

The Times of India- 20- July-2023

**When The Flow At Hathnikund Barrage Crosses One Lakh Cusecs, Water Has To Be Released Into The Yamuna. TOI Tries To Understand Why It Was Headed Delhi's Way**

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**Hathnikund barrage, Yamunanagar (Haryana):** The beauty and ferocity of nature inspires awe at this spot, about 230 km from Delhi. It's here that a river subtly marks the boundaries of four states.

Muhammad Akhtar, a 61-year-old farmer, has come all the way from Jhalu village in UP's Shamli district, more than 100km away, on his bike with fellow farmer Idrees. They are not here on an excursion like the tourists that flock to this scenic place. They are nervous and apprehensive.

"The water levels began rising in our village last week. Water is being released into the canals again and it has flooded the entire area. We know the situation in Delhi is not good either but at least there are officials to take care of it since it's the national capital. No one is taking stock of the situation for us," says a worried Akhtar.

In distant Delhi, there is some relief. The water level at Hathnikund barrage began to decline on July 13 though it may not be apparent since its roar is loud enough to drown the honking of passing buses while the water falling off the barrage into the main river stream towards Delhi continues to weave a blanket of mist all over the area.

Many villagers like Akhtar and Idrees have descended from far-flung places to see the situation first-hand. "Do you think the water level has fallen? Will it rise again?" a farmer asks the locals who are selling snacks along the barrage. The farms of these men now lie submerged and have become unfit for paddy cultivation.

Bijender Singh, a farmer from Jodhpur village in Yamunanagar, says the river had spread over a very large area and inundated many farms. "The region is connected to small irrigation channels which get water either from the west or east Yamuna canal. At some places, the water spilled over and filled the farms. Many had already planted paddy which takes place in ankle-deep water," explains Singh. "However, from

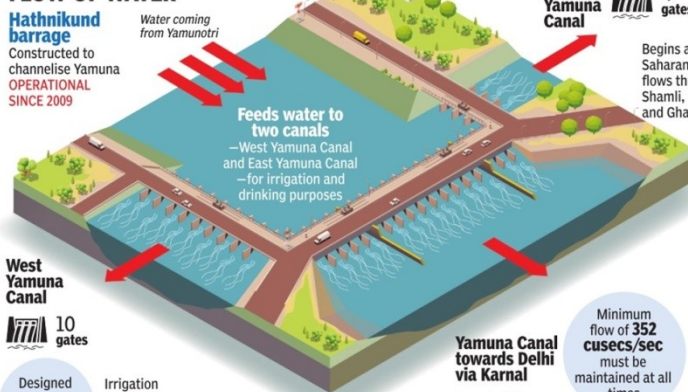


**Hathnikund Barrage**  
Situating in Yamunanagar district, under control of Haryana irrigation department

## IS THIS DELHI'S BARRAGE OF WOES? A REALITY CHECK

### TRACING THE FLOW OF WATER

**Hathnikund barrage**  
Constructed to channelise Yamuna  
**OPERATIONAL SINCE 2009**



Flows through Haryana, supplies drinking water to Delhi through one of the sub-canals of Munak head in Karnal



which are bound to release water in the Yamuna when flow exceeds 1 lakh cusecs/sec

When flow is over 1 lakh cusecs, gates of both East and West Yamuna Canal are closed to avoid siltation and blocking

Photos: Piyal Bhattacharjee  
Graphic: Sunil Singh

### CURRENT STATUS AND RECORDS

**50,000 cusecs/sec** water is being released in the Yamuna and in both the canals currently

Level had started to rise from July 9, dropped July 13 onwards

On July 11, the water level was at 336.35m



**On July 11, flow was 3,59,760 cusecs/sec**  
So, to avoid clogging and flooding, water was being released in the Yamuna and not in the canals

Historically, highest flow level at barrage was reached on August 18, 2019, with the level at 338.6m and flow at 8,28,072 cusecs/sec

vate the situation, the official said. "What happens if in such a scenario, we let the water go through the east Yamuna canal that goes to UP or the west Yamuna canal that feeds water to Delhi. The canals will get clogged and it would take us at least a week to clear them. So, for a week, there would be no drinking water supply to Delhi's reservoirs through Munak canal. How will a city like Delhi survive without water for over a week?"

An engineer from Delhi's irrigation department, speaking on the condition of anonymity, told TOI: "During flooding in a city, a mismanaged drain system fails as reverse flow starts. This is a major reason behind waterlogging even in urban areas that are not near the catchment zone."



**EAST YAMUNA CANAL**

According to Professor Shankar Shekhar, a geologist at DU who has conducted multiple studies on the Yamuna, Delhi can no longer compromise its floodplains.

"Once the situation improves, the administration has its task cut out. First, it must assess how Delhi was flooded while a large part of the area between Hathnikund and Wazirabad barrage stayed safe. There are massive unauthorised encroachments in Zone O. The administration must also look at why Delhi's drains were not managed properly," said Shekhar.

the second week of July, as the river spread over a large area outside its channel, many farms were filled with knee- and even waist-deep water. This has destroyed the entire crop."

On July 11, the barrage's flow had increased to over 3 lakh cusecs. However, officials from Haryana's irrigation department say the situation is very different now. It was 70,000 cusecs on Tuesday and further dropped to 50,000 cusecs on Wednesday. Describing the situation as "under control",

officials said they might now release water in the other two canals — east Yamuna canal that goes to UP and the west Yamuna canal that flows towards Haryana and finally supplies drinking water to Delhi through Munak.

However, monsoon is not over yet. The highest flow at the barrage was recorded in 2019, in the month of August, something that is worrying the farmers and officials equally.

Does Delhi have anything to worry about? The officials say

they are bound to follow the protocol put in place for the safety of a larger area. "We must first understand it's a barrage and not a dam, which means we cannot hold the water here. So, if the flow crosses 1 lakh cusecs, we must release the additional water into the Yamuna or else the barrage will break, leading to worse floods," said an official.

"Also, since the river comes from the mountains, it brings an excessive load of sediments, stones and other solid particles

during the rains. This is why when the flow is over 1 lakh cusecs, we don't release water into the other two canals since these would get clogged by the sediments. These canals are also joined by a few channels upstream which may lead to overspilling and cause more damage."

On July 9, a day before the flood situation began to worsen in Delhi, the water level at Hathnikund barrage crossed 2 lakh cusecs following which the au-

thorities stopped the flow to east and west Yamuna canals. On July 10, the Yamuna level in Delhi breached the 206m mark and evacuation from low-lying areas began. The following day, the Hathnikund level reached this season's peak at over 3.58 lakh cusecs. The additional water was released into the main Yamuna channel, triggering a series of events that submerged a large part of the national capital.

Stressing that releasing water into the canals would only aggra-



The Times of India- 20- July-2023

# Need for building dams on Swan, Siswan, Sarsa hits Punjab again

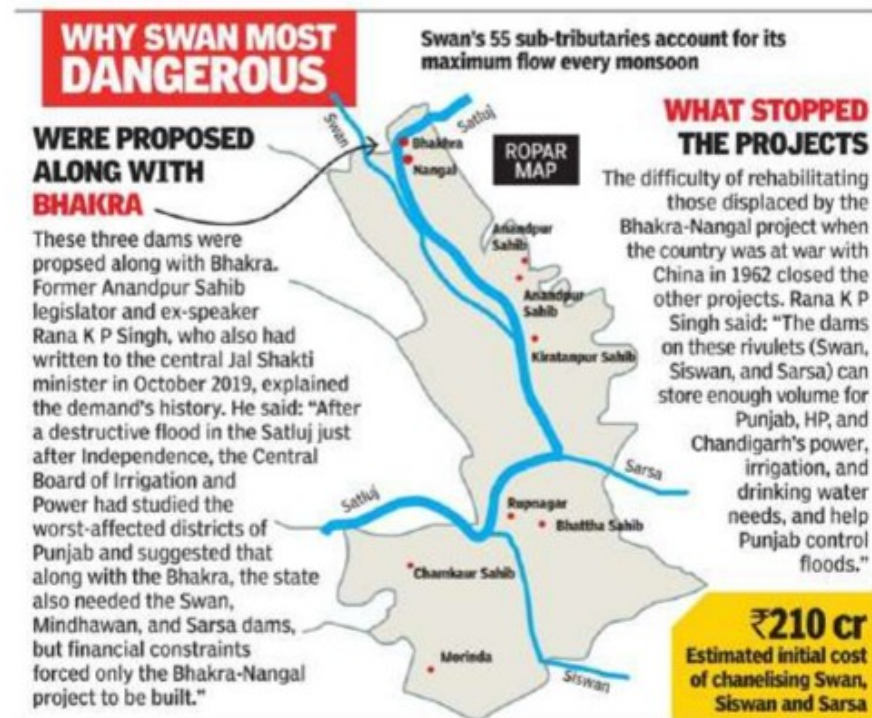
## 'Channelisation Could Have Saved Ropar'

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Patiala: Reminding Punjab of the need for dams on Swan, Siswan and Sarsa, yet another monsoon has swelled these seasonal rivulets and carried Swan's fury to the Satluj riverbanks in Ropar district.

Timely channelisation of their Punjab sections could have prevented this destruction. A senior irrigation officer said: "The Swan merges into the Satluj in Ropar. In 2017, the central government had recommended its channelisation to the Punjab government, to save the district from flooding. Under the Swan River Flood Management and Integrated Land Development Project, the state was asked to get Pune's Central Water and Power Research Station (CWPRS) to prepare a mathematical model."

In September 2019, Anandpur Sahib MP Manish Tewari requested the Centre for these three dams as the only way to regulate their flow when their catchments in Himachal Pradesh received heavy rain. Every year,



these rivulets kill people, displace families and destroy crops. In his letter to the Union jal shakti minister, the MP had suggested some upstream sites in the hill state that could be used for harnessing the excess waters.

Three months later, Tewari received a reply that these seasonal torrents swelled

with the human-caused drainage congestion and degradation of the catchment areas, while the Swan's 55 sub-tributaries also accounted for its maximum flow every monsoon. To prevent floods and erosion, the ministry had made Himachal engage the CWPRS for a four-phase modelling study till 2020, while

the jal shakti ministry's advisory committee had, in September 2016, recommended a similar study of the Punjab portion for Rs 210.23 crore.

In 2017, Punjab was sent a reminder for this study for enabling the ministry's investment clearance committee to do a project review. However, the state did not re-

spond. By then, Punjab had built a dam on the Siswan, while Himachal wasn't planning any on the other two rivers, finding the projects unfeasible.

In December 2021, the MP wrote to the Centre again, seeking a committee to talk with the two states. He told TOI: "I had also raised this issue in the Lok Sabha and with the Punjab government, but if the state doesn't send a proposal, then how will anything move and the money come. The Centre needs a DPR (detailed project report)". Asked why the previous government had failed to send it, he said: "Captain Amarinder Singh was fighting the Covid-19 pandemic, but let the current government do it (send the DPR)."

Punjab's chief engineer drainage H S Mehndiratta said he will have to check if the mathematical study was ever done.

Asked about it, Ropar executive engineer Harshant Verma said: "The Pune centre did conduct a study with IIT-Ropar and we shared all the required inputs with them. Punjab's portion of the Swan will be channelised once the study is complete." Punjab's chief engineer for dams Narinder Kumar Jain agreed that these dams will help Punjab prevent floods.

The Hindu- 20- July-2023

# More than court action, revisit the Indus Waters Treaty

**T**he Indus Waters Treaty (1960), or IWT, that regulates the Indus water courses between the two riparian states of India and Pakistan, is cited by many as an example of cooperation between two unfriendly neighbours for many reasons. These include the IWT having survived several wars and phases of bitter relations, and its laying down of detailed procedures and criteria for dispute resolution.

But in the last decade, exercising judicial recourse to settle the competing claims and objections arising out of the construction and design elements of the run-of-river hydroelectric projects that India is permitted under the IWT to construct on the tributaries of the Indus, Jhelum and Chenab before these rivers flow into Pakistan, has increased.

In January this year, Pakistan initiated arbitration at the Hague-based Permanent Court of Arbitration to address the interpretation and application of the IWT to certain design elements of two run-of-river hydroelectric projects – on the Kishanganga (a tributary of the Jhelum) and Ratle, a hydro-electric project on the Chenab. India raised objections as it views that the Court of Arbitration is not competent to consider the questions put to it by Pakistan and that such questions should instead be decided through the neutral expert process.

On July 6, 2023, the court unanimously passed a decision (which is binding on both parties without appeal) rejecting each of India's objections. The court determined that it is competent to consider and determine the disputes set forth in Pakistan's request for arbitration.

## Future supply of water

In an atmosphere of a lack of trust, judicial recourse appears to be the only rational strategy by the IWT parties. But it is not likely to address the rapidly growing industrial needs of the two countries, apart from food and energy needs. The IWT provides only "some element of



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Incorporating the two cardinal principles, i.e., 'equitable and reasonable utilisation' and the 'no harm rule', in the treaty will help reduce tensions between India and Pakistan

predictability and certainty with regard to the future supplies of water to the riparian states, but it needs to incorporate mechanisms that allow flexibility to changes in the quantity of water available for allocation among the parties", which a paper in *Water Policy*, the official journal of the World Water Council, highlights.

Bilateral water agreements are "vulnerable to climate change as most of them include fixed allocation of amounts of water use that are concluded under the assumption that future water availability will remain the same as today", the document adds. Under the partitioning logic in the IWT, envisaging a vesting of proprietary rights in the eastern rivers (Article II, Sutlej, Ravi and Beas) to India, and in a similar fashion, the vesting of proprietary rights in the western rivers (Article III, the Indus, Jhelum and Chenab) to Pakistan, does not take into account future water availability.

The IWT requires Pakistan that it is under obligation to let flow and shall not permit any interference with the waters of the eastern rivers. India, similarly, is also obligated to let flow all the waters of the western rivers and shall not permit any interference with these waters except for certain uses which include generation of hydro-electric power on the rivers and tributaries of the western rivers before they flow into Pakistan. With climate change altering the form, intensity and timing of precipitation and runoff, this assumption regarding the supplies of water for agricultural purposes and industrial needs does not hold true.

## Principles of water course

The partitioning of the rivers goes against the logic of treating the entire river basin as one unit which is needed to build its resource capacity. The thrust of the IWT is optimal use of the waters which India believes to be the object and purpose of the IWT as opposed to Pakistan's understanding to be the uninterrupted flow of water to its side. Reconciling this divergent

approach can be sought with the help of two cardinal principles of international water courses law accompanying binding obligations, i.e., equitable and reasonable utilisation (ERU) and the principle not to cause significant harm or no harm rule (NHR).

Although there is no universal definition of what ERU amounts to, the states need to be guided by the factors mentioned in Article 6 of the Convention on the Law of the Non-navigational Uses of International Watercourses 1997, including climate change. The NHR is a due diligence obligation which requires a riparian state undertaking a project on a shared watercourse having potential transboundary effect to take all appropriate measures relating to the prevention of harm to another riparian state, including carrying out a transboundary environmental impact assessment.

In order to ensure rapid development, the states prioritise the ERU over the NHR. Both India and Pakistan believe their uses are consistent with the IWT. In a situation of conflict between different uses of water, it is suggested in Article 10 of the 1997 Convention to lean on "vital human needs" in the context of the ERU and the NHR. 'Vital human needs' are debatable but the inclusion of these principles in the IWT will help in erasing the differences. Even without its inclusion in the IWT, the ERU and NHR are binding on both countries as they are customary international law rule generating the binding obligation to both parties. But the inclusion of these principles in the IWT will ensure predictability to a certain extent.

In an atmosphere of a lack of trust between the two neighbours, the World Bank, a party to the IWT, may use its forum to forge a transnational alliance of epistemic communities (who share a common interest and knowledge to the use of the Indus waters), to build convergent state policies, resulting in the ultimate inclusion of these two principles in the IWT. Thus, revisiting the IWT is a much needed step.



Millennium Post- 20- July-2023

# Yamuna water level breaches danger mark again after rains

**DELHI:** Flow rate at the Hathnikund barrage saw a marginal rise on Tuesday, oscillating between 50,000 & 60,000 cusecs

## OUR CORRESPONDENT

**NEW DELHI:** The water level of the Yamuna in Delhi breached the danger mark again on Wednesday morning, less than 12 hours after it dropped below the threshold, amid rains in the national Capital and the upper reaches of the river.

The Central Water Commission's data showed the water level reached 205.48 metres at 8 am and 205.60 metres an hour later. It is expected to rise to 205.72 metres by 6 pm.

The flow rate at the Hath-

nikund barrage saw a marginal rise on Tuesday afternoon, oscillating between 50,000 and 60,000 cusecs.

It dropped to around 39,000 cusecs by 7 am on Wednesday. One cusec is equivalent to 28.32 litres per second.

The India Meteorological Department has warned of heavy to very heavy rain at isolated places in Uttarakhand and Himachal Pradesh until July 22 and moderate showers in Delhi on Wednesday.

The water level in the river had dropped below the danger mark of 205.33 metres by 8 pm



Children wade through the floodwaters of the swollen Yamuna near Mayur Vihar after heavy monsoon rainfall, in New Delhi, on Wednesday

PTI

on Tuesday, after flowing above the threshold for eight days. It receded to 205.22 metres at 5 am on Wednesday before it started rising again.

The increase in the water level could slow down the rehabilitation of affected families in the inundated low-lying areas of the Capital and they may have to stay longer in relief camps.

It could also impact the water supply, which became normal only on Tuesday after being affected for four to five days due to the inundation of a pump house at Wazirabad.

The Tribune- 20- July-2023

# State to take up Hathnikund dam construction with Himachal: CM

## MONSOON FURY

TRIBUNE NEWS SERVICE

CHANDIGARH, JULY 19

Haryana Chief Minister Manohar Lal Khattar said here today that the state government was actively considering a proposal to construct a dam behind the Hathnikund Barrage in Yamunanagar district. Addressing a press conference here, he said a proposal to construct a dam 500 metres behind the barrage was being taken up with the Himachal Pradesh Government.

The barrage was in the eye of the storm recently, with Delhi Chief Minister Arvind Kejriwal alleging excess release of water from the barrage in Delhi. Haryana, however, refuted the allegation, claiming that it was only a

## DAMAGE ASSESSMENT AFTER JULY

- Compensation of ₹4 lakh to be awarded for loss of life and ₹74,000 to be given in case of losing a limb
- As many as 1,353 villages and four civic body areas in 12 districts have been declared flood-affected
- ₹15,000 to be paid per acre for 100 per cent loss
- Damage assessment to be undertaken after July as some crops can be sown again until July 31



barrage and not a dam, and it could not hold excess water due to heavy rainfall in Himachal Pradesh.

Meanwhile, Khattar has announced to contribute Rs 5 crore to the Himachal CM Relief Fund.

Sharing rainfall statistics, the Chief Minister said from July 8 to 12, the state's cumulative rainfall was 110 mm against the normal rainfall of 28.4 mm, which showed 287 per cent excess rainfall.

Pegging the total loss due to

floods at over Rs 500 crore, Khattar said a provision had been made for the payment of Rs 15,000 per acre for 100 per cent loss. "But the assessment of damage will be done after July because the sowing of some crops can be done again till July 31," he stated.

As many as 1,353 villages and four MC areas in 12 districts — Ambala, Fatehabad, Faridabad, Kurukshetra, Kaithal, Karnal, Panchkula, Panipat, Palwal, Sonapat, Sirsa and Yamunanagar — had been

declared flood-hit, he said.

Refuting the allegations by the Opposition that the flood situation in the state was caused due to increased mining in rivers, the Chief Minister said such statements were illogical, as flood and mining had no connection.

Legal mining in riverbeds could have the potential of increasing the water intake capacity of rivers, helping in preventing floods in low-lying areas as the excess built-up of silt was removed

in the mining process.

Meanwhile, he said around 6,629 persons had been evacuated and 41 relief camps had been organised. About 1,774 persons were currently housed in the camps.

"For the loss of a human life, a compensation of Rs 4 lakh will be given, while in the case of the loss of a limb, the compensation will be Rs 74,000 per person if the disability is between 40 and 60 per cent," he said.

An amount of Rs 2.5 lakh per person would be paid when the disability was more than 60 per cent. The state government would pay a compensation of Rs 37,500 for the loss of a buffalo/cow/camel/yak; Rs 4,000 for a sheep/goat/pig; Rs 32,000 for a camel/horse/bullock; Rs 20,000 for a calf/donkey/pony/mule/heifer; and Rs 100 per poultry bird, he added.

The Morning Standard- 20- July-2023

# Floods result of misguided development, obstruction of river's natural flow: Expert

EXPRESS NEWS SERVICE @ New Delhi

RENOWNED water conservationist Rajendra Singh on Wednesday said the floods in Delhi are a human-made disaster, not merely a result of climate change or natural events.

"The flooding in Delhi is the result of misguided development and the obstruction of the Yamuna's natural flow," he said.

Singh, also known as "Waterman of India", said that the idea of making Delhi flood-free has been discussed by policymakers since the 1960s, but effective action has been lacking. He said historically Delhi consisted of two distinct regions: the Khadar of Yamuna (Indraprastha) and the Aravalli area (Khandavprastha). In the past, rainwater from the Aravalli re-



**One of the key issues contributing to the problem is the lack of cooperation among various government agencies**

Rajendra Singh, water conservationist

gion used to flow directly into the Yamuna. However, with urbanisation, these drains now carry sewage and waste, polluting the river. A 2006 study revealed that Delhi had three major drainage systems -- Barapulla, Sabi (Najafgarh drain) and Shahdara -- along with 201 minor drainages that fed into the Yamuna.

Unfortunately, these drainage systems now carry a mixture of rainwater and sewage, causing flooding and waterlog-

ging during heavy rainfall, the Magsaysay awardee said. "One of the key issues contributing to the problem is the lack of cooperation among various government agencies. Five agencies, including the Delhi government's Flood Control and Delhi Jal Board, Central Public Works Department, Delhi Development Authority, and Jal Shakti Ministry, work independently, leading to inefficiencies in flood control measures," he told PTI.

Singh said these agencies should set aside political differences and collaborate for the common goal of making Delhi flood and drought-resistant. He also criticised the excessive development in the Himalayas which is leading to landslides and increased flooding downstream.



Amar Ujala- 20- July-2023

# यमुना फिर खतरे के निशान के पार

## नदी का जलस्तर 205.79 मीटर पहुंचा, बाढ़ का खतरा

अमर उजाला ब्यूरो

नई दिल्ली। यमुना फिर से खतरे के निशान को पार कर गई है। बुधवार को जलस्तर 205.79 मीटर पहुंच गया। एक दिन पहले मंगलवार को आठ दिन बाद यमुना का पानी खतरे के निशान से नीचे आया था। यमुना का बार-बार बढ़ता-घटता जलस्तर डरा रहा है। बीते दो दिन से हथिनीकुंड बैराज से पानी भी सीमित हो छोड़ा जा रहा है। बुधवार को हर घंटे करीब 42551 क्यूसेक पानी यहां से छोड़ा गया, लेकिन हरियाणा में हो रही बारिश व ट्रेनेज का रुका पानी यमुना में लगातार बहकर आ रहा है। यमुना का जलस्तर बढ़ने का इसे ही कारण माना जा रहा है। फिलहाल नदी के तराई इलाकों से पानी उतरने के बाद बाढ़ से प्रभावित कई लोग फिर से अपने घरों की ओर लौटने लगे हैं। प्रशासन लोगों को राहत शिविरों में ही अभी रहने की सलाह दे रहा है।

यमुना में बाढ़ का खतरा अभी टला नहीं है। मौसम विभाग ने अगले तीन दिन हिमाचल प्रदेश व उत्तराखंड के पहाड़ी इलाकों में भारी बारिश की संभावना जताई है। यदि पहाड़ों पर लगातार भारी बारिश हुई तो हथिनीकुंड बैराज से छोड़े जा रहे पानी की मात्रा बढ़ जाएगी। इसका असर



### बाढ़ राहत शिविर में नहीं मिल रही सुविधाएं

दिल्ली सरकार भले ही ये दावा कर रही हो कि बाढ़ राहत शिविरों में लोगों को खाना-पानी, दवाइयां, शौचालय और सफाई इत्यादि की सुविधाएं मिल रही हैं, लेकिन सच्चाई ये है कि कई ऐसे बाढ़ राहत शिविर हैं जहां पर मोबाइल शौचालय तक का इंतजाम नहीं किया गया है। उनमें से एक गौता कॉलोनी पुरते पर बनाए गए बाढ़ राहत शिविर है, जहां पर करीब 60 परिवार रह रहे हैं। यहां महिलाओं ने बताया कि शौचालय का इंतजाम नहीं होने के कारण उन्हें खुले में शौच के लिए जाना पड़ रहा है।

दिल्ली में दिखाई देगा, क्योंकि दिल्ली में यमुना बाढ़ के मुहाने पर पहले से मौजूद है। बुधवार सुबह पांच बजे

राजघाट परिसर में पानी निकालने के लिए लगाए गए कर्मचारी। अमर उजाला

### घरों में गंदगी के साथ मछलियां भी आईं

सिविल लाईंस इलाके में राजनारायण रोड व उसके आसपास की कॉलोनीयों में भारी जलभराव हुआ था। अब यमुना का जलस्तर नीचे जाने के बाद प्रशासन की ओर से सड़कों से गाद इत्यादि साफ करा दी गई है, लेकिन कई घरों के बेसमेंट में अभी भी पानी भरा है। स्थानीय लोगों ने बताया कि बाढ़ से उनके घरों में गंदगी के साथ मछलियां भी आ गई हैं। बाढ़ से लोगों का सामान खराब हो गया है, इसका दुख है, लेकिन मछली खाने के शौकीन कई लोग इससे खुश भी हैं।

तक पुराने रेलवे ब्रिज पर यमुना का जलस्तर 205.22 मीटर दर्ज किया गया था, लेकिन छह बजे से इसका जलस्तर फिर से बढ़ने लगा। सुबह

सात बजे फिर से यमुना खतरे के निशान को पार कर गई। पानी लगातार बढ़ता गया और शाम को पांच बजे तक 205.79 मीटर पहुंच गया।

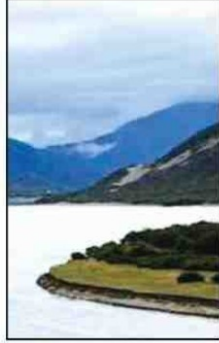
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क्यूसेक पानी छोड़ा गया हथिनीकुंड बैराज से हर घंटे

Haribhoomi- 20- July-2023

## ब्रह्मपुत्र नदी का पानी रोकने चीन बना रहा बांध

तिब्बत। भारत का पड़ोसी देश चीन अपनी हरकतों से बाज नहीं आता है। हालांकि इस पर भी उसे कड़ा जवाब



मिल रहा है। चीन, तिब्बत में एलएसी के करीब यारलुंग-त्संगपो नदी की निचली धारा पर एक सुपर बांध बनाने

की अपनी योजना को आगे बढ़ा रहा है। नदी को भारत में ब्रह्मपुत्र के नाम से जाना जाता है। यह सबसे बड़ी नदी है। चीन दुनिया के सबसे बड़े बांध का निर्माण गुप्त रूप से नहीं कर सकता।