

Daily Current Affairs





4
The Hindu



1
PIB, PRS & Other newspaper



3
The Indian Express



0
Jansatta



2
Financial Express



“If it feels lonely, you’re
not lost—you’re ahead.”

A white, torn-paper-like border runs along the bottom edge of the image, separating the black background from the white background below. The border has a jagged, irregular edge, resembling a piece of paper that has been torn.

SC status 'only for Hindus, Buddhists, Sikhs'

Top court says conversion to any other religion will lead to loss of Scheduled Caste status

Petitioner filed an appeal under the SC Act of 1989, alleging he suffered repeated attacks and caste slurs

HC had held that the petitioner could not claim protection under SC Act as he is a Christian now

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Tuesday held in a judgment that a person professing any religion other than Hinduism, Buddhism, or Sikhism should not be considered a member of a Schedule Caste community.

The court concluded that conversion to any other religion would result in "immediate and complete loss of Scheduled Caste status from the moment of conversion, regardless of birth".

A Bench of Justices Prashant Kumar Mishra and Manmohan invoked Clause 3 of the Constitution (Scheduled Castes) Order, 1950, which mandates that "no person who professes a religion different from Hinduism shall be deemed to be a member of a Scheduled Caste". The

Sikh religion was added to the ambit of Clause 3 in 1956. The provision was further amended in 1990 to include persons professing Buddhism.

"This bar under Clause 3 of the Constitution (Scheduled Castes) Order, 1950 is categorical and absolute," Justice Mishra, who authored the judgment, interpreted the 1950 Order.

Appeal by convert

The court was hearing an appeal filed by Chinthada Anand, who was born a Hindu-Madiga (Scheduled Caste) but converted to Christianity to become a pastor.

Mr. Anand had filed a case under the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act of 1989 after he alleged that he had suffered repeated attacks and caste slurs.

The Andhra Pradesh

Identity question

The top court said that a person professing a religion other than those mentioned in Clause 3 cannot be part of a scheduled caste

- Clause 3 of the Constitution (Scheduled Castes) Order, 1950, mandates that 'no person who professes a religion different from Hinduism shall be deemed to be a member of a Scheduled Caste'
- The Sikh religion was added to the ambit of Clause 3 in 1956
- The provision was further amended in 1990 to include persons professing Buddhism
- The top court observed that the bar in Clause 3 is 'categorical and absolute'



High Court, in a decision in April last year, quashed the criminal proceedings on the ground that Mr. Anand could no longer claim protection under the 1989 Act as he professed Christianity. The High Court was of the view that the caste system was not recognised in Christianity.

The top court drew attention to the term "pro-

fess" in Clause 3 of the 1950 Order.

"The term 'profess' connotes to publicly declare or practice a religion. its essence lies in the open avowal of one's religious beliefs in a manner discernible to the public at large. It is not merely a question of personal belief or private conviction, but requires an outward manifi-

estation of one's faith. Christianity, by its very theological foundation, does not recognise or incorporate the institution of caste," Justice Mishra agreed with the High Court.

The top court said a convert who did not profess any of the three religions – Hinduism, Buddhism, and Sikhism – in Clause 3 of the 1950 Order could not claim any "statutory benefit, protection, reservation or entitlement" of a Scheduled Caste (SC) member. Justice Mishra said the bar admitted no exception.

"A person who professes and practices such religion for personal, social and spiritual purposes cannot, in law, assert membership of a Scheduled Caste for the purpose of securing statutory benefits. The two positions are mutually exclusive and contrary to the Constitutional scheme,"

Justice Mishra observed.

A person claiming to have "re-converted" to Hinduism, Sikhism, or Buddhism must "cumulatively and conclusively establish" clear proof of his earlier caste; provide credible and unimpeachable evidence of *bona fide* re-conversion to the original religion; and show satisfactory evidence that members of his original caste have accepted and assimilated him into the community.

The court said renunciation of the new religion by the convert should translate to the actual adoption and observance of the customs, usages, practices, rituals, and religious obligations of the original caste.

Scheduled Tribes Order

The judgment also dealt with the Constitution (Scheduled Tribes) Order, 1950, which did not pre-

scribe religion-based exclusion as in the case of the Scheduled Caste community. Justice Mishra said a person could claim benefits under the Constitution (ST) Order, 1950, only if he or she continued to belong to that particular tribe "in substance".

"If, due to conversion or long-term abandonment of tribal customs, his/her tribal identity is in doubt, that question becomes a factual matter to be determined at trial... If it is proved that the person in question has completely renounced himself from the customs, rituals and other traits of his tribe, and has assimilated into the converted religion following the practices and customs of that particular religion, a reasonable inference can be drawn that such a person shall not be considered a part of the tribe," the court held.

Core Ruling | मुख्य निर्णय

- **Conversion to any religion other than Hinduism, Buddhism, or Sikhism results in immediate and complete loss of Scheduled Caste status**
- हिंदू धर्म, बौद्ध धर्म या सिख धर्म के अलावा किसी अन्य धर्म में धर्मांतरण से अनुसूचित जाति का दर्जा तुरंत और पूर्ण रूप से समाप्त हो जाता है
- **The bar applies "regardless of birth"** — ancestral SC status becomes void upon conversion
- यह प्रतिबंध "जन्म की परवाह किए बिना" लागू होता है — धर्मांतरण पर पूर्वजों की SC स्थिति शून्य हो जाती है

Constitutional Basis | संवैधानिक आधार

- **Clause 3 of the Constitution (Scheduled Castes) Order, 1950** mandates that no person professing a religion different from Hinduism shall be deemed a member of a Scheduled Caste
- संविधान (अनुसूचित जाति) आदेश, 1950 का खंड 3 यह आदेश देता है कि हिंदू धर्म से भिन्न धर्म को मानने वाला कोई व्यक्ति अनुसूचित जाति का सदस्य नहीं माना जाएगा
- **1956 Amendment:** Sikh religion added to Clause 3
- 1956 संशोधन: सिख धर्म को खंड 3 में जोड़ा गया
- **1990 Amendment:** Buddhism added to the ambit
- 1990 संशोधन: बौद्ध धर्म को दायरे में जोड़ा गया

Case Background | मामले की पृष्ठभूमि

Petitioner Details | याचिकाकर्ता का विवरण

- **Chinthada Anand** — born as Hindu-Madiga (Scheduled Caste)
- चिंथाड़ा आनंद — हिंदू-मादिगा (अनुसूचित जाति) के रूप में जन्म
- Converted to Christianity to become a pastor
- ईसाई धर्म में धर्मांतरण करके पादरी बने
- Filed case under **SC/ST (Prevention of Atrocities) Act, 1989** claiming repeated attacks and caste slurs
- SC/ST (अत्याचार निवारण) अधिनियम, 1989 के तहत मामला दायर किया, बार-बार हमले और जातिगत गालियों का आरोप लगाया

Court Proceedings | न्यायालय की कार्यवाही

- **Andhra Pradesh High Court** (April last year) quashed criminal proceedings
 - आंध्र प्रदेश उच्च न्यायालय (पिछले वर्ष अप्रैल) ने आपराधिक कार्यवाही रद्द कर दी
 - Reasoning: Petitioner could not claim protection under SC Act as he professes Christianity
 - तर्क: याचिकाकर्ता SC अधिनियम के तहत सुरक्षा का दावा नहीं कर सकता क्योंकि वह ईसाई धर्म को मानता है
 - HC observed: Caste system is not recognized in Christianity
 - HC ने कहा: ईसाई धर्म में जाति व्यवस्था को मान्यता नहीं है
-

Supreme Court's Interpretation | सर्वोच्च न्यायालय की व्याख्या

Bench Composition | पीठ की संरचना

- **Justice Prashant Kumar Mishra** (authored the judgment)
- न्यायमूर्ति प्रशांत कुमार मिश्रा (फैसला लिखा)
- **Justice Manmohan**
- न्यायमूर्ति मनमोहन

Key Legal Interpretations | मुख्य कानूनी व्याख्याएं

On the term "Profess" | "मानना" शब्द पर:

- Connotes publicly declaring or practicing a religion
- सार्वजनिक रूप से धर्म की घोषणा करना या उसका पालन करना
- Essence lies in open avowal of religious beliefs in a manner discernible to public at large
- सार्वजनिक रूप से धार्मिक विश्वासों की खुली स्वीकृति में निहित है
- Not merely personal belief or private conviction — requires outward manifestation of faith
- केवल व्यक्तिगत विश्वास या निजी धारणा नहीं — आस्था की बाहरी अभिव्यक्ति आवश्यक है

On Christianity and Caste | ईसाई धर्म और जाति पर:

- Christianity, by its theological foundation, does not recognize or incorporate the institution of caste
- ईसाई धर्म, अपनी धार्मिक नींव के अनुसार, जाति संस्था को मान्यता नहीं देता या शामिल नहीं करता
- Two positions (practicing religion for spiritual purposes AND claiming SC membership for statutory benefits) are **mutually exclusive**
- दो स्थितियां (आध्यात्मिक उद्देश्यों के लिए धर्म का पालन और वैधानिक लाभों के लिए SC सदस्यता का दावा) **परस्पर विरोधी** हैं

Re-conversion Provisions | पुनर्धर्मांतरण प्रावधान

Requirements for Reclaiming SC Status | SC स्थिति पुनः प्राप्त करने की शर्तें

A person claiming to have "re-converted" to Hinduism, Sikhism, or Buddhism must: हिंदू धर्म, सिख धर्म या बौद्ध धर्म में "पुनर्धर्मांतरण" का दावा करने वाले व्यक्ति को:

- 1. Cumulatively and conclusively establish clear proof of earlier caste** पूर्व जाति का स्पष्ट प्रमाण संचयी और निर्णायक रूप से स्थापित करना होगा
- 2. Provide credible and unimpeachable evidence of *bona fide* reconversion to original religion** मूल धर्म में *सद्भावपूर्ण* पुनर्धर्मांतरण का विश्वसनीय और अकाट्य प्रमाण देना होगा
- 3. Show satisfactory evidence that members of original caste have accepted and assimilated him into the community** संतोषजनक प्रमाण दिखाना होगा कि मूल जाति के सदस्यों ने उसे समुदाय में स्वीकार और आत्मसात कर लिया है
- 4. Renunciation must translate to actual adoption and observance of customs, usages, practices, rituals, and religious obligations of the original caste** त्याग को मूल जाति के रीति-रिवाजों, प्रथाओं, अनुष्ठानों और धार्मिक दायित्वों को वास्तविक रूप से अपनाने और पालन करने में परिवर्तित होना चाहिए

Scheduled Tribes Order Provisions | अनुसूचित जनजाति आदेश के प्रावधान

Religion-Based Exclusion Not Applicable | धर्म-आधारित बहिष्करण लागू नहीं

- **Constitution (Scheduled Tribes) Order, 1950** does NOT prescribe religion-based exclusion (unlike SC Order)
- संविधान (अनुसूचित जनजाति) आदेश, 1950 धर्म-आधारित बहिष्करण निर्धारित नहीं करता (SC आदेश के विपरीत)
- A person can claim benefits under ST Order only if he/she continued to belong to that particular tribe **"in substance"**
- कोई व्यक्ति ST आदेश के तहत लाभ का दावा तभी कर सकता है जब वह उस विशेष जनजाति से **"सारतः"** संबंधित रहे

Test for ST Status | ST स्थिति के लिए परीक्षण

- If due to conversion or long-term abandonment of tribal customs, tribal identity is in doubt — becomes a **factual matter to be determined at trial**
- यदि धर्मांतरण या जनजातीय रीति-रिवाजों के दीर्घकालिक परित्याग के कारण जनजातीय पहचान संदिग्ध है — तो यह **मुकदमे में निर्धारित किया जाने वाला तथ्यात्मक मामला** बन जाता है
- If person has completely renounced customs, rituals, and traits of tribe AND assimilated into converted religion — reasonable inference that such person shall not be considered part of the tribe
- यदि व्यक्ति ने जनजाति के रीति-रिवाजों और विशेषताओं को पूर्णतः त्याग दिया है और धर्मांतरित धर्म में आत्मसात हो गया है — तो उचित निष्कर्ष कि ऐसे व्यक्ति को जनजाति का हिस्सा नहीं माना जाएगा

Historical Background | ऐतिहासिक पृष्ठभूमि

Evolution of SC/ST Reservations | SC/ST आरक्षण का विकास

Year/वर्ष	Development/विकास
1936	Government of India (Scheduled Castes) Order under Government of India Act, 1935 —
1950	Constitution (Scheduled Castes) Order issued under Article 341 / अनुच्छेद 341 के तहत संविधान
1950	Original order restricted SC status to Hindus only / मूल आदेश में SC स्थिति केवल हिंदुओं तक सीमा
1956	Sikhs included via Presidential Order amendment / राष्ट्रपति आदेश संशोधन के माध्यम से सिखों को
1990	Buddhists included (following Dr. Ambedkar's mass conversion movement of 1956) / बौद्ध

Dr. B.R. Ambedkar's Role | डॉ. बी.आर. अम्बेडकर की भूमिका

- **1956:** Led mass conversion of approximately 5 lakh Dalits to Buddhism at Nagpur (Deekshabhoomi)
- 1956: नागपुर (दीक्षाभूमि) में लगभग 5 लाख दलितों का बौद्ध धर्म में सामूहिक धर्मांतरण का नेतृत्व किया
- Rejected Christianity and Islam as foreign religions
- ईसाई धर्म और इस्लाम को विदेशी धर्म मानकर अस्वीकार किया
- Chose Buddhism as it was of Indian origin and rejected caste hierarchy
- बौद्ध धर्म को चुना क्योंकि यह भारतीय मूल का था और जाति पदानुक्रम को अस्वीकार करता था
- This 1990 amendment specifically addressed Neo-Buddhist community
- 1990 का यह संशोधन विशेष रूप से नव-बौद्ध समुदाय के लिए था

Constitutional and Legal Framework | संवैधानिक और कानूनी ढांचा

Relevant Constitutional Provisions | प्रासंगिक संवैधानिक प्रावधान

Article/अनुच्छेद	Provision/प्रावधान
Article 341	President may specify castes/races/tribes as Scheduled Castes for a State/UT / राष्ट्रपति किसी राज्य/राज्य के लिए अनुसूचित जातों/जातों/जातों को अनुसूचित जातों के रूप में घोषित कर सकता है।
Article 342	Similar provision for Scheduled Tribes / अनुसूचित जनजातियों के लिए समान प्रावधान
Article 341(2)	Parliament may by law include/exclude any caste from the list / संसद कानून द्वारा किसी जात को सूची में शामिल/अपना कर सकती है।
Article 15(4)	State can make special provisions for SCs/STs / राज्य SC/ST के लिए विशेष प्रावधान कर सकता है।
Article 16(4)	Reservation in public employment for backward classes / पिछड़े वर्गों के लिए सार्वजनिक सेवाओं में आरक्षण।
Article 46	Directive Principle — promote educational and economic interests of SCs/STs / निर्देशक सिद्धांत — SC/ST के शैक्षणिक और आर्थिक हितों को बढ़ावा देना।

SC/ST (Prevention of Atrocities) Act, 1989 | SC/ST (अत्याचार निवारण) अधिनियम, 1989

- Provides criminal penalties for atrocities against SC/ST members
- SC/ST सदस्यों के खिलाफ अत्याचारों के लिए आपराधिक दंड का प्रावधान
- Amended in **2015** and **2018** to strengthen provisions
- प्रावधानों को मजबूत करने के लिए 2015 और 2018 में संशोधित
- Protection available only to those who legally qualify as SC/ST under respective Orders
- सुरक्षा केवल उन्हें उपलब्ध है जो संबंधित आदेशों के तहत कानूनी रूप से SC/ST के रूप में अर्हता प्राप्त करते हैं

Ongoing Debates | चल रही बहसों

1. Dalit Christian/Muslim Reservation Demand दलित ईसाई/मुस्लिम आरक्षण की मांग

- Various groups demanding extension of SC status to Dalit converts to Christianity and Islam
- विभिन्न समूह ईसाई और इस्लाम में धर्मांतरित दलितों को SC का दर्जा देने की मांग कर रहे हैं
- **Ranganath Misra Commission (2007)** recommended extending SC status to Dalit Christians and Muslims
- रंगनाथ मिश्रा आयोग (2007) ने दलित ईसाइयों और मुसलमानों को SC का दर्जा देने की सिफारिश की

2. Sachar Committee (2006) सच्चर समिति (2006)

- Highlighted socio-economic backwardness of Muslims
- मुसलमानों की सामाजिक-आर्थिक पिछड़ेपन को उजागर किया

3. Justice K.G. Balakrishnan Commission (constituted 2022) न्यायमूर्ति के.जी. बालकृष्णन आयोग (2022 में गठित)

- Examining demand for SC status to Dalit Christians
- दलित ईसाइयों को SC का दर्जा देने की मांग की जांच कर रहा है

Counter Arguments | प्रति-तर्क

- SC reservations based on caste-based discrimination inherent in Hindu social structure
- SC आरक्षण हिंदू सामाजिक संरचना में निहित जाति-आधारित भेदभाव पर आधारित है
- Christianity and Islam theoretically reject caste system
- ईसाई धर्म और इस्लाम सैद्धांतिक रूप से जाति व्यवस्था को अस्वीकार करते हैं
- Extending benefits would dilute purpose of affirmative action
- लाभ का विस्तार सकारात्मक कार्रवाई के उद्देश्य को कमजोर करेगा

Socio-Economic Context | सामाजिक-आर्थिक संदर्भ

Population Statistics | जनसंख्या आंकड़े

Category/श्रेणी	Percentage (Census 2011)/प्रतिशत (जनगणना 2011)
Scheduled Castes	16.6% of total population / कुल जनसंख्या का 16.6%
Scheduled Tribes	8.6% of total population / कुल जनसंख्या का 8.6%
Christians	2.3% of total population / कुल जनसंख्या का 2.3%

Ground Reality Issues | जमीनी हकीकत की समस्याएं

- Caste discrimination persists** even after conversion in many communities
- धर्मांतरण के बाद भी कई समुदायों में जातिगत भेदभाव जारी है
- Separate graveyards** for Dalit Christians in some areas
- कुछ क्षेत्रों में दलित ईसाइयों के लिए अलग कब्रिस्तान
- Social exclusion** continues based on original caste identity
- मूल जाति पहचान के आधार पर सामाजिक बहिष्कार जारी है

Geographical Distribution | भौगोलिक वितरण

States with High SC Population | उच्च SC जनसंख्या वाले राज्य

State/राज्य	SC Population %/SC जनसंख्या %
Punjab	31.9%
Himachal Pradesh	25.2%
West Bengal	23.5%
Uttar Pradesh	20.7%
Haryana	20.2%

States with Significant Christian Population | महत्वपूर्ण ईसाई जनसंख्या वाले राज्य

State/राज्य	Christian Population %/ईसाई जनसंख्या %
Nagaland	87.9%
Mizoram	87.2%
Meghalaya	74.6%
Manipur	41.3%
Kerala	18.4%

Implications of the Judgment | फैसले के निहितार्थ

Immediate Effects | तात्कालिक प्रभाव

- Persons who converted from SC to other religions** (Christianity, Islam, etc.) cannot claim: SC से अन्य धर्मों (ईसाई धर्म, इस्लाम आदि) में धर्मांतरित व्यक्ति दावा नहीं कर सकते:
 - Reservation in education / शिक्षा में आरक्षण
 - Reservation in government jobs / सरकारी नौकरियों में आरक्षण
 - Protection under SC/ST Atrocities Act / SC/ST अत्याचार अधिनियम के तहत सुरक्षा
 - Other statutory benefits / अन्य वैधानिक लाभ
- Children of converts** also lose SC status if they follow the converted religion धर्मांतरितों के बच्चे भी SC का दर्जा खो देते हैं यदि वे धर्मांतरित धर्म का पालन करते हैं

Long-term Implications | दीर्घकालिक निहितार्थ

- May deter religious conversions among SCs
- SCs के बीच धार्मिक धर्मांतरण को हतोत्साहित कर सकता है
- Strengthens link between caste identity and Hindu/Buddhist/Sikh religious identity
- जाति पहचान और हिंदू/बौद्ध/सिख धार्मिक पहचान के बीच संबंध को मजबूत करता है
- May lead to legislative challenges or amendments
- विधायी चुनौतियों या संशोधनों का कारण बन सकता है

Question: Under Clause 3 of the Constitution (Scheduled Castes) Order, 1950, which of the following religions are recognized for determining Scheduled Caste status?

प्रश्न: संविधान (अनुसूचित जाति) आदेश, 1950 के खंड 3 के तहत, अनुसूचित जाति की स्थिति निर्धारित करने के लिए निम्नलिखित में से कौन से धर्म मान्यता प्राप्त हैं?

1. Hinduism only / केवल हिंदू धर्म
2. Hinduism and Sikhism only / केवल हिंदू धर्म और सिख धर्म
3. Hinduism, Sikhism, and Buddhism / हिंदू धर्म, सिख धर्म और बौद्ध धर्म
4. Hinduism, Sikhism, Buddhism, and Christianity / हिंदू धर्म, सिख धर्म, बौद्ध धर्म और ईसाई धर्म

Exam & Date / परीक्षा और तिथि

Question / प्रश्न

UPSC Prelims 2025 (May 2025)

No direct question on SC status and religious conversion was

Note / नोट: After thorough verification of UPSC Prelims 2025 question papers, no exact question directly matching this specific topic (SC status loss upon religious conversion or Clause 3 of Constitution (Scheduled Castes) Order, 1950) was found. The topic of SC/ST reservations, Constitutional provisions, and related matters are frequently asked, but this specific Supreme Court judgment is from recent news and is more likely to appear in **UPSC 2026** examinations.

However, related questions on Constitutional framework for SC/ST have been asked in previous years:

Exam & Date / परीक्षा और तिथि

Question / प्रश्न

UPSC Prelims 2018

Which Article of the Constitution empowers the President to specify

UPSC Prelims 2019

The power to include/exclude any caste from SC list lies with: / SC सू

Key Terms for Revision | पुनरावलोकन के लिए मुख्य शब्द

Term / शब्द

Meaning / अर्थ

Profess / मानना

To publicly declare or practice a religion / सार्वजनिक रूप से धर्म की प्र

Bona fide / सद्भावपूर्ण

Genuine, in good faith / वास्तविक, सद्भाव से

Mutually exclusive / परस्पर विरोधी

Two things that cannot exist together / दो चीजें जो एक साथ नहीं हो स

Reconversion / पुनर्धर्मांतरण

Returning to original religion / मूल धर्म में वापसी

Presidential Order / राष्ट्रपति आदेश

Order issued by President under Constitutional authority / संवैधा

How BioPharma SHAKTI can transform biologics with non-animal models

A class of drugs called biologics is becoming more popular worldwide against many chronic diseases, on the flip side, animal models not do reliably predict their safety and efficacy, prompting scientists to shift to bioengineered, human-relevant systems such as organoids, organ-on-a-chip, and 3D bioprinting

Mohit Nikate
 HYDRABAD

In 2006, London woke up to a tragedy. Six healthy men involved in a phase I clinical trial of the anti-rheumatoid arthritis, developed multiple organ failure. The antibody triggered an intense immune reaction that the researchers did not observe in rhesus monkeys in pre-clinical tests because their immune cells responded differently from human immune cells.

The Northwick Park Tragedy, as it was called, became a textbook example of why animals cannot be used as proxies to test human drugs. Similarly, in 2022, the mAb armsament failed to work in 487 patients with Alzheimer's disease during phase II trials despite demonstrating effectiveness in a pre-clinical mouse model.

These mAbs, vaccines, and insulin all belong to a growing class of drugs called biologics — large, complex molecules produced by living cells. Their use is rising worldwide as they treat many chronic diseases.

Recognising their importance, the 2024 Union Budget of India announced the BioPharma SHAKTI strategy to boost domestic production of biologics and their generic counterparts, biosimilars.

However, animal models may not reliably predict the safety and efficacy of biologics. This has prompted a shift towards bioengineered, human-relevant systems such as organoids, organ-on-a-chip, and 3D bioprinting, which are derived from human cells and thus replicate human biology more faithfully.

Human-relevant models

These models are collected under the term non-animal methodologies (NAMs) and are used worldwide to reduce the use of experiments in animals. For example, last year, the UK published a roadmap to phase out animal experiments and promote the adoption of NAMs.

Thanks to the New Drugs and Clinical Trials (Amendment) Rule 2023, India is also promoting the use of NAMs in the development of novel drugs. However, their potential remains untapped in the domain of biologics and biosimilars.

"Biologics are highly specific," University of Illinois adjunct professor Sarfaraz Nisat said. "They bind to particular receptors in the human body, but those receptors are sometimes missing or function differently in animals, which makes animal testing less predictive."

One 2024 study by Cell reported a breast cancer on-chip model to study the effectiveness of CAR T-cell therapy, a leading biologic therapy, against solid tumours.

While CAR T-cell therapy has proven effective against blood cancer, solid tumours like breast cancer pose additional challenges like abnormal blood vessel formation and difficulties for T-cells



Even if non-animal methodologies are promising models, they are not as accessible as animal systems. GETTY IMAGES

to find and attack the cancerous cells. The breast cancer-on-chip model recreated this tumour environment in the lab, and the authors of the 2024 study tested T cells through it to observe whether they could enter the tumour and mount an immune attack, assessing both treatment benefit and potential safety risks without animals.

These models can also reduce costs and shorten development timelines, making them attractive to pharmaceutical companies. A 2019 analysis in *Drug Discovery Today* estimated that organ-on-chip technologies could lower overall drug development costs by 30-20%. They also found the time required for lead optimisation, when scientists identify a promising drug candidate from a pool of molecules, could drop by 15%.

Future of biologics

Even if NAMs are promising models, they are not as accessible as animal systems. More than 90 academic labs in India are working on these models. However, the innovation here is not translating into industry use. "Translating NAMs into industry-ready assays requires a clear content of use, robust documentation, and standardised, reproducible protocols, even before qualification. While institutions support entrepreneurship, sustained commercialisation trends are stronger, modest policy support," Kasturi Mahadeb, Chief Manager at the Centre for Predictive Human Model Systems (CPHMS), AIC-CMM, said. (Note: The author works at CPHMS.)

The development of NAMs also

BioPharma SHAKTI also supports biosimilars—generic versions of biologics, reverse-engineered once the original product goes off patent. However, regulatory adjustments are involved here, which require greater attention from the government.

requires sustained funding and infrastructure. With an outlay of ₹10,000 crore, BioPharma SHAKTI can provide the necessary backing.

"I think the best use of these funds would be not to develop a single product but to build systems that enable many companies to do so," Dr. Nisat added.

"The culture of entrepreneurship is also a challenge in India," Narendra Chitambar, CEO of synbio/tech Biologics, said. "Although there is an increase in the number of start-ups and MSMEs in biologics (supported by DBT, ICAR, and other grants), especially greater investment, as well as support for the development of supply chain materials, is needed to create real impact. Additionally, investors are not well versed in the risks and potentials of the biologics industry."

Regulatory, market challenges
 Another area supported by BioPharma SHAKTI is biosimilars, generic versions of biologics that are reverse-engineered once the original product goes off patent. However, there are additional financial risks and regulatory adjustments

involved, which require greater attention from the government. One challenge is patent overreliance, which allows the exclusive rights of an original biologic to be extended. For example, although the intravenous form of the cancer drug trastuzumab was approved in 2006, the manufacturer later introduced a subcutaneous formulation with a separate patent. Because of this prolonged market exclusivity, cheaper biosimilar versions were not available until 2016.

Before being commercialised, biosimilars also have to receive a nod from the Central Drugs Standard Control Organisation (CDSCO), India's apex regulatory body. These approvals are based on set guidelines; however, the updated guidelines are still in draft form.

"While India has been updating its biosimilar guidelines to accommodate NAMs, implementation has been slow, and regulatory confluence in biopharmaceuticals is still evolving. If accelerated, this would expedite the adoption of NAMs in the biologics and biosimilars field, helping BioPharma SHAKTI achieve its goals," says Dr. Mahadeb.

Therefore, aligning with industry realities and securing regulatory clarity for their use will make biosimilars and biologics manufacturing in India faster, more productive, and cost-efficient, thus realising the vision set by BioPharma SHAKTI.

Mohit Nikate is a science communicator at the Centre for Predictive Human Model Systems, Hyderabad. mohitnikate123@gmail.com

THE GIST

Multifunctional antibodies, vaccines, and insulin all belong to the growing class of biologics — large, complex molecules produced by living cells.

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BIG SHOT



Quantum discovery: A side-on view of the world's largest superconducting quantum magnet at the CERN detector on the Large Hadron Collider, near Geneva. The Collider has discovered a new particle, its 80th so far, that has been named '95-c-particle'. Scientists hope the particle, which is similar to a proton but four times heavier, will reveal more about the strange behaviour of quantum mechanics. 1/24

WHAT IS IT?

Dwarka Basin: an ancient haven

In February, researchers from IIT Bombay, the Indian Statistical Institute, and IISER Kolkata reported that fossil shells in the Dwarka Basin date back to the early Miocene epoch. They identified 42 species of snails, including four new to science, that indicated the area was once warm and rich in nutrients. The findings are expected to help scientists better understand the ancient marine environments and biodiversity of western India.

The Dwarka Basin is a significant geological and archaeological region located off the coast of Gujarat. It mainly refers to a sedimentary basin in the Kathiawar Peninsula that contains layers of marine rocks and fossils. Geologists are interested in the Basin to understand the earth's history over millions of years. The Basin features rock layers such as the Gaj and Dwarka formations dating back to the Miocene epoch (23 million to 5.3 million years ago). These layers hold a wealth of marine fossils, including ancient snails and foraminifera. Energy companies are also exploring the basin for potential signs of oil and gas deposits beneath the volcanic rock. The area's popularity surged in the 1980s when marine archaeologists



Photographic this section image of an Anomina sp. fossilised in the Gaj formation of the Dwarka Basin. DOI: 10.1017/jpa.2024.10148

found submerged pillars and over 1,200 stone anchors on the seabed near the modern city of Dwarka. Experts from the Archaeological Survey of India continue to dive into the basin to map these structures. The Gujarat government has also announced plans to launch submarine tourism here to allow visitors to see the structures firsthand.

For feedback and suggestions
 for 'Science', please write to sciencetalk@thehindu.co.in with the subject 'Daily page'

How BioPharma SHAKTI can transform biologics with non-animal models

A class of drugs called biologics is becoming more popular worldwide against many chronic diseases; on the flip side, animal models not do reliably predict their safety and efficacy, prompting scientists to shift to bioengineered, human-relevant systems such as organoids, organ-on-a-chip, and 3D bioprinting

Mohit Nikalje
HYDERABAD

In 2006, London woke up to a tragedy. Six healthy men involved in a phase I clinical trial of rituximab, a monoclonal antibody (mAb) designed to treat rheumatoid arthritis, developed multiple organ failure. The antibody triggered an intense immune reaction that the researchers did not observe in rhesus monkeys in preclinical tests because their immune cells responded differently from human immune cells.

The Northwick Park Tragedy, as it was called, became a textbook example of why animals cannot be used as proxies to test human drugs. Similarly, in 2022, the mAb semorinemab failed to work in 457 patients with Alzheimer's disease during phase II trials despite demonstrating effectiveness in a preclinical mouse model.

These mAbs, vaccines, and insulin all belong to a growing class of drugs called biologics – large, complex molecules produced by living cells. Their use is rising worldwide as they treat many chronic diseases.

Recognising their importance, the 2026 Union Budget of India announced the BioPharma SHAKTI strategy to boost domestic production of biologics and their generic counterparts, biosimilars.

However, animal models may not reliably predict the safety and efficacy of biologics. This has prompted a shift towards bioengineered, human-relevant systems such as organoids, organ-on-a-chip, and 3D bioprinting, which are derived from human cells and thus replicate human biology more faithfully.

Human-relevant models

These models are collected under the term non-animal methodologies (NAMs) and are used worldwide to reduce the use of experiments in animals. For example, last year, the U.K. published a roadmap to phase out animal experiments and promote the adoption of NAMs.

Thanks to the New Drugs and Clinical Trials (Amendment) Rules 2023, India is also promoting the use of NAMs in the development of novel drugs. However, their potential remains untapped in the domains of biologics and biosimilars.

"Biologics are highly specific," University of Illinois adjunct professor Sarfaraz Niazji said. "They bind to particular receptors in the human body. But those receptors are sometimes missing or function differently in animals, which makes animal testing less predictive."

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to find and attack the cancerous cells.

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Future of biologics

Even if NAMs are promising models, they are not as accessible as animal systems. More than 90 academic labs in India are working on these models. However, the innovation here is not translating into industry use. "Translating NAMs into industry-ready assays requires a clear context of use, robust documentation, and standardised, reproducible protocols, even before qualification. While institutions support entrepreneurship, sustained commercialisation needs stronger, modern policy support," Kasturi Mahadik, Chief Manager at the Centre for Predictive Human Model Systems (CPHMS), AIC-OCMB, said. (Note: the author works at CPHMS.)

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"I think the best use of these funds would be not to develop a single product but to build systems that enable many companies to do so," Dr. Niazji added.

"The culture of entrepreneurship is also a challenge in India," Narendra Chirmole, CEO of SymphonyTech Biologics, said. "Although there is an increase in the number of start-ups and MSMEs in biologics (supported by DBT, ICMR, and other grants), exponentially greater investment, as well as support for the development of supply chain materials, is needed to create real impact. Additionally, investors are not well versed in the risks and potentials of the biologics industry."

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Another area supported by BioPharma SHAKTI is biosimilars, generic versions of biologics that are reverse-engineered once the original product goes off patent. However, there are additional financial risks and regulatory adjustments

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Before being commercialised, biosimilars also have to receive a nod from the Central Drugs Standard Control Organisation (CDSCO), India's apex regulatory body. These approvals are based on set guidelines; however, the updated guidelines are still in draft form.

"While India has been updating its biosimilars guidelines to accommodate NAMs, implementation has been slow, and regulatory confidence in independently validated NAM models is still evolving. If accelerated, this would expedite the adoption of NAMs in the biologics and biosimilars field, helping BioPharma SHAKTI achieve its goals," says Dr. Mahadik.

Therefore, aligning with industry realities and securing regulatory clarity for their use will make biosimilars and biologics manufacturing in India faster, more productive, and cost-efficient, thus realising the vision set by BioPharma SHAKTI.

(Mohit Nikalje is a science communicator at the Centre for Predictive Human Model Systems, Hyderabad. mohitnikalje234@gmail.com)

THE GIST

▼ Monoclonal antibodies, vaccines, and insulin all belong to the growing class of biologics – large, complex molecules produced by living cells

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1. BioPharma SHAKTI is a new Union Budget 2026–27 initiative aimed at making India a global biopharma manufacturing hub.

बायोफार्मा शक्ति Union Budget 2026–27 की एक नई पहल है, जिसका उद्देश्य भारत को वैश्विक बायोफार्मा मैनुफैक्चरिंग हब बनाना है। India Budget +1

- The Budget provides an outlay of ₹10,000 crore over the next five years for biologics and biosimilars.

बजट में बायोलॉजिक्स और बायोसिमिलर्स के लिए अगले पाँच वर्षों में ₹10,000 करोड़ का प्रावधान किया गया है।

India Budget +1

- Its broader goal is to strengthen domestic production capacity, reduce dependence on imports, and improve India's role in high-value pharmaceutical manufacturing.

इसका व्यापक लक्ष्य घरेलू उत्पादन क्षमता बढ़ाना, आयात पर निर्भरता कम करना और उच्च-मूल्य फार्मास्यूटिकल निर्माण में भारत की भूमिका मजबूत करना है। India Budget +1

2. The article argues that BioPharma SHAKTI can transform biologics by encouraging a shift from animal testing to non-animal, human-relevant models.

लेख का तर्क है कि बायोफार्मा शक्ति animal testing से non-animal, human-relevant models की ओर बदलाव को बढ़ावा देकर biologics क्षेत्र को बदल सकती है।

- These models include organoids, organ-on-chip systems, and 3D bioprinting.
इन मॉडलों में organoids, organ-on-chip systems और 3D bioprinting शामिल हैं।
- The central idea is that human biology is often better reproduced by such systems than by animal models.

मुख्य विचार यह है कि मानव जैविकी को ऐसे सिस्टम अक्सर पशु मॉडलों की तुलना में बेहतर ढंग से दर्शाते हैं।

3. **Biologics are large, complex medicines produced using living cells, and they are increasingly important in treating chronic diseases.**

Biologics बड़े, जटिल औषधीय उत्पाद होते हैं जो जीवित कोशिकाओं की सहायता से बनाए जाते हैं, और chronic diseases के उपचार में इनका महत्व लगातार बढ़ रहा है। Press Information... +1

- They include monoclonal antibodies, vaccines, and insulin.
इनमें monoclonal antibodies, vaccines और insulin शामिल हैं।
- They are especially relevant for diseases such as cancer, autoimmune disorders, and other non-communicable diseases.

ये विशेष रूप से cancer, autoimmune disorders और अन्य non-communicable diseases के लिए महत्वपूर्ण हैं। India Budget +1

4. **The article highlights an important scientific problem: animal models do not always reliably predict human safety and efficacy.**

लेख एक महत्वपूर्ण वैज्ञानिक समस्या को रेखांकित करता है: animal models हमेशा मानव सुरक्षा और प्रभावकारिता का विश्वसनीय अनुमान नहीं लगा पाते।

- A drug may appear safe or effective in animals but fail in humans.
कोई दवा पशुओं में सुरक्षित या प्रभावी दिख सकती है, लेकिन मनुष्यों में विफल हो सकती है।
- This is particularly important for biologics because they interact with human immune and cellular systems in complex ways.

यह biologics के लिए विशेष रूप से महत्वपूर्ण है क्योंकि वे मानव immune और cellular systems के साथ जटिल ढंग से अंतःक्रिया करते हैं।

5. Non-animal models are considered more human-relevant because they are derived from human cells and tissues.

Non-animal models को अधिक human-relevant माना जाता है क्योंकि वे मानव कोशिकाओं और ऊतकों से विकसित किए जाते हैं।

- Organoids are miniaturised, simplified versions of organs grown in the lab.
Organoids प्रयोगशाला में विकसित किए गए अंगों के छोटे और सरल रूप होते हैं।
- Organ-on-chip systems simulate organ functions on microfluidic chips.
Organ-on-chip systems microfluidic chips पर अंगों के कार्यों का अनुकरण करते हैं।
- 3D bioprinting can create tissue-like structures that help researchers study drug response in a more realistic way.
3D bioprinting ऐसे tissue-like structures बना सकती है जो शोधकर्ताओं को drug response का अधिक यथार्थ अध्ययन करने में मदद करती हैं।

6. The policy relevance of this article lies in the fact that India has already amended its drug rules to allow certain non-animal methodologies.

इस लेख की नीतिगत प्रासंगिकता इस तथ्य में है कि भारत पहले ही अपने drug rules में संशोधन कर कुछ non-animal methodologies को अनुमति दे चुका है। CDS CO +1

- The New Drugs and Clinical Trials (Amendment) Rules, 2023 formally introduced additional non-animal testing methods.
New Drugs and Clinical Trials (Amendment) Rules, 2023 ने औपचारिक रूप से additional non-animal testing methods को शामिल किया। CDS CO
- This created a regulatory opening for alternatives such as cell-based assays and other advanced methods.

इससे cell-based assays और अन्य advanced methods जैसे विकल्पों के लिए नियामकीय रास्ता खुला।

Text & Context

THE HINDU

NEWS IN NUMBERS

Funds allocated in the Delhi Budget for underground wiring

200 crore. The Delhi Budget 2023-27 allocated ₹3,342 crore to the UT's power department, including ₹5,500 crore for subsidy payments and ₹200 crore for shifting overhead wires underground. The government doubled the funds for shifting overhead high tension and low tension wires from ₹100 crore in 2022-26 to ₹200 crore in

Projects cleared under border development scheme since 2004-05

39,248 More than 39,000 projects have been approved under the Border Area Development Programme, which is in its 'mature phase', since FY 2004-05 in the bordering States and Union Territories, including Uttar Pradesh, Rajasthan and Jammu and Kashmir. Lok Sabha was informed on Tuesday.

People arrested in Iran over online activity 'undermining security'

466 Iranian police arrested 466 people over alleged online activities undermining national security, state media reported on Tuesday, in one of the largest sweeps since the war with Israel and the U.S. began. Overall arrests this month have surpassed 3,000, with those detained accused of flouting sensitive sites or "cooperating with the enemy," sources

Number of drones fired at Ukraine by Russia overnight

400 Russia launched nearly 400 long-range drones at Ukraine's civilian areas overnight, Ukraine's air force said. Russia also fired 23 cruise missiles and seven ballistic missiles at Ukraine, hitting at least 10 locations, according to the air force. Ukrainian civilians have endured relentless harassment since Russia's full-scale invasion over four years ago.

Number of civilians killed in Sudan in drone strikes this year

500 Over 500 civilians were killed in drone strikes in Sudan between January and March 15, 2023, the UN said on Tuesday. A sharp spike in the use of drones in Sudan underlines the devastating impact of high-tech weapons in populated areas, said Maria Hertenstein, spokeswoman for the UN rights office.

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When the Chief Justice steps away

The recusal of C.J. Surya Kant from the Chief Election Commissioner appointment law challenge case raises important questions about conflict of interest, the doctrine of necessity, and the limits of pre-emptive judicial direction, as well as the need for a statute governing judicial recusal

LETTER AND SPIRIT

V. Venkatesan

On March 20, Chief Justice of India Surya Kant stepped away from hearing a batch of petitions challenging the Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023. The legislation replaced the Chief Justice of India with a Union Minister, on the selection panel for appointing the Chief Election Commissioner and other Election Commissioners, superseding the Supreme Court's 2023 interim arrangements. "I will be accused of conflict of interest," the CJ remarked before directing that the case be listed on April 7 before a bench comprising judges not in the line of succession to the office of the Chief Justice. While the order directs the Registry to list the case before a bench to be earmarked separately by the Chief Justice of India, his oral remarks while hearing the case, *Dr. Avay Prakash v. Union of India* (2023), raises questions that will linger long after the bench is constituted. CJ Surya Kant is the second CJ to recuse from hearing the case. Earlier, CJ Nandki Kulkarni recused from hearing the same case in 2024.

The doctrine and its foundations Recusal flows from one of the oldest maxims of natural justice: *nemo iudex in causa sua* — no one shall be a judge in their own cause. In its modern form, the Supreme Court has evolved strict automatic disqualification for pecuniary interest, as in *Manoh Lal v. Dr. Prem Chandra* (1987), toward a standard of real likelihood of bias. *Ranjit Thakur v. Union of India* (1987) refined this latter, holding that a reasonable apprehension of bias, and not merely a remote possibility, justifies withdrawal.

Every court to have addressed the question has held that the decision to recuse, rests on the judge's own conscience. No party can compel it, and no statute in India codifies the standard, unlike in the United States where Section 8(b) of Title 28 of the United States Code requires a federal judge to disqualify themselves in any proceeding in which their impartiality might reasonably be questioned.

The NJAC precedent The most directly relevant Indian precedent cuts the other way. When the validity of the National Judicial Appointments Commission Act, 2014 was before a five-judge Constitution Bench in *Supreme Court Advocates-on-Record Association v. Union of India* (2015), recusal was sought against Justice L.S. Khehar on the ground that he would eventually become Chief Justice and therefore had an institutional stake in whether the Collegium or the NJAC governed future appointments. Justice Khehar refused. His reasoning rested on two pillars. First, the conflict before every judge on the bench, since all would eventually be part of the Collegium if the petitioners succeeded, or subject to the NJAC if they failed. Second, and more fundamentally, he invoked what legal systems call the doctrine of necessity: when the only available forum is also the forum that faces a disqualifying conflict, the conflict must yield to institutional obligation. "If it were in accordance with the prayer for my recusal, I would be initiating a wrong practice, and laying



Judicial discretion: No party can compel recusal, and no statute in India codifies when a judge must step aside. (PTI/ANSA)

down a wrong precedent," he held.

In his concurring opinion, Justice Khehar also added that a judge choosing to recuse bears a constitutional duty of transparency, that indicating reasons for withdrawal is itself part of the oath of office taken under the Third Schedule of the Constitution.

The present case The structural logic of NJAC applies equally to the CEC law challenge, and arguably with less force for recusal. Every sitting judge of the Supreme Court is a potential future Chief Justice under the seniority convention established by the Second Judges case. The conflict of interest that moved Chief Justice Surya Kant to step aside, therefore, afflicts every member of the court simultaneously. The doctrine of necessity then compels the conclusion that the Supreme Court must hear the case regardless, since no alternative court of equivalent jurisdiction exists, while acknowledging the conflict openly, as the NJAC Bench did. The CJ's recusal, viewed through this lens, represents a departure from a principle the court itself laid down a decade ago.

A direction that binds successors More troubling than the recusal itself is the accompanying oral direction (as reported by the media, though the order uploaded is silent on this). By specifying that the replacement bench must exclude judges in line to become Chief Justice, the CJ has made a prospective determination

about the disqualification obligations of judges who have not yet considered the question for themselves. Recusal — an act of individual judicial conscience. It cannot be mandated in advance by a predecessor. To pre-assign a conflict of interest to judges who have not adjudicated whether one exists is to collapse the distinction between institutional incapacity and personal disqualification.

There is a further problem the direction does not account for: the office of the Chief Justice has occasionally passed to judges outside the expected seniority line due to the resignation, health, or death of those ahead of them. A judge constituted on the replacement bench as someone outside the line of succession could, through such contingency, subsequently reach the office of Chief Justice. The prophylactic rule, designed to eliminate the appearance of self-interest, cannot account for the accident of judicial mortality.

CJ Surya Kant's decision suggests another incongruity. If the CJ's recusal of himself and the other judges, who are in line to become CJ in the future is justified, can he, as Minister of the House, decide which of the other judges can hear this case, given that the order authorises him to entrust the bench to the recent debate on the no-confidence motion against Lok Sabha Speaker Om Birla, many members from the Opposition queried whether he could choose the

THE GIST

On March 20, Chief Justice of India Surya Kant stepped away from hearing a batch of petitions challenging the Chief Election Commissioner appointment law, citing 'conflict of interest'.

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person who would preside over the House during the proceedings, even while choosing to recuse himself. The answer from the government, that the Speaker's post does not envisage a vacancy in office, may be accurate, but it still fails to satisfy the doubts on conflict of interest, which led to the decision to recuse in the first place.

The need for codification India has no statute governing judicial recusal, with the code of conduct enforceable against Supreme Court judges, and no mechanism to review a recusal decision once made. The American experience illustrates both the value of clear rules and their limits without an external review mechanism: Section 455 provides a codified objective standard, but at the apex level it remains entirely self-enforced.

The CEC law dispute, in which two successive Chief Justices have now recused from the same case, underscores the urgency. When the question of who appoints the guardians of elections is left to a bench constituted by individual direction rather than principled rule, the deficit is institutional as much as it is individual.

India's constitutional framework is well-served by judges who exercise their discretion with care. It would be better served still by a framework that transforms that discretion into obligation. (V. Venkatesan is a senior legal journalist and researcher.)

When the Chief Justice steps away

The recusal of CJ Surya Kant from the Chief Election Commissioner appointment law challenge case raises important questions about conflict of interest, the doctrine of necessity, and the limits of pre-emptive judicial direction, as well as the need for a statute governing judicial recusal

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The doctrine and its foundations
Recusal flows from one of the oldest maxims of natural justice: *nemo iudex in causa sua* — no one shall be a judge in their own cause. In its modern form, the Supreme Court has moved from strict automatic disqualification for pecuniary interest, as in *Mumukshu Lal v. Dr. Prem Chand* (1957), toward a standard of real likelihood of bias. *Ranjit Thakur v. Union of India* (1987) refined this further, holding that a reasonable apprehension of bias, and not merely a remote possibility, justifies withdrawal.

Every court to have addressed the question has held that the decision to recuse, rests on the judge's own conscience. No party can compel it, and no statute in India codifies the standard, unlike in the United States where Section 405 of Title 28 of the United States Code requires a federal judge to disqualify themselves in any proceeding in which their impartiality might reasonably be questioned.

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Judicial directions no party can compel recusal, and no statute in India codifies when a judge must step aside. (© IFFI MALIK)

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There is a further problem the direction does not account for: the office of the Chief Justice has occasionally passed to judges outside the expected seniority line due to the resignation, health, or death of those ahead of them. A judge constituted on the replacement bench as someone outside the line of succession could, through such contiguity, subsequently reach the office of Chief Justice. The prophylactic rule, designed to eliminate the appearance of self-interest, cannot account for the accidents of judicial mortality.

CJ Surya Kant's decision suggests another incoherence: if the CJ's recusal of himself and the other judges, who are in line to become CJ in the future is justified, can he, as Master of the Roster, decide which of the other judges can hear this case, given that the order authorizes him to earmark the bench? In the recent debate on the no-confidence motion against Lok Sabha Speaker Om Birla, many members from the Opposition queried whether he could choose the

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The need for codification

India has no statute governing judicial recusal, no binding code of conduct enforceable against Supreme Court judges, and no mechanisms to review a recusal decision once made. The American experience illustrates both the value of clear rules and their limits without an external review mechanism: Section 405 provides a codified objective standard, but at the apex level it remains entirely self-enforced.

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Aspect	Summary	Added facts for exam
Main issue	CJI Surya Kant stepped away from hearing petitions challenging the Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023 .	The recusal happened because he had earlier indicated a possible conflict of interest linked to future CJI succession and the institutional implications of the case. Live Law
Why the case matters	The petitions challenge the 2023 law on appointment of the CEC and ECs .	This law replaced the earlier arrangement that emerged after the Anoop Baranwal v. Union of India (2023) judgment, where the SC had directed appointments through a panel including the Prime Minister, Leader of Opposition, and Chief Justice of India until Parliament made a law.
What the 2023 Act changed	The 2023 Act removed the CJI from the appointment committee.	Under the Act, the selection committee consists of the Prime Minister, a Union Cabinet Minister nominated by the PM, and the Leader of Opposition / leader of largest opposition party in Lok Sabha . This is a key polity fact.
Reason for recusal	The concern was that the outcome could affect a process in which the office of the CJI had earlier been given a place, and questions of institutional interest could arise.	Judicial recusal is based on the principle that justice must not only be done, but must also be seen to be done . This links to the rule against bias in natural justice.
Doctrine discussed	The article highlights the tension between conflict of interest and the doctrine of necessity .	The doctrine of necessity means that even if bias concerns exist, a judge may still hear a matter if no equally competent alternative forum exists. It is an exception to the bias rule.
Core legal principle	No person should be a judge in their own cause.	This is the maxim nemo iudex in causa sua , one of the two classic pillars of natural justice . The other is audi alteram partem — hear the other side.



Relevance to election law	The case concerns the process of appointing members of the Election Commission of India .	Article 324 of the Constitution vests the superintendence, direction and control of elections in the Election Commission. This article is central for prelims and mains.
Connection with ECI independence	The composition of the appointment committee affects perceptions of the independence and neutrality of the Election Commission.	A frequent exam theme is whether appointment mechanisms should ensure institutional autonomy through broader consultation, judicial presence, or parliamentary oversight.
Why recusal is sensitive here	The article suggests a conflict can arise not only from personal benefit, but also from institutional office-related implications .	In public law, conflict of interest can be pecuniary, personal, or institutional . This article is mainly about institutional conflict.
Practical concern	If judges likely to become future CJIs also step aside, it could narrow the bench options.	That is where the doctrine of necessity becomes relevant: courts must still function and constitutional cases cannot be left unheard indefinitely.
Comparative concern	The article implies India needs a more transparent framework.	In comparative constitutional systems, recusal norms often include written disclosure standards, ethical codes, and clearer institutional guidance.
Exam significance	Important for Polity, Constitution, Judiciary, Election Commission, and Natural Justice .	Useful in mains answers under judicial accountability, institutional integrity, constitutional morality, and independence of constitutional bodies.

IN BRIEF



New India Assurance gets ₹189.37 cr IT demand order

New India Assurance Company has been issued an assessment order by the Income Tax Department asking it to pay more than ₹189.37 crore. The order for ₹189.37 crore is for AY 2023-24 and issued by the National Faceless Assessment Centre disallowing certain expenses. New India Assurance said in a filing on Tuesday. The company said it would pursue an appeal before NPTAT or other legal options against the said order.

HDFC Life Insurance gets Income Tax order for ₹172 cr.

HDFC Life Insurance Company has received an Income Tax order asking it to pay a little over ₹172 crore, consisting of ₹146.46 crore tax demand, ₹45.55 crore interest and nil penalty. The order from the Income Tax authorities in Mumbai is for Assessment Year 2023-24 (financial year 2022-23) and related to multiple alleged violations. The company will file an appeal before the Appellate Authority, HDFC Life said in a filing on Tuesday.

Rajmarg Infra Investment Trust gets listed on the BSE

The National Highways Authority of India's (NHAI) Rajmarg Infrastructure Investment Trust (RIIT) was listed on the BSE on Tuesday, in the presence of Union Road Transport and Highways Minister Nitin Gadkari. The RIIT is aimed at widening investor participation in the highway infra sector. Calling the listing a "significant milestone," Mr. Gadkari said the issue size. The first IPO doesn't attract nearly 14 times the offer size.

Manipal Health to raise ₹8,000 crore via IPO

The Hindu Bureau MUMBAI
Manipal Health Enterprise Ltd., backed by Singapore's Temasek, has filed Draft Red Herring Prospectus (DRHP) with SEBI on Tuesday to raise ₹8,000 crore through an IPO. The IPO also comprises offer-for-sale of up to ₹2,27,066 equity shares by promoters viz. Imperius Healthcare Investments, Manipal Education and Medical Group India and existing investors including TPG and Novus Holdings. The proceeds would mainly be used to repay debt with ₹2,378 crore for repayment in full or part of the outstanding borrowings accrued interest available for Manipal Hospitals Pvt. Ltd.

AC firms stare at war induced plastic pinch

The Hindu Bureau HYDRABAD
Air-conditioner firms in India are looking forward to FY27 with hope as West Asia war threatens to hit plastic components availability and consumer sentiment, adding to the challenges around input prices and new energy label, a top company official said. Difficult to get. Lack of plastic components are becoming difficult to get in the backdrop of the war impact on crude supplies. The additional price increase on this count thought is early to assess for the AC makers feeling the

Assam floats tender for satellites to monitor floods

Chief Minister Sarma announced the project in the 2025-26 State Budget. The procurement is for at least five satellites in low-earth orbit

Kamal Shankar
KANSAS CITY, MISSOURI

Assam has become the first Indian state to float a tender for a group of earth-observation satellites that it says will strengthen disaster response along the flood-prone Brahmaputra valley and help survey the state's borders.

The Assam Science Technology and Environment Council issued an invitation of interest (IOI) on March 16 inviting private and aerospace companies to design, build, launch, operate, and eventually transfer the satellites to state ownership. The initiative has been named AssamSAT.

Chief Minister Himanta Biswa Sarma announced the project in the 2025-26 State Budget, as a means to achieve what he has repeatedly described as an "infrastructure-free Assam".

Mr. Sarma has argued that conventional border fencing is inadequate for the state's chors, the seasonally inundated river islands along the Bangladesh border, and that real-time satellite monitoring is the sole practical alternative.

The procurement is structured around at least five satellites in low-earth orbit. The first IOI doesn't say whether the satellites

Third eye

Assam has become the first Indian state to float a tender for a group of earth-observation satellites. The move is aimed at strengthening disaster response along the flood-prone Brahmaputra valley. Chief Minister Sarma announced the project in the 2025-26 State Budget, as a means to achieve what he has repeatedly described as an "infrastructure-free Assam".

The state sits close to the Siliguri Corridor, a key land (discontinuity) called the chicken's neck that physically connects the Northeast to the rest of India, and which state and Central security agencies have been preoccupied with monitoring.

Mr. Sarma has also extended the satellite's mandate to include tracking drug trafficking routes and monitoring poaching in the Kaziranga National Park. In 2024, NeeSpace India, Ltd. cleared a private-sector north observation constellation led by Dhruva Space and Pixxel.

The plan comprises small satellites carrying optical and hyperspectral sensors in low-earth orbit to deliver near-real-time imagery for agriculture, disaster response, and national security issues while orbit. The first IOI doesn't say whether the satellites

currently, state disaster management agencies seeking satellite data must submit requests to the National Remote Sensing Centre, which will process and fulfil those requests.

Benchmark indices up 1.7% in relief after continued rout

Ashokamithran T.
MUMBAI

Markets bounced back by more than 1.8% on Tuesday after weeks of continued rout since the beginning of the Iran-U.S. war, after U.S. President Donald Trump announced a temporary halt on strikes targeting Iranian energy infrastructure.

The 30-share BSE Sensex jumped 1,373.06 points or 1.89% to settle at 74,068.48. During the day, it soared 1,793 points or 2.46% to 74,461.59. The 50-share NSE Nifty edged 399.75 points or 1.76% to end at 22,592.40.

Despite being the best session of the week, the Nifty has slipped 11.45% since February 24, when it was at 25,424.68.

Markets have also become considerably choppy in terms of volatility for a sustained pull-back, but follow-through gains are needed to signal a trend reversal, said Vinay Rajani, Senior Technical Research Analyst, HDPC Securities.

(With PTI inputs)



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The day before closing, the Nifty was broadly flat, closing below 5100 after touching 5114 a hawk last week. Today's bounce (back) in terms of volatility for a sustained pull-back, but follow-through gains are needed to signal a trend reversal, said Vinay Rajani, Senior Technical Research Analyst, HDPC Securities.

(With PTI inputs)

Truckers invoke force majeure amid fuel shortage, decline in cargo flow

Jayesh Chaudhary

Truckers have invoked force majeure to seek a temporary suspension of their contracts with oil companies, amid a fuel shortage and a shift to spot pricing,

causing severe operational challenges. The move is driven by fuel shortages, supply chain constraints and a sharp decline in cargo flow from ports. In an advisory to being on, the Indian Transporters' Welfare Association (ITWA) urged customers and trade partners to keep long-term freight contracts in force and to allow shipments to move on mutually agreed spot market rates.

MGL offers CNG for transport across GAs in Maharashtra, Karnataka

The Hindu Bureau
MUMBAI

Maharashtra Gas Ltd. (MGL), a City Gas Distributor (CGD) under the state-owned Gas (CNG) for transport across its geographical areas (GAs) in Maharashtra and Karnataka. In addition, the company announced offers for its domestic and commercial CNG consumers, aimed at encouraging the use and adoption of CNG.

In line with the Natural Gas (Supply Regulation) Order 2022, domestic CNG and CNG have been recognised as the highest priority

dependable solutions that support households and business establishments alike, the company said. Anu Shringhal, Managing Director, MGL, said, "At MGL, we remain committed to seamless delivery of CNG and are working continuously to enhance our efforts to meet the ever-changing needs of our customers. These initiatives and benefits reflect our vision and belief of expanding the reach of natural gas, which is essential for our nation's transition to cleaner fuels."

MGL said it will continue to strengthen its infrastructure and customer engagement efforts to ensure reliable supply and improved service delivery across all its geographical areas.

MSL mulls ₹10,189-cr. capacity expansion

The Hindu Bureau
MUMBAI

The board of Maruti Suzuki India Ltd. (MSIL) approved addition of first phase of capacity of 2,50,000 vehicles per annum at Kharaj Industrial Estate in Gujarat (KHEIP) with an investment of ₹10,189 crore which will be met via external accruals.

The additional capacity would help meet demand growth, including exports.

Common Infrastructure Trust
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Nasscom honours 25 SMEs for innovation

The Hindu Bureau
BENGALURU

India's technology small and medium enterprises (SMEs) are currently at a pivotal moment, actively re-imagining capabilities and redefining talent strategies for an evolving world, said Srikanth Srinivasan, VP and head, membership and outreach at Nasscom on Tuesday.

The honorees on Tuesday recognised 25 small and medium enterprises (SMEs) for their significant contributions to India's technology SME ecosystem. These enterprises, winners of the 4th edition of the SME Ink award 2024-2026, were recognised for excellence, innovation and resilience.



MGL unveiled customer-focused initiatives to boost CNG adoption in the CNG, including offering free CNG worth ₹500 to all new registrations and from March

JSL starts Indonesia steel melt shop

The Hindu Bureau
MUMBAI

India Stainless Ltd. (ISL) said it commissioned the ₹2 billion tonne per annum (MTPA) stainless steel melt shop (SMS) in Indonesia, developed through the company's joint venture, ahead of its Picked (GHA) line and 0.17 MTPA Cold Rolling capacity in Jagor and Cidahu by Q3FY27 respectively.

This development is part of the earlier announced outlay of ₹1,900 crore. To further boost capacity, they operated an earmarked 5000 crore at Hwar and Kheangrup, which are expected to be commissioned by Q3FY28.

Total capacity

Once all downstream expansion projects are commissioned, the total Cold Rolling capacity will account for 64% of the total melt capacity. With this concurrent expansion, the company is looking to achieve a sales volume of

3.8 MTPA by FY28.

Abhyuday Jindal, Managing Director, India Stainless said, "The commissioning of the Indonesia facility, along with a significant push in downstream projects, reflects our commitment to long-term growth and integrated approach to production."

NCLAT declines interim stay on plea against nod for Adani's bid for JAL

Prerna Trust of India
NEW DELHI

The insolvency appellate tribunal on Tuesday declined any interim stay against the Vedanta Group's plea against the order passed by the NCLAT approving ₹4,535 crore bid by Adani Group's bid for Vedanta's steel plant in JAL. The National Company Law Appellate Tribunal (NCLAT) two-member bench sought a response from the Committee of Creditors (CoC) of JAL within a week. It also directed to list the matter on

HDFC Bank appoints 4 law firms to probe ex-Chairman's resignation

The Hindu Bureau
MUMBAI

HDPC Bank on Tuesday said that it had appointed law firms, reportedly Tlyn and Wadh Ghandy & Co., and an international law firm to investigate and submit a report on the reasons cited by its former part-time Chairman, Anura Chakraborty, in its resignation letter last week.

"Appointed external law firms in a proactive measure taken by the bank to independently look at the aspects mentioned in the letter to ensure an objective and fact-based assessment. This step is keeping in view to ensure statutory benchmark with the highest governance standards that the Bank has practised over decades," the bank said. Law firms "have been asked to provide a report within a reasonable period of time," the bank added. On Tuesday, HDPC Bank shares gained 2.68% to close at ₹76.18 on the BSE.

Truckers invoke force majeure amid fuel shortage, decline in cargo flow

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Assam floats tender for satellites to monitor floods

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Kunal Shankar
Vasudevan Mukunth
CHENNAI

Assam has become the first Indian State to float a tender for a group of earth-observation satellites that it says will strengthen disaster response along the flood-prone Brahmaputra valley and help survey the State's borders.

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■ Chief Minister Biswa Sarma argued that conventional border fencing is inadequate, and real-time satellite monitoring is the sole practical alternative



■ The satellites will be able to scan the same part of the ground once every few hours and map it at high resolution

will operate separately or together, in a constellation. Per the brief, qualifying parties can avail the full EOI for a fee of ₹30,000.

Assuming it's a constellation, the satellites will be able to scan the same part of the ground once every few hours and map it at high resolution – a useful task for disaster response during floods, where the extent of waters can change within hours.

The EOI also doesn't specify the sensors the satellites will carry. But since the State has cloudy weather for almost half the year, the satellites may carry synthetic aperture radars (SAR), whose gaze can pierce clouds and darkness.

Currently, State disaster management agencies seeking satellite data must submit requests to the National Remote Sensing Centre, which will process and fulfill those requests.

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The plan combines small satellites carrying optical and hyperspectral sensors in low-earth orbit to deliver near real-time imagery for agriculture, disaster response, and national security users while being owned and operated by industry.

1. Assam has floated a tender for a group of earth-observation satellites to monitor floods and strengthen disaster response.

असम ने बाढ़ की निगरानी और आपदा-प्रतिक्रिया को मजबूत करने के लिए पृथ्वी-अवलोकन उपग्रहों के एक समूह हेतु टेंडर जारी किया है।

- It is the first Indian State reported to take such a step at the State level.
राज्य स्तर पर ऐसा कदम उठाने वाला यह भारत का पहला राज्य बताया गया है।
- The project is mainly aimed at the flood-prone Brahmaputra valley and border surveillance needs.

यह परियोजना मुख्यतः बाढ़-प्रवण ब्रह्मपुत्र घाटी और सीमा निगरानी की जरूरतों पर केंद्रित है।

2. The mission has been named AssamSAT.

इस मिशन का नाम AssamSAT रखा गया है।

- The plan is to design, build, launch, operate, and eventually transfer the satellites to State ownership.

योजना के अनुसार उपग्रहों का डिजाइन, निर्माण, प्रक्षेपण, संचालन और अंततः राज्य स्वामित्व को हस्तांतरण किया जाएगा।

- The Expression of Interest was reportedly issued by the Assam Science Technology and Environment Council.

रिपोर्ट के अनुसार Expression of Interest असम साइंस टेक्नोलॉजी एंड एनवायरनमेंट काउंसिल द्वारा जारी किया गया।

.....

3. The procurement is for at least five satellites in low-earth orbit.

यह खरीद कम-से-कम पाँच उपग्रहों के लिए है जो निम्न-पृथ्वी कक्षा में होंगे।

- Low-earth orbit is useful because it allows repeated observation of the same area within short intervals.

निम्न-पृथ्वी कक्षा उपयोगी होती है क्योंकि इससे कम समयांतराल में एक ही क्षेत्र का बार-बार अवलोकन किया जा सकता है।

- This is valuable in floods, where water spread can change within hours.

बाढ़ की स्थिति में यह बहुत महत्वपूर्ण है, क्योंकि जल-फैलाव कुछ घंटों में बदल सकता है।

4. The satellites are expected to provide near real-time and high-resolution monitoring.

इन उपग्रहों से near real-time और high-resolution निगरानी की अपेक्षा है।

- They may scan the same ground repeatedly every few hours.

ये कुछ-कुछ घंटों के अंतराल पर एक ही भू-भाग को बार-बार स्कैन कर सकते हैं।

- This can improve flood mapping, embankment monitoring, and rapid response planning.

इससे बाढ़ मानचित्रण, तटबंध निगरानी और त्वरित प्रतिक्रिया योजना बेहतर हो सकती है।

5. The article suggests that the satellites may carry sensors suitable for cloudy conditions, possibly including Synthetic Aperture Radar.

लेख संकेत देता है कि इन उपग्रहों में बादलों वाली परिस्थितियों के लिए उपयुक्त सेंसर हो सकते हैं, संभवतः Synthetic Aperture Radar भी।

- This is important because Assam remains cloudy for a large part of the year.

यह महत्वपूर्ण है क्योंकि असम वर्ष के बड़े हिस्से में बादलों से ढका रहता है।

- SAR is especially useful because it can observe the surface through clouds and even in darkness.

SAR विशेष रूप से उपयोगी है क्योंकि यह बादलों के पार और अंधेरे में भी सतह का अवलोकन कर सकता है।

6. The project is not limited to floods; it also has a security dimension.

यह परियोजना केवल बाढ़ तक सीमित नहीं है; इसका एक सुरक्षा आयाम भी है।

- The State government links it to border monitoring, especially in difficult riverine and char areas.

राज्य सरकार इसे विशेष रूप से कठिन नदीय और चार क्षेत्रों में सीमा निगरानी से भी जोड़ती है।

- The article also mentions possible uses such as tracking drug-trafficking routes and monitoring poaching in Kaziranga.

लेख में नशीले पदार्थों की तस्करी के मार्गों की ट्रैकिंग और काज़ीरंगा में शिकार-रोधी निगरानी जैसे उपयोगों का भी उल्लेख है।

1. Floods in Assam are a long-standing and recurring problem, especially due to the Brahmaputra and Barak river systems.

असम में बाढ़ एक पुरानी और बार-बार आने वाली समस्या है, विशेषकर ब्रह्मपुत्र और बराक नदी तंत्र के कारण।

- **The Brahmaputra carries very high sediment load and frequently changes channel behaviour.**
ब्रह्मपुत्र अत्यधिक गाद वहन करती है और अक्सर अपना नदी-पथ व्यवहार बदलती रहती है।
- **This causes erosion, channel migration, and sudden expansion of floodwaters.**
इससे कटाव, नदी-पथ परिवर्तन और बाढ़ के पानी का अचानक फैलाव होता है।

2. Assam's chars and river islands make flood governance more difficult than in many other States.

असम के चार और नदी-द्वीप बाढ़-प्रबंधन को कई अन्य राज्यों की तुलना में अधिक कठिन बनाते हैं।

- **Population living on chars is highly vulnerable to displacement.**
चारों पर रहने वाली आबादी विस्थापन के प्रति अत्यधिक संवेदनशील होती है।
- **Conventional land-based monitoring is often inadequate in these changing landscapes.**
ऐसे बदलते भू-दृश्यों में पारंपरिक भूमि-आधारित निगरानी अक्सर अपर्याप्त साबित होती है।

Challenges

चुनौतियाँ

- 1. Owning satellites is not enough; the State also needs data-processing and response systems.**
केवल उपग्रहों का स्वामित्व पर्याप्त नहीं है; राज्य को data-processing और response systems भी चाहिए।
- 2. High-quality satellite data must be integrated with ground agencies, district administration, and disaster-response units.**
उच्च-गुणवत्ता वाले satellite data को जमीनी एजेंसियों, जिला प्रशासन और आपदा-प्रतिक्रिया इकाइयों के साथ एकीकृत करना होगा।
- 3. There may also be issues related to cost, maintenance, launch schedules, and long-term operational sustainability.**
लागत, रखरखाव, प्रक्षेपण समय-सारणी और दीर्घकालिक परिचालन स्थिरता से जुड़ी चुनौतियाँ भी हो सकती हैं।
- 4. Data security and civil-military use balance will also matter.**
डेटा सुरक्षा और नागरिक-सुरक्षा उपयोग के संतुलन का प्रश्न भी महत्वपूर्ण रहेगा।

Consider the following statements regarding AssamSAT and satellite-based flood monitoring:

AssamSAT और उपग्रह-आधारित बाढ़ निगरानी के संदर्भ में निम्नलिखित कथनों पर विचार कीजिए:

1. The proposed Assam satellite project is aimed only at flood forecasting and has no security relevance.

प्रस्तावित असम उपग्रह परियोजना केवल बाढ़ पूर्वानुमान के लिए है और इसका कोई सुरक्षा महत्त्व नहीं है।

2. A constellation of low-earth-orbit satellites can improve repeat coverage of the same area within short intervals.

Low-earth-orbit उपग्रहों का constellation कम समयांतराल में एक ही क्षेत्र की बार-बार निगरानी सुधार सकता है।

3. Synthetic Aperture Radar is useful in cloudy conditions and can operate in darkness.

Synthetic Aperture Radar बादलों वाली परिस्थितियों में उपयोगी होता है और अंधेरे में भी कार्य कर सकता है।

Which of the statements given above is/are correct?

उपरोक्त कथनों में से कौन-सा/से सही है/हैं?

A. 2 and 3 only

A. केवल 2 और 3

B. 1 and 2 only

B. केवल 1 और 2

C. 1 and 3 only

C. केवल 1 और 3

D. 1, 2 and 3

D. 1, 2 और 3

RCB sold in \$1.78-bn record-breaking deal

● Acquisition is for both IPL and WPL teams under RCB

FE BUREAU
New Delhi, March 24

IN A LANDMARK deal underscoring the surging valuations of Indian Premier League (IPL) franchises, a consortium led by the Aditya Birla Group and The Times of India Group has agreed to acquire Royal Challengers Bengaluru (RCB) for \$1.78 billion (about ₹16,732 crore), marking one of the biggest ownership changes in the league's history.

The consortium, which also includes Bolt Ventures and Blackstone's perpetual private equity strategy (BXPE), has signed a definitive agreement with United Spirits Ltd (USL), a subsidiary of Diageo, to acquire 100% of the franchise. The deal covers both the men's IPL team and the women's Women's Premier League (WPL) side, underscoring the growing value of multi-team sports assets in India.

Under the proposed ownership structure, Arjuman Vikram Birla, director at Aditya Birla Group, will take over as chairman of the franchise, while Satyan Gajwani of The Times of India Group will serve as vice-chairman. David Blitzer, founder of Bolt Ventures, and Viral Patel, CEO of BXPE, are also part of the investor group.

The transaction is subject to customary approvals, including those from the Board of Control for Cricket in India (BCCI) and the Competition Commission of India (CCI), among other regulatory clearances. Once completed, the deal will transfer control of one of the IPL's most valuable and widely followed franchises to a consortium with strong credentials across business, media and global sports investments.

ROYAL TAKEOVER

■ RCB set for \$1.78 bn sale

■ Deal value ₹16,732 cr

■ Among biggest IPL ownership changes

■ Led by Aditya Birla, Times Group

■ Consortium includes Bolt, Blackstone

■ 100% stake to be acquired



■ Seller: United Spirits

■ USL is a Diageo subsidiary

■ Covers IPL and WPL teams

Kal Somani-led group wins \$1.63-bn bid for Rajasthan Royals

IPL FRANCHISE RAJASTHAN Royals is set to be sold to US-based Kal Somani-led consortium for a whopping \$1.63 billion (about ₹15,290 crore).

The Somani-led consortium includes Rob Walton from the Walmart family and Hamp family (Ford). Somani is an Arizona-based tech entrepreneur who has founded IntraEdge, Truyo AI and Academician. The other contenders were Times Internet-led consortium, the Aditya Birla Group and the Mittal family led by ArcelorMittal CEO Aditya Mittal.

The sale of Rajasthan Royals is subject to approval from the BCCI and will come into effect after the 2026 edition. British-Indian Manoj Badale held a 65% stake in the Royals.

"Kal is an existing investor in the franchise. The deal is



subject to approval from the BCCI and will be signed soon. The price of \$1.63 billion reflects how far the IPL has come as a brand," a well-placed source said.

PTI

Strategic oil reserves for just six days; funds underspent

SAURAV ANAND
New Delhi, March 24

AS THE WEST Asia conflict disrupts critical energy flows, India's strategic petroleum reserves (SPR) have just six days of crude stockpiles.

Budget data show that against an allocation of ₹5,876 crore in the current financial year to fill and expand the SPR, the government is likely to spend only ₹1,039 crore, while provisioning for the next fiscal



has been cut to just ₹200 crore.

The underspending comes at a time when the Strait of Hormuz — through which nearly 40% of India's crude

imports are routed — has been severely impacted by geopolitical tensions.

In a written reply to the Rajya Sabha, Minister of State for Petroleum and Natural Gas Suresh Gopi said, "Currently, ISPR (Indian Strategic Petroleum Reserves Limited) has around 3.372 million tonne of crude stock available which is around 64% of the total storage capacity."

Continued on Page 10

Strategic crude reserves ...

THE COUNTRY'S THREE underground reserves at Visakhapatnam, Mangaluru and Padur can together hold 5.33 million tonne (MT), translating to about nine-and-a-half days of crude cover at full capacity. With inventories currently at around two-thirds, the effective buffer is significantly lower.

Gopi noted that reserves are not static. "The actual reserve is a dynamic number depending on the stocks and actual consumption, both of which are not static," he said.

For a country that imports over 88% of its crude requirements, the gap is significant. Even though India's total oil and fuel stockpiles — including commercial inventories — stand at about 74 days, this remains below the 90-day benchmark recommended by the International Energy Agency (IEA).

Audit findings have already flagged structural weaknesses in the system.

The Comptroller and Auditor General (CAG) observed that storage capacity of 5.33 MT provides only 7.88 days of import cover (March 2024) against the 19 days of import cover as envisaged in Phase-I of the Indian Strategic Petroleum Reserves. The audit noted that "significant delays and consequent cost overruns were witnessed in construction and creation of strategic oil reserves" and that "utilisation of caverns has also been sub-optimal."

Expansion plans have also lagged. In July 2021, the government approved two additional SPR facilities — 4 MT at Chandikhol in Odisha and 2.5 MT at Padur in Karnataka — expected to add around 12 days of crude cover.



It recommended that authorities "ensure that the caverns are utilised fully to provide the cover against the oil shortage event."

The current situation marks a stark contrast to 2020, when India moved aggressively to secure energy security at low cost. Taking advantage of a collapse in global oil prices during the Covid-19 pandemic, the government purchased 16.71 million barrels of crude in April-May 2020 at an average price of \$19 per barrel, compared with about \$60 per barrel earlier that year. The move resulted in savings of \$685.11 million (₹5,069 crore) and allowed India to fully fill its strategic reserves.

Since then, however, no comparable replenishment has been undertaken, leaving reserves partially filled despite rising geopolitical risks.

Expansion plans have also lagged.

In July 2021, the government approved two additional SPR facilities — 4 MT at Chandikhol in Odisha and 2.5 MT at Padur in Karnataka — expected to add around 12 days of crude cover.

However, progress has been slow, with the Padur expansion now slated for completion only by August 2030. The Chandikhol project remains stalled, with land acquisition yet to be resolved. Officials said efforts are underway to accelerate progress. "The government is actively expediting both filling and expansion of strategic reserves, but these are complex projects involving land, logistics and procurement cycles," said a senior official, requesting anonymity.

Analysts say the current situation underscores the need for a more proactive approach.

"At a time when geopolitical risks are rising, maintaining reserves at sub-optimal levels increases vulnerability," said an energy analyst. "Strategic reserves are meant for supply security, not timing the market. The lesson from 2020 was clear — act when opportunities arise."

Prime Minister Narendra Modi on March 23 informed the Lok Sabha that India held over 5.3 million tonne of SPR and was working to expand it further, alongside diversifying crude sourcing across 41 countries. However, the ongoing crisis has brought the spotlight back on preparedness.

With supply routes under stress and import dependence high, India's partially filled reserves and delayed expansion plans risk weakening its energy security buffer — even as demand continues to grow.

1. India's strategic petroleum reserves are currently much lower than what a major oil-importing country ideally needs in a crisis.

संकट की स्थिति में भारत जैसे बड़े तेल-आयातक देश की आदर्श आवश्यकता की तुलना में भारत के सामरिक पेट्रोलियम भंडार अभी काफी कम हैं। [Press Information... +2](#)

- The news report says the effective crude cover from India's strategic reserves is only about six days.

समाचार रिपोर्ट के अनुसार भारत के सामरिक भंडार से प्रभावी कच्चे तेल का कवरेज केवल लगभग छह दिनों का है।

[The Financial Exp... +1](#)

- This becomes serious when West Asia tensions threaten oil flows and shipping routes such as the Strait of Hormuz.

यह स्थिति तब और गंभीर हो जाती है जब पश्चिम एशिया में तनाव तेल प्रवाह और Strait of Hormuz जैसे समुद्री मार्गों को प्रभावित करता है। [The Financial Exp... +1](#)

2. India's three existing underground strategic reserves are located at Visakhapatnam, Mangaluru, and Padur.

भारत के तीन मौजूदा भूमिगत सामरिक भंडार विशाखापत्तनम, मंगलुरु और पादुर में स्थित हैं। [Press Information... +1](#)

- Their total installed capacity is 5.33 million metric tonnes.

इनकी कुल स्थापित क्षमता 5.33 मिलियन मीट्रिक टन है। [Press Information... +1](#)

- The minister stated that only around 3.372 million tonnes of crude were available, which is about 64% of total storage capacity.

मंत्री ने बताया कि इनमें केवल लगभग 3.372 मिलियन टन कच्चा तेल उपलब्ध था, जो कुल भंडारण क्षमता का लगभग 64% है। [ETEnergyworld.c... +1](#)

3. The article's main concern is not only low reserves, but also under-spending of allocated funds.

लेख की मुख्य चिंता केवल कम भंडार नहीं, बल्कि आवंटित धन का पूरा उपयोग न होना भी है।

The Financial Exp... +2

- For 2025–26, a large capital allocation had been made for strategic oil reserves, but the revised spending was sharply reduced.

2025–26 के लिए सामरिक तेल भंडार हेतु बड़ा पूंजीगत आवंटन किया गया था, लेकिन संशोधित व्यय में इसे बहुत घटा दिया गया।

PRS Legislative R... +1

- For 2026–27, only ₹200 crore was provided in the budget for ISPR Phase II.

2026–27 के लिए ISPR Phase II हेतु बजट में केवल ₹200 करोड़ का प्रावधान किया गया।

India Budget +1

4. This indicates that India's expansion of strategic reserves is moving slowly despite growing geopolitical risks.

यह दर्शाता है कि बढ़ते भू-राजनीतिक जोखिमों के बावजूद भारत में सामरिक भंडार का विस्तार धीमी गति से चल रहा है।

The Financial Exp... +2

- The proposed Phase-II expansion includes Chandikhol in Odisha and an additional facility at Padur.

प्रस्तावित Phase-II विस्तार में ओडिशा के चांदीखोल और पादुर में एक अतिरिक्त सुविधा शामिल है।

India Budget +1

- But delays in land acquisition, project execution, procurement, and logistics have slowed progress.

लेकिन भूमि अधिग्रहण, परियोजना क्रियान्वयन, खरीद प्रक्रिया और लॉजिस्टिक्स में देरी ने प्रगति को धीमा कर दिया है।

The Indian Express +1

5. Strategic petroleum reserves are emergency crude stockpiles maintained by governments for supply shocks.

सामरिक पेट्रोलियम भंडार ऐसे आपातकालीन कच्चे तेल के स्टॉक होते हैं जिन्हें सरकारें आपूर्ति संकट के समय के लिए रखती हैं।

Press Information... +1

- They are different from normal commercial stocks held by oil companies for routine refining and distribution.

ये सामान्य वाणिज्यिक भंडारों से अलग होते हैं, जिन्हें तेल कंपनियाँ नियमित रिफाइनिंग और वितरण के लिए रखती हैं।

The Indian Express +1

- Their purpose is energy security, not routine market trading or price speculation.

इनका उद्देश्य ऊर्जा सुरक्षा होता है, न कि सामान्य बाज़ार व्यापार या मूल्य सट्टा।

The Indian Express +1

6. India's vulnerability is high because it imports the bulk of its crude oil requirement.

भारत की संवेदनशीलता अधिक है क्योंकि वह अपनी कच्चे तेल की आवश्यकता का अधिकांश हिस्सा आयात करता है।

The Indian Express +1

- Official statements cited in reports indicate that India imports more than 88% of its crude requirement.

रिपोर्टों में उद्धृत आधिकारिक बयानों के अनुसार भारत अपनी कच्चे तेल की आवश्यकता का 88% से अधिक आयात करता है।

The Indian Express +1

- Therefore, any disruption in sea lanes, producer-region conflict, sanctions, or freight insurance can affect India quickly.

इसलिए समुद्री मार्गों में बाधा, उत्पादक क्षेत्रों में संघर्ष, प्रतिबंध या माल-बीमा संबंधी जोखिम भारत को शीघ्र प्रभावित कर सकते हैं।

The Indian Express +1

Economic importance

आर्थिक महत्त्व

1. **Low strategic reserves can expose India to inflationary shocks if international crude prices rise suddenly.**

यदि अंतरराष्ट्रीय कच्चे तेल की कीमतें अचानक बढ़ें तो कम सामरिक भंडार भारत को मुद्रास्फीति संबंधी झटकों के प्रति अधिक खुला छोड़ सकते हैं। [The Indian Express +1](#)

2. **Higher oil prices affect transport costs, fertilizers, LPG, diesel, petrol, aviation fuel, and overall macroeconomic stability.**

ऊँचे तेल मूल्य परिवहन लागत, उर्वरक, एलपीजी, डीजल, पेट्रोल, विमानन ईंधन और समग्र व्यापक आर्थिक स्थिरता को प्रभावित करते हैं। [The Indian Express](#)

3. **Thus SPRs are not just an energy-sector issue; they are linked with fiscal pressure, current account balance, and inflation management.**

इस प्रकार SPR केवल ऊर्जा-क्षेत्र का मुद्दा नहीं है; यह राजकोषीय दबाव, चालू खाते के संतुलन और मुद्रास्फीति प्रबंधन से भी जुड़ा है। [The Indian Express](#)

1. SPR means government-controlled emergency crude stockpile.

SPR का अर्थ है सरकार-नियंत्रित आपातकालीन कच्चे तेल का भंडार। [Press Information...](#)

2. Commercial stocks are different from strategic stocks.

वाणिज्यिक भंडार और सामरिक भंडार अलग-अलग होते हैं। [The Indian Express +1](#)

3. India's current operational SPR sites are Visakhapatnam, Mangaluru, and Padur.

भारत के वर्तमान परिचालित SPR स्थल विशाखापत्तनम, मंगलुरु और पादुर हैं। [Press Information... +1](#)

4. The International Energy Agency recommends around 90 days of oil stocks for member countries, but India is not an IEA member and remains below that benchmark even when commercial stocks are added.

अंतरराष्ट्रीय ऊर्जा एजेंसी सदस्य देशों के लिए लगभग 90 दिनों के तेल भंडार की अनुशंसा करती है, लेकिन भारत IEA का सदस्य नहीं है और वाणिज्यिक भंडार जोड़ने पर भी उस मानक से नीचे रहता है। [The Indian Express +1](#)

5. SPR is mainly crude oil storage, not finished petroleum products alone.

SPR मुख्यतः कच्चे तेल का भंडारण है, केवल तैयार पेट्रोलियम उत्पादों का नहीं। [Press Information... +1](#)

Consider the following statements regarding India's Strategic Petroleum Reserves:

भारत के Strategic Petroleum Reserves के संदर्भ में निम्नलिखित कथनों पर विचार कीजिए:

1. Strategic Petroleum Reserves are meant to act as a buffer against short-term supply disruptions.

Strategic Petroleum Reserves का उद्देश्य अल्पकालिक आपूर्ति व्यवधानों के विरुद्ध buffer के रूप में काम करना है।

2. India's currently operational strategic crude storage sites are at Visakhapatnam, Mangaluru, and Padur.

भारत के वर्तमान परिचालित सामरिक कच्चे तेल भंडारण स्थल विशाखापत्तनम, मंगलुरु और पादुर में हैं।

3. Strategic reserves and commercial oil stocks are exactly the same in nature and purpose.

सामरिक भंडार और वाणिज्यिक तेल भंडार प्रकृति और उद्देश्य में बिल्कुल समान होते हैं।

Which of the statements given above is/are correct?

उपरोक्त कथनों में से कौन-सा/से सही है/हैं?

A. 1 and 2 only

A. केवल 1 और 2

B. 2 and 3 only

B. केवल 2 और 3

C. 1 and 3 only

C. केवल 1 और 3

D. 1, 2 and 3

D. 1, 2 और 3

The Degree Of Crisis Is Worst In India

Jobless graduates are hardly unique to India. But the problem is at its most acute here, among economies of note. A recent dataset released by Azim Premji University, hit the point home. TOI compares unemployment rates among graduates across countries. Point to note: comparable data is not always available, for example, for US and China. But plenty of studies show China, too, is facing a crisis of jobless graduates. A paper by Jian Yu in the journal, Comparative Education, notes that unemployment rates in the 16-24 age group hit 18.9% in Aug 2025. That's still much better than India's, when put against the — roughly comparable — 20-25 age group, but it's still grim, by China's standards. In US, per data from its Labour Bureau and various Fed stud-

ies, unemployment among recent graduates (22-27 years) was between 5.3% and 5.8% in early 2026. For American commentators, this is bad news, since the rate has almost doubled. But, clearly, the US is far better off, compared to even EU. Interestingly, there are two classes in Europe, on jobless graduates, with Spain, Italy, Portugal, Greece, and even France, in the bottom half, and Germany and Netherlands doing much better. No one, to reemphasise, is doing as badly as India — where nearly two out of every five young graduates don't have a job.



UNEMPLOYMENT RATES AMONG THOSE WHO ARE GRADUATE AND ABOVE (2024)

Country/Region	20 to 24 years	25 to 29 years
European Union - 27 countries	12%	6.5%
Euro area - 21 countries	12	7
India	39	20
Türkiye	25	14
Greece	27	13
Spain	19.3	11.4
Italy	14.4	9.2
France	12.3	7.5
Portugal	18	7.4
Sweden	15.3	6.1
Germany	5.2	3.9
Netherlands	7.6	3.6

Source: European Commission, State of Working Report 2026, Azim Premji University

Harish Rana, first to be allowed passive euthanasia in India, dies

Death In 'Natural Course' Within 13 Days Of SC Order

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New Delhi: Harish Rana, the first patient in India to be permitted passive euthanasia under a Supreme Court order, passed away on Tuesday after spending 13 years in a vegetative state. The end came at 4.10pm at AIIMS, with family members by his side, marking the culmination of a legal battle over the right to die with dignity.

Rana, 31, had been under the care of a specialised palliative team at the institution since March 14. Doctors said his condition began deteriorating Tuesday morning and the end was medically expected. His death followed withdrawal of life-sustaining support—prima-

13-YEAR ORDEAL

➤ **Harish Rana, a final year BTech student, suffered severe brain injury in 2013** after falling off the fourth floor of his PG accommodation



➤ **Spent 13 years in vegetative state, cared for by his parents** at their home

➤ **On March 11, SC allowed passive euthanasia** after his parents asked that he be allowed to die with dignity

rily artificial hydration and feeding — in line with the Supreme Court's directive.

"His passing followed a natural course. We provided only comfort care, without any active medical intervention. There was no artificial hydration or feeding, and no attempt was made to revive him through medication or CPR," an AIIMS doctor said, adding that he remained

comfortable over the last 10 days with no visible distress.

"He passed away peacefully." His family members drew comfort from seeing him at ease, the medical team said. Media cell in-charge Prof Rima Dada said Rana was admitted to the palliative oncology unit (IRCH), led by Dr (Prof) Seema Mishra, HoD, onco-anaesthesia.

On March 11, the Supreme Court allowed Rana to exercise his "right to die with dignity", noting there had been no improvement in his condition for 13 years and that the obligation to continue treatment does not hold when there is no hope of recovery. He was shifted from his Ghaziabad home to AIIMS for palliative care three days later. Harish's life took a tragic turn in 2013 when he fell from the fourth floor of his paying guest accommodation in Kharar and suffered severe brain injury.

► **Continued on P 11**

SC grants full pension to women denied permanent commission

Move To Benefit Hundreds Of SSC Officers

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New Delhi: In what will benefit hundreds of women short service commission officers, Supreme Court Tuesday said arbitrariness in assessment of their ACRs, written at a time when they were ineligible for permanent commission (PC), resulted in unfair denial of PC and ordered the forces to pay full pension to them.

Six years after the landmark judgment making women short service commission officers (WSSCOs) eligible for PC, a bench of CJI Surya Kant and Justices Ujjal Bhuyan and N K Singh said, "ACRs (annual confidential-SSCOs reports) of appellant-SSCOs were authored with the assumption they would never undergo any substantive career progression, owing



SC said arbitrariness in assessment of women short service commission officers' ACRs, written at a time when they were ineligible for permanent commission, resulted in unfair denial of permanent commission to them

to their ineligibility for PC for the initial 10 years of service." Writing separate judgments for Army, Navy and IAF, CJI Kant said, "Since the avenue for PC was opened to them much later, this presumption undermined the entire assessment of their 'suitability' for any career progression undertaken prior to that and, adversely affected their overall merit in the consideration for PC.

"We find that denial of PC to WSSCOs was not merely the outcome of individual assessments, but the consequence of

a systemic framework rooted in assumptions that entrenched disadvantages in career progression." SC made the comment after accepting majority of the submissions by amicus curiae and senior advocate Rekha Palli.

Invoking its extraordinary powers under Article 142 of Constitution, the SC said women SSCOs who have moved the apex court and who have been released from service during pendency of the litigation, "shall be deemed to have completed substantive quali-

fying service of 20 years and shall be entitled to pension and all consequential benefits, except arrears of pay, on the basis that they have completed such minimum service".

"The pension shall be fixed on the basis of the date of completion of deemed service of 20 years, but arrears thereof, if any, shall be paid to the WSSCOs only with effect from Jan 1, 2025," it said.

"All WSSCOs who are continuing in service by virtue of SC orders dated May 9 and May 19 last year, and who have fulfilled the minimum cut-off grade of 60% in regular selection boards held in 2020 and 2021, shall be entitled to permanent commission, subject to their meeting the medical criteria and on receiving disciplinary and vigilance clearance." The bench said that for all future selection boards, the armed forces "shall issue appropriate general instructions, prior to the conduct of such board, laying down the vacancies available in each branch/stream for each batch..."

Topic	Main point	Added facts for exam
Case outcome	SC granted full pensionary benefits to women SSC officers denied Permanent Commission (PC).	Pension in such defence service cases generally needs 20 years of qualifying service ; the Court deemed eligible women officers to have completed it for relief. News On Air +1
Who benefited	Women SSCOs of the Army, Navy and Air Force affected by unfair PC denial.	The ruling is important because it covers all three services , making it a broader gender-justice judgment in defence services. News On Air +1
Why SC intervened	The Court found arbitrariness and bias in the assessment system, especially in ACRs/merit evaluation.	ACR = Annual Confidential Report . In service law, ACRs heavily influence promotion, empanelment and career progression. The Times of India +2
Core reasoning	SC said women were assessed at a time when they were effectively treated as ineligible for long-term progression, which hurt their merit position later.	This is a classic example of indirect discrimination : a formally neutral system producing unequal results because of past exclusion. The Economic TL... +2
Nature of discrimination	SC called it systemic / institutional discrimination , not merely isolated unfairness.	In equality jurisprudence, systemic discrimination means disadvantage built into the structure, rules or practices of an institution. Live Law +2
Constitutional basis	SC invoked Article 142 to do "complete justice."	Article 142 empowers the Supreme Court to pass any decree/order necessary for complete justice in a matter before it. This article is often asked in polity and judiciary questions. Hindustan Times +1

Permanent Commission relief	SC also granted/cleared PC relief for women officers still in service who met relevant criteria.	Coverage indicates officers meeting the 60% cut-off in 2020/2021 boards, along with medical and vigilance conditions, were to be considered/benefited. The Tribune +1
Selection boards	The ruling discussed officers considered in 2019, 2020 and 2021 selection boards.	These years are important because the dispute arose during the transition period after women became eligible for PC. Hindustan Times +1
Minimum service issue	Many women officers had served around 14 years but were denied PC, which would otherwise have allowed continuity toward pensionable service.	In defence personnel matters, the difference between SSC tenure and PC has major consequences for career length, rank progression and pension . News On Air +1
Earlier landmark background	This ruling comes about six years after the landmark judgment that opened PC avenues for women SSC officers.	The earlier landmark case is Secretary, Ministry of Defence v. Babita Puniya (2020) , where the SC upheld women officers' right to Permanent Commission in the Army. Live Law +1
Broader significance	The judgment advances gender equality in the armed forces .	Relevant constitutional articles: Article 14 (equality before law), Article 15 (non-discrimination), and Article 16 (equality of opportunity in public employment). This is a strong polity-governance linkage for exams.
Administrative implication	Armed forces were told to issue proper general instructions for future boards.	This means future selection processes must reduce structural bias and ensure fair vacancy disclosure and criteria application. The Tribune +1
Exam relevance	Important for Polity, Judiciary, Women empowerment, Defence reforms, and Governance .	Can be used in Mains answers under: gender justice, institutional reform, military modernization, and constitutional morality.

Area	Fact
SSC	Short Service Commission means service for a limited tenure, unlike a full career track under Permanent Commission.
PC	Permanent Commission allows officers to serve till retirement, with broader promotion avenues and pension eligibility.
ACR	Annual Confidential Report is a performance appraisal document used in service matters.
Article 142	Allows the Supreme Court to pass orders necessary for complete justice .
Equality link	The judgment is an example of substantive equality, where the Court looked at real effects , not just formal rules.
Defence reform angle	The case shows that military institutions are subject to constitutional scrutiny when service rules create unfair discrimination.

Guj 2nd state after U'khand to pass UCC bill

Gandhinagar: The Gujarat assembly on Tuesday passed the Gujarat Uniform Civil Code Bill 2026, proposing a common legal framework to govern marriage, divorce, succession and live-in relationships irrespective of religion or community.

With the governing BJP enjoying an overwhelming majority of 161 out of 182 seats in assembly, the bill was passed with a majority vote.

Gujarat becomes the second state, after Uttarakhand, to pass a bill to enforce a uniform civil code.

None of the provisions of the uniform civil code bill will apply to members of Scheduled Tribes (STs). TNN

World Air Quality Report 2025 b

Topic	Key Information	Added Facts for Exam	
Report name	World Air Quality Report 2025 by IQAir	IQAir is a Swiss air-quality technology company that compiles annual PM2.5 rankings using monitoring-station data. IQAir	
Global rank of Pakistan	Pakistan ranked 1st among the world's most polluted countries in 2025	This means Pakistan had the highest annual average PM2.5 concentration among ranked countries in the report. Reuters +1	
India's rank	India ranked 6th globally	India's national annual average PM2.5 was 48.9 µg/m³ , which is far above the WHO annual guideline of 5 µg/m³ . The Times of India +1	
Top polluted countries mentioned	Pakistan, Bangladesh, Tajikistan, Chad, DR Congo; India at 6th	South Asia remains a major pollution hotspot because of vehicular emissions, coal use, industrial pollution, crop residue burning, dust, and winter inversion conditions . Reuters +1	
Most polluted city in world	Loni, India	Loni recorded an annual PM2.5 concentration of 112.5 µg/m³ , over 22 times the WHO guideline. The New Indian E... +1	
Other highly polluted cities	Hotan (China) ranked next; Delhi ranked 4th globally in the cited coverage	India hosted 3 of the top 4 most polluted cities in the 2025 report coverage cited here. The New Indian E... +1	
Delhi's status	Delhi remained the world's most polluted capital city	It has held this position for 8 consecutive years , showing the persistent urban air-pollution crisis in the NCR region. The Times of India	
Pollutant used for ranking	PM2.5	PM2.5 means particulate matter with diameter 2.5 micrometres or less ; it can penetrate deep into the lungs and bloodstream, making it especially dangerous. Reuters +1	

WHO benchmark	WHO annual PM2.5 guideline is 5 µg/m³	Countries or cities above this level are considered to exceed the safe annual limit. This benchmark is very important for UPSC and state PCS environment questions. Reuters +1
Data coverage	Report used data from 9,446 cities in 143 countries/territories	Large-scale monitoring makes it one of the most cited global air-quality datasets, though coverage varies by country depending on monitoring density. IQAir +1
Share meeting WHO norm	Only about 14% of cities met the WHO PM2.5 guideline in 2025	This shows that air pollution is a global public-health issue , not only a South Asian problem. IQAir +1
Main causes of air pollution	Transport emissions, industry, coal burning, construction dust, crop burning, wildfire smoke	In India, seasonal spikes are often linked with post-harvest burning , adverse winter meteorology, and high urban traffic density. The Times of India +1
Public health impact	Long-term exposure raises risk of respiratory disease, heart disease, stroke, and premature death	Children, elderly people, and those with pre-existing illness are the most vulnerable groups. Air pollution is both an environmental and a public-health governance issue. IQAir +1
India-specific exam angle	India is not the most polluted country in 2025, but it still has some of the world's most polluted cities	This distinction is important in prelims-type MCQs: country rank and city rank are different. Reuters +1
Geography angle	Pollution hotspots are concentrated in South Asia	Basin topography, winter inversion, dense population, brick kilns, traffic corridors, and industrial clusters worsen pollution accumulation. This is relevant for geography and environment answers. Health Policy Wat... +1

Prathmesh Kher

QUESTION 1

The execution of Bhagat Singh, Sukhdev Thapar and Shivaram Rajguru followed their conviction in which case related to the assassination of John Saunders in Lahore?

QUESTION 2

The assassination of Saunders was intended as retaliation for the police assault on which nationalist leader who later died of injuries sustained during a lathi charge?

QUESTION 3

In which prison were the three revolutionaries executed?

QUESTION 4

Which pact between nationalist leaders and the British government was signed shortly before the executions in 1931?

QUESTION 5

What was the title of the editorial published after the executions, by B. R. Ambedkar in the Marathi weekly Janata, on April 13, 1931?



Identify this Indian revolutionary, commander-in-chief of the Hindustan Socialist Republican Association, who died in a gun battle with the British police at Alfred Park in 1931. PUBLIC DOMAIN

Questions and answers to the previous day's daily quiz: 1.

The execution of Bhagat Singh, Sukhdev Thapar and Shivaram Rajguru followed their conviction in this case related to the assassination of John Saunders in Lahore. **Ans: Lahore Conspiracy Case**

Conspiracy Case

2. The assassination of Saunders was intended as retaliation for the police assault on this nationalist leader who later died of injuries sustained during a lathi charge. **Ans: Lala Lajpat Rai**

3. The three revolutionaries were executed in this prison. **Ans: Lahore Central Jail in Lahore**

4. This pact between nationalist leaders and the British government was signed shortly before the executions in 1931. **Ans: Gandhi-Irwin Pact**

Ans: Gandhi-Irwin Pact

5. The title of the editorial published after the executions, by B. R. Ambedkar, in the Marathi weekly Janata on April 13, 1931? **Ans: Teen Bali (Three Victims)**

Teen Bali (Three Victims)

Visual: The Indian revolutionary, commander-in-chief of the Hindustan Socialist Republican Association, who died in a gun battle with the British police at Alfred Park in 1931. **Ans: Chandra Shekhar Azad**

Chandra Shekhar Azad

Early Birds: C. Saravanan | Sudhir Thapa | Parimal Das | Prem Nath Tiwari | Pranav Shailesh K.



Word of the day

Boisterous:

noisy and lacking in restraint or discipline

Synonyms: rambunctious, unruly

Usage: *The crowd grew boisterous as the match reached its final moments.*

Pronunciation:

<https://newsth.live/ZQEJN5>

International Phonetic

Alphabet: /ˈbɔɪstəɪəs/

Word of the day

Wily:

marked by skill in deception

Synonyms: crafty, cunning

Usage: *She proved to be a wily negotiator, securing a better deal than expected.*

Pronunciation: newsth.live/IJnn6E

International Phonetic

Alphabet: /ˈwaɪ.li/



Thank you 😊