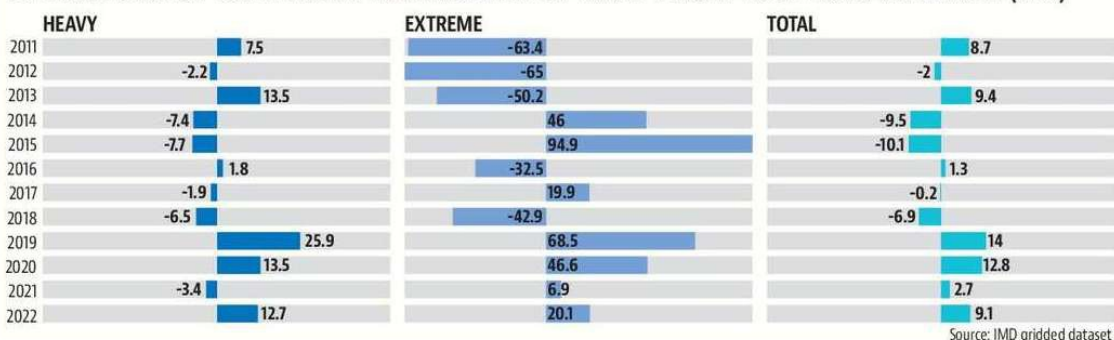


4 Both these variations can be captured in intensity of rain

As shown above, monsoon rain can be far from normal on a particular day or a particular place although the seasonal total for India is normal. Both these variations are captured by intensity of rain. As the term suggests, the intensity of rain is higher if it falls either faster or in a smaller area. IMD has defined thresholds for intensity of rain based on the amount of rain that falls in 24 hours at a station. For example, rain between 35.5mm and 244.5mm in a day is classified as heavy intensity rain; and that of more than 244.5mm as extreme intensity rain.

As expected from the discussion above, there can be surplus extreme rain even in years with deficient monsoon rain and there can be a big deficit in extreme rain even in years with normal overall monsoon. Recent trends suggest that the share of heavy and extreme intensity rain in total rain has been increasing in India, and is perhaps a symptom of the deepening climate crisis. This also means that projected or actual headline rainfall numbers will matter little as far as the relation between rains and agriculture or natural disasters is concerned.

DEPARTURE OF DIFFERENT INTENSITIES OF RAIN FROM 1961-2010 AVERAGE (in %)



Telangana Today- 13- April-2023

‘Kaleshwaram triggers increase in cultivation area’

STATE BUREAU

Rajanna-Sircilla

Municipal Administration and Urban Development Minister KT Rama Rao said the Kaleshwaram Lift Irrigation Project had triggered a major growth in cultivation area across the State.

However, though lakhs of acres had now come under cultivation after construction of the irrigation project, Opposition parties were unable to see this and were still criticizing the State government saying that not a single acre of cultivation area had increased after the Kaleshwaram project.

Stating that Chief Minister K Chandrashekhar Rao was known as Rythu Bandhu (farmer friendly man), Rama Rao said K stands for Kalwalu (canals), C for Cheruvulu (tanks) and R for Reservoirs in KCR. The Chief Minister had made agriculture more profitable by initiating a number of schemes aimed at welfare of the farming community. Speaking after inaugurat-

MA&UD Minister says KCR stands for- Kalwalu (canals), C for Cheruvulu (tanks) and R for Reservoirs

ing the Agriculture College building at Jillella of Thangallapalli along with Assembly Speaker Pocharam Srinivas Reddy and Agriculture Minister S Niranjana Reddy, Rama Rao said they had an aerial view of the Konda Pochamma Sagar, Mallana Sagar, Rangamayaka Sagar, Annapurna Reservoir and the Mid Manair Reservoir while flying to Sircilla on a helicopter this morning. None of these reservoirs existed in the erstwhile Andhra Pradesh, he said, adding that these projects had played a crucial role in the expansion of cultivation area in the district.

On the agriculture college, the Minister said there was a possibility for students to become the top most agronomists in the

country if facilities provided in the college were utilized properly. Students should reach a position to create jobs by emerging as entrepreneurs and industrialists, he said and wanted the Professor Jayashankar Telangana State Agriculture University to upgrade the agriculture college as PG college.

Speaker Srinivas Reddy praised the developmental activities being done in Sircilla by the IT Minister and said Rama Rao had ensured development of the district and in the State in the last few years than what was done in the last 47 years. Rajanna-Sircilla district stood in first place in the State with the major improvement in the groundwater table. The cultivation area in the State has increased 2.30 lakh acres from 1.80 lakh with the construction of irrigation projects.

Niranjana Reddy said there was a shortage of agriculture colleges in the country. Out of 700 agricultural colleges across the country, only 73 were in the government sector.

Deccan Chronicle- 13- April-2023

Monsoon: Be ready for worst

Monsoon forecasting is not mere crystal ball gazing even if hindsight deliverers might uphold the belief that any guess is as good as the other. This year's conflicting forecasts from the IMD (96 per cent of normal), with its record of optimism, and Skymet (94 per cent), a private weather channel with a tendency not to be shackled by a bureaucratic need for sharing only good news, is a case for worry, especially since it is a year of the El Nino phenomenon of unusual warming of surface waters in the Eastern Pacific Ocean.

The greatest unpredictability that spoils the forecasters' measured and well meaning study of several parameters is that of extreme weather, instances of this new pattern markedly rising due to climate change caused by global warming. Unseasonal rainfall, extended drought and extreme weather events like excessive rainfall in short periods of time affecting various parts of grain-producing regions have made agriculture far more hazardous. Given that both forecasts suggest the deficiency from normal in rainfall may affect the food grain production bowls of the country in the north more, contingency plans in terms of crisis management through alternative irrigation methods are called for to tackle what could be an abnormal monsoon or even extensive drought in certain parts following an already established pattern of rising heat ahead of the onset of the southwest monsoon. This was particularly seen in the summer of 2022 when wheat procurement may have fallen in Punjab. It cannot be an IPL kind of matchup between IMD and Skymet to see who emerges the victor. Also, weather patterns affecting different parts of the country differently have shown that it is no more the amount of seasonal rainfall that dictates how good food grain production is as much as the change in climate patterns that has become inevitable.

India's monsoon is integral to its food production and food security, which is why the pre-monsoon forecasts loom with such importance. Whatever be the improvements in meteorological forecasting, the weather man's lot is not a happy one. Beyond hoping that the monsoon will be normal again this year, it would be better to be prepared in case it fails and that could be the real challenge as nature has been bountiful in the last few years.

Deccan Herald- 13- April-2023

Act now to avoid a water crisis

Warnings about water are getting more and more grim every passing year. While the situation is bad the world over, it is worse in India. The government told parliament last week that the per capita availability of water in the country is expected to decline from 1,486 cubic metres in 2021 to 1,367 cubic metres by 2031. It was about 5,000 cubic metres in 1950. The steady fall in the availability of water has many reasons. According to the government, the average annual water availability is dependent upon hydro-meteorological and geological factors, but water availability per person is dependent on population. But population is only one factor and there are other factors like overexploitation of water resources, inadequacy of storage capacity and failure to conserve available water. Water contamination is also widespread in the country.

The UN World Water Development Report 2023, released recently, also presents a dire picture about the availability of water. It says India, among all countries, will be the most affected by water scarcity by 2050. With 18% of the world's population, the country has only 4% of its water resources. The resources are also poorly managed. There is an impression that India has a lot of water resources, and so the need to avoid wastage and to conserve water does not get enough attention. The country receives 80% of its annual rainfall in a span of four months and so efficient usage and conservation should get topmost attention. Groundwater levels are low and cannot be sustained for long because of increasing use. India stands first among all countries in extraction of groundwater. About 90% of the extracted water is used for irrigation. There is the need to shift away from crops like paddy and sugarcane, which need more water. Suitable policies have to be framed for this.

It is important to avoid wastage and to conserve water. Most of the water that the country receives runs off into the sea. Mini- and micro- water conservation schemes need to be formulated and implemented on a large scale. Rainwater harvesting is still in early stages though there is much talk about it. It should become a people's movement. More research is needed and better technologies that suit India's conditions and would meet its needs have to be developed. According to the Central Water Commission (CWC), India's present storage capacity is about 325 billion cubic metres (BCM) while the average annual rainfall is about 3,880 BCM. There is scope to significantly increase the storage capacity. Water management needs both short-term and long-term plans. The right to water is part of the right to life, and that cannot be denied to people.

**The UN water
report paints
a stark
picture for
India by 2050**

The Economics Times- 13- April-2023

Niti Panel Likely to Propose Incentives for Efficient Use of Water

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New Delhi: India is eyeing incentives for industry and agriculture for efficient use of water as part of a long-term roadmap to ensure water security for the nation.

A steering committee, led by Niti Aayog member Ramesh Chand, is likely to recommend a clear methodology to define and assess water neutrality and water positivity required across sectors to ensure sustainable use of water and propose incentives based on the assessment, a senior government official told ET.

The committee is also expected to reassess the water resource scenario of India and make future projections of water requirements to arrive at benchmarks for water neutrality.

Incentives could include rebates to individuals and industry to use appliances with water-efficient models and supplying free retrofit kits for households and businesses to avoid wastage, among others.

The government is of the view that water conservation, efficiency improvement, wastewater treatment, reuse and recycling of water are paramount in ensuring water security. But this is possible only with a defined methodology on water neutrality, the official said.

As per a NITI Aayog report of 2018, India's water demand is projected to be twice the available supply by 2030. Presently, 600 million people in India face high to extreme water stress in the country with three-fourth of the households devoid of drinking water at their premises, it said.

Millennium Post- 13- April-2023

El Nino after La Nina year tends to result in significant rainfall deficit, say experts

IMD on Tuesday predicted normal rainfall in the country during the southwest monsoon season

OUR CORRESPONDENT

NEW DELHI: With the India Meteorological Department (IMD) predicting a normal monsoon this year despite El Nino concerns, experts say an El Nino that follows a La Nina year tends to result in a significant rainfall deficit.

The evolving El Nino conditions this year follow three consecutive La Nina years.

La Nina, which is the opposite of El Nino, typically brings good rainfall during the monsoon season.

The IMD on Tuesday predicted normal rainfall (96 per cent of the long-period average of 87 cm) in the country during the southwest monsoon season which be of great relief for the agriculture sector.

The IMD forecast came just



a day after private agency Sky-met Weather predicted "below-normal" monsoon rains (94 per cent of the long-period average) owing to the evolving El Nino conditions, which are generally associated with the weakening of monsoon winds and dry weather in India.

Raghu Murtugudde, visiting professor, Earth System Scientist at IIT Bombay and Emeritus Professor at University of Maryland, said though

According to the IMD, El Nino conditions are expected to develop around July, and their impact may be felt in the second half of the monsoon season

only 60 per cent of El Nino years have recorded 'below normal' rainfall from in the June-September period, "analysis shows that an El Nino that follows a La Nina year tends to be the worst case scenario in terms of monsoon deficits".

The scientist, however, said that despite three consecutive years of La Nina, the Eurasian precipitation has been slightly below normal which would favour a stronger monsoon and

may offset the El Nino impact.

Mrutyunjay Mohapatra, Director General of Meteorology, IMD, had on Tuesday said that positive India Ocean Dipole (IOD) conditions are expected during the southwest monsoon season and the snow cover over the northern hemisphere and Eurasia has also been below normal from December 2022 to March 2023. Both these factors are considered favorable for the southwest monsoon.

According to the IMD, El Nino conditions are expected to develop around July, and their impact may be felt in the second half of the monsoon season.

The IOD is defined by the difference in the sea surface temperatures between the western parts of the Indian

Ocean near Africa and the eastern parts of the ocean near Indonesia.

"If at all there is any adverse impact due to the evolving El Nino conditions during the monsoon season, it is likely to be countered by the favourable impact of positive IOD and the lower snow cover over the northern hemisphere," the IMD chief had said.

"It is likely that the monsoon itself impacts the IOD. If an IOD does occur following a normal monsoon, then the chicken-and-egg narrative will play out again. But remembering that the monsoon is a monstrous heat source and the IOD mostly occurs after the monsoon has nearly ended, we must focus on late season extremes in dry and wet spells," he said.

Punjab Kesri- 13- April-2023

दिल्ली में पानी का संकट: 10 मई को होगी अगली सुनवाई

हाईकोर्ट ने डीजेबी की याचिका पर हरियाणा सरकार से मांगा जवाब

नई दिल्ली, (पंजाब केसरी) : दिल्ली हाईकोर्ट ने हरियाणा सरकार से दिल्ली जल बोर्ड (डीजेबी) की उस याचिका पर जवाब मांगा जिसमें गर्मी को देखते हुए पहले के आदेश के अनुसार राष्ट्रीय राजधानी में यमुना के पानी की अबाध आपूर्ति सुनिश्चित करने की मांग की गई थी।

चीफ जस्टिस सतीश चंद्र शर्मा की अध्यक्षता वाली बेंच को सूचित किया गया कि मई 2019 में हाईकोर्ट द्वारा पारित एक आदेश के अनुसार नदी से अवैध बांधों या अवरोधों को हटाने का निर्देश दिया गया था, लेकिन पिछले महीने की छवियों में स्पष्ट रूप से जल प्रवाह को अवरुद्ध करने वाली ऐसी संरचनाएं दिखाई देती हैं। सुनवाई के दौरान डीजेबी द्वारा बताया गया कि हरियाणा से आ रहे पानी में भारी मात्रा में आज के समय में अमोनिकल-नाइट्रोजन, कोलिफॉर्म मिला हुआ होता है। वही इस बात पर भी जोर दिया गया है कि हरियाणा द्वारा अभी तक दिल्ली को

उसके हक का पानी पूरी तरह नहीं दिया जाता है। दिल्ली के लिए पर्याप्त पानी की आपूर्ति की मांग करते हुए वकील एस बी त्रिपाठी द्वारा 2013 की जनहित याचिका में बोर्ड द्वारा

आवेदन दायर किया गया था। बोर्ड की ओर से पेश वरिष्ठ वकील अभिषेक मनु सिंघवी ने कहा कि वर्तमान आवेदन जल आवंटन में किसी भी वृद्धि या किसी अतिरिक्त पानी के लिए नहीं था, बल्कि

केवल अवरोधों को हटाने पर मौजूदा न्यायिक निर्देशों के कार्यान्वयन की मांग की थी। सुनवाई के दौरान बेंच ने दिल्ली जल बोर्ड से पूछा कि क्या इस मामले की अंतरराज्यीय जल विवाद होने के कारण सुप्रीम कोर्ट को सुनवाई करनी चाहिए। हालांकि वरिष्ठ वकील ने कहा कि मौजूदा मामला केवल एक पुलिसिंग मामला था और इसमें किसी भी अंतर-राज्यीय जल विवाद के फैसले की आवश्यकता नहीं थी। सिंघवी ने कहा कि मौजूदा आदेश है। मैं आवंटन बढ़ाने या किसी अतिरिक्त पानी की मांग नहीं कर रहा हूं। यह केवल उस (पहले) आदेश

का पालन है, जो हमारे सिर पर गर्मी को देखते हुए किया गया था। बेंच ने हरियाणा सरकार से याचिका पर जवाब दाखिल करने का निर्देश देते हुए सुनवाई 10 मई तक के लिए स्थगित कर दी।

बेंच ने हरियाणा सरकार से बोर्ड द्वारा एक अन्य आवेदन का जवाब देने के लिए भी कहा, जिसमें बेंच द्वारा नियुक्त समिति को हरियाणा से दिल्ली तक यमुना के पानी की गुणवत्ता और प्रवाह के संबंध में एक नई रिपोर्ट दाखिल करने का निर्देश देने की मांग की गई थी। हरियाणा सरकार के वकील ने कहा कि हाईकोर्ट के पास मामले की सुनवाई करने का कोई अधिकार क्षेत्र नहीं है और राज्य मामले में पारित निर्देशों का पालन कर रहा है। साथ ही उन्होंने कहा कि हर साल एक अंतर्वर्ती आवेदन दायर किया जाता है लेकिन मुख्य याचिका पर सुनवाई नहीं की जाती है। 2019 में हरियाणा सरकार ने इस मामले में पेश किया था कि हाईकोर्ट के पास यमुना नदी के पानी के बंटवारे को लेकर दिल्ली के साथ उसके विवाद पर निर्णय लेने का कोई अधिकार क्षेत्र नहीं था और ऊपरी नदी यमुना बोर्ड फैसला करने के लिए उपयुक्त निकाय था।



Hindustan- 13- April-2023

योजना पानी को साफ करने के लिए 11 स्थानों पर जल शोधन संयंत्र भी लगाए जाएंगे, बवाना में ट्यूबवेल लगाने का काम अंतिम चरण में

गर्मी में जल संकट खत्म करने को 587 ट्यूबवेल लगेंगे

नई दिल्ली, प्रमुख संवाददाता। गर्मी में पानी की किल्लत दूर करने के लिए दिल्ली सरकार अलग-अलग इलाकों में 587 नए ट्यूबवेल लगाएगी। ट्यूबवेल के पानी को शुद्ध करने के लिए 11 अलग-अलग जगहों पर जल शोधन संयंत्र भी लगाए जाएंगे।

कई जगहों पर अभी अड़चन: नजफगढ़, बवाना, निलोटी, रोहिणी, ओखला, द्वारका के अलावा यमुना के किनारे भी ट्यूबवेल लगाने की तैयारी हो चुकी है। बारापुला क्लोवर लीव नोएडा मोड पर सात और अक्षरधाम पर आठ ट्यूबवेल लगाने का काम पूरा हो गया है। वहीं, बवाना

में 15 ट्यूबवेल लगाने का काम अंतिम चरण में है। बाकी जगहों पर कहीं जमीन को लेकर अड़चने हैं तो कहीं पर निविदा की प्रक्रिया चल रही है। सरकार का कहना है जल्द ही काम शुरू हो जाएगा।

पानी की चोरी रोकने के लिए फ्लो मीटर लगेंगे: दिल्ली में जल बोर्ड के 26 लाख से अधिक उपभोक्ता हैं। इनमें 58 फीसदी नॉन रेवन्यू हैं। कई जगहों पर पानी लीकेज की दिक्कत है तो कई जगहों पर पानी की चोरी की जा रही है। इसके लिए सरकार सभी लाइनों पर फ्लो मीटर लगाएगी।

भलस्वा में सबसे ज्यादा काम किया जाएगा

4919 ट्यूबवेल अभी दिल्ली में हैं

1250 एमजीडी पानी की जरूरत दिल्ली को है

943 एमजीडी पानी का उत्पादन दिल्ली में हो रहा है

90% पानी दूसरे राज्यों से मिल रहा है

