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### 05 APRIL 2026

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GS Paper 1: History,

TOPICS COVERED

05 April 2026

05A | A hearth of Sufism  
सूफीवाद का केंद्र

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# A hearth of Sufism

The annual Zool festival in South Kashmir keeps a rich Sufi legacy alive, symbolising victory of light over darkness, while heralding spring after a harsh Himalayan winter



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**T**he Zool festival of Aishmuqam shrine of Baba Zain-ud-Din Wali is a procession of faith and light. Also known as the illumination or torch festival, the Zool is a centuries-old tradition held at the shrine in Anantnag district of southern Kashmir.

At this shrine, located on a hillock overlooking the road to Pahalgam, the famous tourist destination in Kashmir, the annual fire procession symbolises the victory of light over darkness while commemorating the 15th-century Sufi saint Baba Zain-ud-Din Wali, a primary disciple of the renowned mystic Sheikh Noor-ud-Din Wali, also known as Nund Rishi.

This year, the festival was celebrated on April 2.

According to local legend, the saint meditated in a cave at Aishmuqam that was once infested with snakes or, in some versions, terrorised by a demon. His spiritual power eventually cleared the cave, and local people celebrated this

“victory of good over evil” by lighting torches. The procession involves thousands of devotees carrying wooden torches, locally called *mashals* or *phrov*, crafted from special wood gathered from nearby forests. Before the festival, local people refrain from eating or selling meat for three days as a form of spiritual purification.

As the sun sets, a glowing river of fire snakes up the 100-step staircase leading to the hilltop shrine. Participants chant religious hymns and seek blessings, creating a spectacle visible for miles across Anantnag.

The event also marks the *Shab-e-Doom* (the second night of prayers) and serves as a traditional herald of spring and signals farmers to begin sowing paddy after the harsh Himalayan winter.

The Aishmuqam fire procession remains a powerful symbol of Rishi-Sufi culture, drawing people from various faiths to celebrate communal harmony and the enduring legacy of *Sakhi* (the Generous) Zain-ud-Din Wali.



The spark is lit: A man lights a torch outside the cave shrine of the 15th-century saint.

## 05A. A hearth of Sufism सूफीवाद का केंद्र

- The annual Zool festival in South Kashmir keeps a rich Sufi legacy alive, symbolising victory of light over darkness, while heralding spring after a harsh Himalayan winter.  
दक्षिण कश्मीर में आयोजित वार्षिक जूल उत्सव एक समृद्ध सूफी विरासत को जीवित रखता है, जो अंधकार पर प्रकाश की विजय का प्रतीक है, और कठोर हिमालयी सर्दी के बाद वसंत के आगमन का संकेत देता है।
- The Zool festival of Aishmuqam shrine of Baba Zain-ud-Din Wali is a procession of faith and light.  
बाबा जैन-उद-दीन वली के ऐशमुकाम दरगाह का जूल उत्सव आस्था और प्रकाश की एक यात्रा है।
- Also known as the illumination or torch festival, the Zool is a centuries-old tradition held at the shrine in Anantnag district of southern Kashmir.  
इसे प्रकाश या मशाल उत्सव के रूप में भी जाना जाता है, यह जूल एक सदियों पुरानी परंपरा है, जो दक्षिण कश्मीर के अनंतनाग जिले में स्थित इस दरगाह पर आयोजित होती है।
- At this shrine, located on a hillock overlooking the road to Pahalgam, the famous tourist destination in Kashmir, the annual fire procession symbolises the victory of light over darkness while commemorating the 15th-century Sufi saint Baba Zain-ud-Din Wali, a primary disciple of the renowned mystic Sheikh Noor-ud-Din Wali, also known as Nund Rishi.  
इस दरगाह पर, जो पहलगाम जाने वाले मार्ग को देखने वाली एक पहाड़ी पर स्थित है, जो कश्मीर का एक प्रसिद्ध पर्यटन स्थल है, वार्षिक अग्नि जुलूस अंधकार पर प्रकाश की विजय का प्रतीक है और 15वीं सदी के सूफी संत बाबा जैन-उद-दीन वली की स्मृति में आयोजित होता है, जो प्रसिद्ध संत शेख नूर-उद-दीन वली (नुंद ऋषि) के प्रमुख शिष्य थे।
- This year, the festival was celebrated on April 2.  
इस वर्ष, यह उत्सव 2 अप्रैल को मनाया गया।
- According to local legend, the saint meditated in a cave at Aishmuqam that was once infested with snakes or, in some versions, terrorised by a demon.  
स्थानीय किंवदंती के अनुसार, संत ने ऐशमुकाम की एक गुफा में ध्यान किया था, जो कभी सांपों से भरी हुई थी या कुछ कथाओं में राक्षस द्वारा आतंकित थी।
- His spiritual power eventually cleared the cave, and local people celebrated this “victory of good over evil” by lighting torches.  
उनकी आध्यात्मिक शक्ति ने अंततः गुफा को साफ कर दिया, और स्थानीय लोगों ने इस “बुराई पर अच्छाई की जीत” को मशाल जलाकर मनाया।
- The procession involves thousands of devotees carrying wooden torches, locally called *mashals* or *phrov*, crafted from special wood gathered from nearby forests.  
इस जुलूस में हजारों भक्त शामिल होते हैं, जो लकड़ी की मशालें लेकर चलते हैं, जिन्हें स्थानीय रूप से मशाल या फ्रोव कहा जाता है, और ये पास के जंगलों से लाई गई विशेष लकड़ी से बनाई जाती हैं।
- Before the festival, local people refrain from eating or selling meat for three days as a form of spiritual purification.  
उत्सव से पहले, स्थानीय लोग तीन दिनों तक मांस खाने या बेचने से परहेज करते हैं, जो आध्यात्मिक शुद्धिकरण का एक रूप है।
- As the sun sets, a glowing river of fire snakes up the 100-step staircase leading to the hilltop shrine.



जैसे ही सूर्यास्त होता है, आग की एक चमकती हुई नदी 100 सीढ़ियों वाली सीढ़ी से होकर पहाड़ी पर स्थित दरगाह तक पहुंचती है।

- Participants chant religious hymns and seek blessings, creating a spectacle visible for miles across Anantnag.

प्रतिभागी धार्मिक भजन गाते हैं और आशीर्वाद मांगते हैं, जिससे एक ऐसा दृश्य बनता है जो अनंतनाग में मीलों दूर तक दिखाई देता है।

- The event also marks the Shab-e-Doum (the second night of prayers) and serves as a traditional herald of spring and signals farmers to begin sowing paddy after the harsh Himalayan winter.

यह आयोजन शब-ए-दोम (प्रार्थना की दूसरी रात) को भी दर्शाता है और पारंपरिक रूप से वसंत के आगमन का संकेत देता है तथा किसानों को कठोर हिमालयी सर्दियों के बाद धान की बुवाई शुरू करने का संकेत देता है।

- The Aishmuqam fire procession remains a powerful symbol of Rishi-Sufi culture, drawing people from various faiths to celebrate communal harmony and the enduring legacy of Sakhi (the Generous) Zain-ud-Din Wali.

ऐशमुकाम अग्नि जुलूस ऋषि-सूफी संस्कृति का एक शक्तिशाली प्रतीक बना हुआ है, जो विभिन्न धर्मों के लोगों को सामुदायिक सद्भाव मनाने और सखी (उदार) जैन-उद-दीन वली की स्थायी विरासत का सम्मान करने के लिए आकर्षित करता है।

## GS Paper 1: Society

### TOPICS COVERED

05 April 2026

05A	<b>Government's claim of no displacement of tribals a lie: Congress on Nicobar project</b> सरकार का दावा कि आदिवासियों का कोई विस्थापन नहीं हुआ, झूठ है: निकोबार परियोजना पर कांग्रेस
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# Government's claim of no displacement of tribals a lie: Congress on Nicobar project

GS I: Society  
The Hindu Bureau  
NEW DELHI

The Congress on Saturday targeted the Bharatiya Janata Party (BJP)-led Union government over a new draft plan to "relocate" Nicobarese families affected by the Centre's ₹92,000-crore Great Nicobar Island mega-infrastructure project, with Jairam Ramesh, MP, saying that the Centre's past claims of the project not disturbing or displacing local tribal communities were "clearly a lie".

### Concerns ignored

In a social media post, citing *The Hindu's* report on the above-mentioned plan, which has caused confusion and anxiety among locals, the party's general secretary in-charge of communications, Mr. Ramesh, on Saturday, said, "The bulldozer moves on unmindful of the concerns of the local communities.



Jairam Ramesh

But there is a fundamental contradiction here: the [Narendra] Modi Govt. claims that the Great Nicobar infra project will not disturb or displace tribes—then why a relocation plan? Clearly the claim is a lie."

*The Hindu* reported on Saturday that the district administration had prepared a draft relocation plan for local communities affected by the project on Great Nicobar Island, and was pushing to finalise this draft with the Centre's la-

yers having told the Calcutta High Court that it would "demonstrate" consent of the tribal community in 15 days' time.

The project, which was granted Stage-I clearance in 2022, will include a transshipment port, an airport, a power plant, and a township.

### Violation of rights

However, the project's clearances have been challenged before a Bench of the Calcutta High Court, over alleged violations of consent procedures and local tribes' forest rights.

The draft plan's details on where the relocation will take place and who will be relocated has created confusion among the community members in Great Nicobar, who have been demanding to return to their ancestral forest lands on the west coast, from where they had been displaced by the 2004 tsunami.

## 05A. Government's claim of no displacement of tribals a lie:

### Congress on Nicobar project

सरकार का दावा कि आदिवासियों का कोई विस्थापन नहीं हुआ, झूठ है: निकोबार परियोजना पर कांग्रेस

- Government's claim of no displacement of tribals a lie: Congress on Nicobar project.

सरकार का यह दावा कि आदिवासियों का कोई विस्थापन नहीं हुआ, झूठ है: निकोबार परियोजना पर कांग्रेस।

- The Congress on Saturday targeted the Bharatiya Janata Party (BJP)-led Union government over a new draft plan to "relocate" Nicobarese families affected by the Centre's ₹92,000-crore Great Nicobar Island mega-infrastructure project, with Jairam Ramesh, MP, saying that the Centre's past claims of the project not disturbing or displacing local tribal communities were "clearly a lie".

कांग्रेस ने शनिवार को भारतीय जनता पार्टी (BJP) के नेतृत्व वाली केंद्र सरकार को एक नए मसौदा योजना पर निशाना बनाया, जिसमें निकोबारी परिवारों को



“पुनर्वास” करने की बात कही गई है, जो केंद्र की ₹92,000 करोड़ की ग्रेट निकोबार द्वीप मेगा-इन्फ्रास्ट्रक्चर परियोजना से प्रभावित हैं, और सांसद जयराम रमेश ने कहा कि परियोजना से स्थानीय आदिवासी समुदायों को प्रभावित न करने या विस्थापित न करने के केंद्र के पिछले दावे “स्पष्ट रूप से झूठ” थे।

## Concerns ignored चिंताओं की अनदेखी

- In a social media post, citing The Hindu’s report on the above-mentioned plan, which has caused confusion and anxiety among locals, the party’s general secretary in-charge of communications, Mr. Ramesh, on Saturday, said, “The bulldozer moves on unmindful of the concerns of the local communities.  
एक सोशल मीडिया पोस्ट में, उपरोक्त योजना पर The Hindu की रिपोर्ट का हवाला देते हुए, जिसने स्थानीय लोगों में भ्रम और चिंता पैदा कर दी है, पार्टी के संचार प्रभारी महासचिव श्री रमेश ने शनिवार को कहा, “बुलडोजर स्थानीय समुदायों की चिंताओं की अनदेखी करते हुए आगे बढ़ता है।”
- But there is a fundamental contradiction here: the [Narendra] Modi Govt. claims that the Great Nicobar infra project will not disturb or displace tribes— then why a relocation plan?  
लेकिन यहाँ एक मूलभूत विरोधाभास है: [नरेंद्र] मोदी सरकार दावा करती है कि ग्रेट निकोबार इन्फ्रा परियोजना आदिवासियों को न तो परेशान करेगी और न ही विस्थापित— फिर पुनर्वास योजना क्यों?
- Clearly the claim is a lie.”  
स्पष्ट रूप से यह दावा झूठ है।”
- The Hindu reported on Saturday that the district administration had prepared a draft relocation plan for local communities affected by the project on Great Nicobar Island, and was pushing to finalise this draft with the Centre’s lawyers having told the Calcutta High Court that it would “demonstrate” consent of the tribal community in 15 days’ time.  
The Hindu ने शनिवार को रिपोर्ट किया कि जिला प्रशासन ने ग्रेट निकोबार द्वीप पर परियोजना से प्रभावित स्थानीय समुदायों के लिए एक मसौदा पुनर्वास योजना तैयार की है, और इसे अंतिम रूप देने के लिए प्रयास कर रहा है, जिसमें केंद्र के वकीलों ने कलकत्ता उच्च न्यायालय को बताया कि यह 15 दिनों में आदिवासी समुदाय की सहमति “प्रदर्शित” करेगा।
- The project, which was granted Stage-I clearance in 2022, will include a transshipment port, an airport, a power plant, and a township.  
यह परियोजना, जिसे 2022 में स्टेज-1 मंजूरी मिली थी, में एक ट्रांसशिपमेंट पोर्ट, एक हवाई अड्डा, एक पावर प्लांट, और एक टाउनशिप शामिल होंगे।

## Violation of rights अधिकारों का उल्लंघन

- However, the project’s clearances have been challenged before a Bench of the Calcutta High Court, over alleged violations of consent procedures and local tribes’ forest rights.  
हालांकि, इस परियोजना की मंजूरी को कलकत्ता उच्च न्यायालय की एक पीठ के समक्ष चुनौती दी गई है, जिसमें सहमति प्रक्रियाओं और स्थानीय आदिवासियों के वन अधिकारों के उल्लंघन का आरोप लगाया गया है।
- The draft plan’s details on where the relocation will take place and who will be relocated has created confusion among the community members in Great Nicobar, who have been demanding to return to their ancestral forest lands on the west coast, from where they had been displaced by the 2004 tsunami.  
मसौदा योजना में यह विवरण कि पुनर्वास कहाँ होगा और कौन विस्थापित होगा, ने ग्रेट निकोबार के समुदाय के सदस्यों में भ्रम पैदा कर दिया है, जो 2004 की सुनामी के कारण जिस पश्चिमी तट के पैतृक वन क्षेत्रों से विस्थापित हुए थे, वहाँ वापस लौटने की मांग कर रहे हैं।



## GS Paper II: Polity,

### TOPICS COVERED

05 April 2026

#### 05A How did the 'Amaravati Bill' come into place?

'अमरावती बिल' कैसे अस्तित्व में आया?

## How did the 'Amaravati Bill' come into place?

Why has Amaravati been declared the sole capital of A.P.? Why did the A.P. Reorganisation Act need to be amended?

GS II: Polity

V. Raghavendra

MOB

The story so far:

On April 2, Parliament passed the Andhra Pradesh Reorganisation (Amendment) Bill, 2026, to recognise Amaravati as the sole and permanent capital of Andhra Pradesh. There was broad political consensus regarding the passing of the Bill, with even the principal Opposition party, the Congress, extending support to it. Only the YSR Congress Party (YSRCP), which had earlier proposed a three-capital plan for the State, opposed it.

#### What is the background of this Bill?

The undivided State of Andhra Pradesh was bifurcated in 2014 with the passing of the Andhra Pradesh Reorganisation Act, 2014. This facilitated the creation of the State of Telangana and residual Andhra Pradesh. The Act specified that Hyderabad could be used as the capital by both the States for a period not exceeding 10 years, after which Andhra Pradesh had to establish its own capital.

After the National Democratic Alliance (NDA) came to power in Andhra Pradesh in 2014, Chief Minister N. Chandrababu Naidu declared that Amaravati would be the new capital of the State and moved his administration out of Hyderabad. However, the project fell into a limbo after the YSRCP came to power in 2019 and proposed three capitals instead: Visakhapatnam as the executive capital, Amaravati as the legislative capital, and

The Andhra Pradesh government believed that the only way to prevent a future dispensation from shifting or splitting the capital was to amend the Reorganisation Act.

primarily on the ground that the State lacked the legislative competence required to reverse a policy decision taken in 2014-15. The YSRCP government challenged the High Court judgment in the Supreme Court by filing a

Special Leave Petition (SLP). The SLP was pending when the NDA returned to power in the State. The Naidu government filed an affidavit in late 2024 in the apex court, affirming its commitment to develop Amaravati as the capital. The SLP, filed by the YSRCP government, is in the process of being withdrawn, in alignment with the present government's vision of building a greenfield capital.

#### What does the Bill say?

On March 28, 2026, the Andhra Pradesh Legislative Assembly adopted a resolution requesting the Union government to grant statutory recognition to Amaravati as the State's sole capital. The resolution sought an amendment to Section 5 of the Andhra Pradesh Reorganisation Act, 2014, to explicitly name Amaravati as the capital and end the ambiguity caused by previous three-capital proposals. Following the request, the Union government introduced the Andhra Pradesh Reorganisation (Amendment) Bill, 2026.

As mandated by Section 5 of the Andhra Pradesh Reorganisation Act, 2014, Hyderabad served as the joint capital for Telangana and Andhra Pradesh for a decade starting June 2, 2014. This arrangement concluded on June 2, 2024, after which Hyderabad became the exclusive capital of Telangana, leaving Andhra Pradesh to establish a new capital.

The new Bill seeks to declare and notify Amaravati as the sole capital city of Andhra Pradesh with effect from June 2, 2024, by inserting the words "at Amaravati" to Section 5(2) of the 2014 Act and adding the phrase "and Amaravati includes the capital city areas notified under the Andhra Pradesh Capital Region Development Authority Act, 2014" to the explanation to Section 5.

#### Why amend the Andhra Pradesh Reorganisation Act, 2014?

Amending the Act is essential because the genesis of the capital of the successor State of Andhra Pradesh lies in this Central legislation. Amaravati needed to be explicitly recognised as the capital with statutory backing. The State government believed that the only way to prevent a future dispensation from shifting or splitting the capital was to amend the Act.

#### Why has the YSRCP opposed the Bill?

YSRCP MPs said they were not opposed to the Bill declaring Amaravati as the capital, but were unhappy with its "present form," as it allegedly ignores unfulfilled promises, especially with regard to the Land Pooling Scheme. This involves the voluntary contribution of land by farmers in exchange for smaller, developed, and high-value plots, making them partners in the development process. The YSRCP has argued that the interests of farmers who had parted with land for the capital project remain unaddressed. Party member P.V. Midhun Reddy said a clear timeline must be provided for compensating farmers and incorporated into the Bill.

Party (YSRCP), which had earlier proposed a three-capital plan for the State, opposed it. केवल वाईएसआर कांग्रेस पार्टी (YSRCP), जिसने पहले राज्य के लिए तीन-राजधानी योजना प्रस्तावित की थी, ने इसका विरोध किया।

#### What is the background of this Bill?

इस विधेयक की पृष्ठभूमि क्या है?

- The undivided State of Andhra Pradesh was bifurcated in 2014 with the passing of the Andhra Pradesh Reorganisation Act, 2014.

#### 05A. How did the 'Amaravati Bill' come into place?

'अमरावती बिल' कैसे अस्तित्व में आया?

• How did the 'Amaravati Bill' come into place?

'अमरावती बिल' कैसे अस्तित्व में आया?

• Why has Amaravati been declared the sole capital of A.P.?

क्यों अमरावती को आंध्र प्रदेश की एकमात्र राजधानी घोषित किया गया है?

• Why did the A.P.

Reorganisation Act need to be amended?

आंध्र प्रदेश पुनर्गठन अधिनियम में संशोधन की आवश्यकता क्यों पड़ी?

• On April 2, Parliament passed the Andhra Pradesh Reorganisation (Amendment) Bill, 2026, to recognise Amaravati as the sole and permanent capital of Andhra Pradesh.

2 अप्रैल को, संसद ने आंध्र प्रदेश पुनर्गठन (संशोधन) विधेयक, 2026 पारित किया, ताकि अमरावती को आंध्र प्रदेश की एकमात्र और स्थायी राजधानी के रूप में मान्यता दी जा सके।

• There was broad political consensus regarding the passing of the Bill, with even the principal Opposition party, the Congress, extending support to it.

इस विधेयक के पारित होने को लेकर व्यापक राजनीतिक सहमति थी, और मुख्य विपक्षी दल कांग्रेस ने भी इसका समर्थन किया।

• Only the YSR Congress



अविभाजित आंध्र प्रदेश राज्य का 2014 में आंध्र प्रदेश पुनर्गठन अधिनियम, 2014 के पारित होने के साथ विभाजन किया गया।

- This facilitated the creation of the State of Telangana and residual Andhra Pradesh. इससे तेलंगाना राज्य और शेष आंध्र प्रदेश का गठन हुआ।
- The Act specified that Hyderabad could be used as the capital by both the States for a period not exceeding 10 years, after which Andhra Pradesh had to establish its own capital. अधिनियम में निर्दिष्ट किया गया कि हैदराबाद को दोनों राज्यों द्वारा अधिकतम 10 वर्षों तक राजधानी के रूप में उपयोग किया जा सकता है, जिसके बाद आंध्र प्रदेश को अपनी स्वयं की राजधानी स्थापित करनी होगी।
- After the National Democratic Alliance (NDA) came to power in Andhra Pradesh in 2014, Chief Minister N. Chandrababu Naidu declared that Amaravati would be the new capital of the State and moved his administration out of Hyderabad. 2014 में राष्ट्रीय जनतांत्रिक गठबंधन (NDA) के सत्ता में आने के बाद, मुख्यमंत्री एन. चंद्रबाबू नायडू ने घोषणा की कि अमरावती राज्य की नई राजधानी होगी और प्रशासन को हैदराबाद से स्थानांतरित कर दिया।
- However, the project fell into a limbo after the YSRCP came to power in 2019 and proposed three capitals instead: Visakhapatnam as the executive capital, Amaravati as the legislative capital, and Kumool as the judicial capital. हालांकि, 2019 में YSRCP के सत्ता में आने के बाद परियोजना ठप हो गई और तीन राजधानियों का प्रस्ताव रखा गया: विशाखापत्तनम को कार्यपालिका राजधानी, अमरावती को विधायी राजधानी, और कुरनूल को न्यायिक राजधानी बनाया जाए।
- In March 2022, a three-judge Bench of the Andhra Pradesh High Court ruled that the capital could not be shifted out of Amaravati, primarily on the ground that the State lacked the legislative competence required to reverse a policy decision taken in 2014-15. मार्च 2022 में, आंध्र प्रदेश उच्च न्यायालय की तीन-न्यायाधीशों की पीठ ने फैसला दिया कि राजधानी को अमरावती से बाहर नहीं ले जाया जा सकता, मुख्यतः इस आधार पर कि राज्य के पास 2014-15 के नीति निर्णय को उलटने की विधायी क्षमता नहीं है।
- The YSRCP government challenged the High Court judgment in the Supreme Court by filing a Special Leave Petition (SLP). YSRCP सरकार ने इस फैसले को सुप्रीम कोर्ट में विशेष अनुमति याचिका (SLP) दाखिल कर चुनौती दी।
- The SLP was pending when the NDA returned to power in the State. जब NDA राज्य में फिर से सत्ता में लौटा, तब यह SLP लंबित थी।
- The Naidu government led a davit in late 2024 in the apex court, arming its commitment to develop Amaravati as the capital. नायडू सरकार ने 2024 के अंत में सर्वोच्च न्यायालय में एक हलफनामा दाखिल किया, जिसमें अमरावती को राजधानी के रूप में विकसित करने की प्रतिबद्धता जताई गई।
- The SLP, led by the YSRCP government, is in the process of being withdrawn, in alignment with the present government's vision of building a green capital. YSRCP सरकार द्वारा दायर SLP को वर्तमान सरकार के ग्रीनफील्ड राजधानी बनाने के दृष्टिकोण के अनुरूप वापस लेने की प्रक्रिया चल रही है।

### What does Bill say? विधेयक क्या कहता है?

- On March 28, 2026, the Andhra Pradesh Legislative Assembly adopted a resolution requesting the Union government to grant statutory recognition to Amaravati as the State's sole capital. 28 मार्च 2026 को, आंध्र प्रदेश विधानसभा ने एक प्रस्ताव पारित किया, जिसमें केंद्र सरकार से अमरावती को राज्य की एकमात्र राजधानी के रूप में वैधानिक मान्यता देने का अनुरोध किया गया।
- The resolution sought an amendment to Section 5 of the Andhra Pradesh Reorganisation Act, 2014, to explicitly name Amaravati as the capital and end the ambiguity caused by previous three-capital proposals. इस प्रस्ताव में आंध्र प्रदेश पुनर्गठन अधिनियम, 2014 की धारा 5 में संशोधन की मांग की गई, ताकि अमरावती को स्पष्ट रूप से राजधानी घोषित किया जा सके और पहले के तीन-राजधानी प्रस्तावों से उत्पन्न अस्पष्टता समाप्त हो सके।



- Following the request, the Union government introduced the Andhra Pradesh Reorganisation (Amendment) Bill, 2026.  
इस अनुरोध के बाद, **केंद्र सरकार** ने **आंध्र प्रदेश पुनर्गठन (संशोधन) विधेयक, 2026** पेश किया।
- As mandated by Section 5 of the Andhra Pradesh Reorganisation Act, 2014, Hyderabad served as the joint capital for Telangana and Andhra Pradesh for a decade starting June 2, 2014.  
**आंध्र प्रदेश पुनर्गठन अधिनियम, 2014** की धारा 5 के अनुसार, **हैदराबाद** ने 2 जून 2014 से एक दशक तक **तेलंगाना और आंध्र प्रदेश की संयुक्त राजधानी** के रूप में कार्य किया।
- This arrangement concluded on June 2, 2024, after which Hyderabad became the exclusive capital of Telangana, leaving Andhra Pradesh to establish a new capital.  
यह व्यवस्था 2 जून 2024 को समाप्त हुई, जिसके बाद **हैदराबाद** केवल **तेलंगाना** की राजधानी बन गया और **आंध्र प्रदेश** को नई राजधानी स्थापित करनी पड़ी।
- The new Bill seeks to declare and notify Amaravati as the sole capital city of Andhra Pradesh with effect from June 2, 2024, by inserting the words “at Amaravati” to Section 5(2) of the 2014 Act and adding the phrase “and Amaravati includes the capital city areas notified under the Andhra Pradesh Capital Region Development Authority Act, 2014” to the explanation to Section 5.  
नया विधेयक 2 जून 2024 से प्रभावी रूप से **अमरावती** को **आंध्र प्रदेश की एकमात्र राजधानी** घोषित करने का प्रस्ताव करता है, जिसमें 2014 के अधिनियम की **धारा 5(2)** में “at Amaravati” शब्द जोड़े जाएंगे और “और अमरावती में वे क्षेत्र शामिल हैं जिन्हें **आंध्र प्रदेश कैपिटल रीजन डेवलपमेंट अथॉरिटी अधिनियम, 2014** के तहत अधिसूचित किया गया है” वाक्यांश को धारा 5 की व्याख्या में जोड़ा जाएगा।

### Why amend the Andhra Pradesh Reorganisation Act, 2014? आंध्र प्रदेश पुनर्गठन अधिनियम, 2014 में संशोधन क्यों?

- Amending the Act is essential because the genesis of the capital of the successor State of Andhra Pradesh lies in this Central legislation.  
इस अधिनियम में संशोधन आवश्यक है क्योंकि **आंध्र प्रदेश** की राजधानी की उत्पत्ति इसी **केंद्रीय कानून** में निहित है।
- Amaravati needed to be explicitly recognised as the capital with statutory backing.  
**अमरावती** को राजधानी के रूप में स्पष्ट रूप से **वैधानिक समर्थन** के साथ मान्यता देना आवश्यक था।
- The State government believed that the only way to prevent a future dispensation from shifting or splitting the capital was to amend the Act.  
राज्य सरकार का मानना था कि भविष्य में किसी भी सरकार द्वारा राजधानी को बदलने या विभाजित करने से रोकने का एकमात्र तरीका **अधिनियम में संशोधन** करना है।

### Why has the YSRCP opposed the Bill? YSRCP ने इस विधेयक का विरोध क्यों किया?

- YSRCP MPs said they were not opposed to the Bill declaring Amaravati as the capital, but were unhappy with its “present form,” as it allegedly ignores unfulfilled promises, especially with regard to the Land Pooling Scheme.  
**YSRCP सांसदों** ने कहा कि वे **अमरावती** को राजधानी घोषित करने के खिलाफ नहीं हैं, लेकिन इसके **“वर्तमान स्वरूप”** से असंतुष्ट हैं, क्योंकि यह कथित रूप से अधूरे वादों, विशेषकर **लैंड पूलिंग योजना** को नजरअंदाज करता है।
- This involves the voluntary contribution of land by farmers in exchange for smaller, developed, and high-value plots, making them partners in the development process.  
इसमें **किसानों द्वारा स्वेच्छा से भूमि देना** शामिल है, जिसके बदले उन्हें छोटे, विकसित और उच्च मूल्य वाले भूखंड मिलते हैं, जिससे वे **विकास प्रक्रिया के भागीदार** बनते हैं।
- The YSRCP has argued that the interests of farmers who had parted with land for the capital project remain unaddressed.  
**YSRCP** का तर्क है कि जिन किसानों ने राजधानी परियोजना के लिए भूमि दी, उनके **हित अभी भी अनदेखे** हैं।
- Party member P.V. Midhun Reddy said a clear timeline must be provided for compensating farmers and incorporated into the Bill.



पार्टी सदस्य पी.वी. मिथुन रेड्डी ने कहा कि किसानों को मुआवजा देने के लिए स्पष्ट समयसीमा निर्धारित की जानी चाहिए और इसे विधेयक में शामिल किया जाना चाहिए।

## GS Paper II: Governance,

### TOPICS COVERED

05 April 2026

05A What are the concerns over the FCRA Bill?  
FCRA विधेयक को लेकर क्या चिंताएं हैं?

# What are the concerns over the FCRA Bill?

How does the Home Ministry regulate foreign donations to NGOs in India? What are the key changes proposed to the Foreign Contribution (Regulation) Amendment Bill, 2026? Why has the Opposition objected to the Bill and why was the Bill deferred? What is its current status?

GS II: Governance

MOE

Vijaita Singh

#### The story so far:

The Central government proposed to introduce the Foreign Contribution (Regulation) Amendment Bill, 2026 during the Budget Session of Parliament, which concluded on April 2. The Bill seeks to amend the Foreign Contribution (Regulation) Act, 2010, under which registration is mandatory for non-governmental organisations (NGOs) and associations to receive foreign funds or donations. It was introduced in the Lok Sabha on March 25; however, following an uproar by Opposition parties, its discussion and passage were deferred.

According to the statement of objects and reasons, around 16,000 associations are registered under the FCRA and receive approximately ₹22,000 crore annually. The Act regulates the acceptance and utilisation of

The Catholic Bishops' Conference of India said the Bill amounts to executive overreach and that it could unduly interfere with minority institutions and civil society

foreign contributions to ensure that such inflows do not adversely affect national interest, public order, or national security.

#### What are the key changes proposed?

One of the key changes proposed in the Bill is the appointment of a 'designated authority' to take over, manage, or dispose of assets created from foreign funds when an NGO's FCRA registration is suspended, cancelled, or not renewed. This authority will have the powers of a civil court and can order the transfer or sale of assets owned by NGOs to either the government or any other body. The 2010 Act provided for regulation of foreign fund flows, but lacked a statutory framework for managing assets created from such funds. The government said that Section 15 of the Act provides for vesting of assets, but the absence of a comprehensive framework for the supervision, management, and disposal of such assets has led to administrative uncertainty and scope for misuse.

Another proposed amendment broadens the definition of an NGO's 'key functionary' beyond office bearers and directors to include trustees, partners, the Karta of a Hindu undivided family, governing body members, or anyone controlling or managing the organisation, and makes them liable for FCRA offences unless they can prove lack of knowledge or due diligence.

#### What are the other changes proposed?

The Bill seeks to amend Section 43 of the parent Act to require any law enforcement agency or State government to obtain prior approval from the Central government before initiating investigations into FCRA-related complaints.

It also proposes timelines for the receipt and utilisation of foreign contributions under the 'prior permission' category (one-time receipt of funds), and provides for automatic cessation of certificates upon expiry or non-renewal.

The Bill proposes to reduce the maximum imprisonment for FCRA offences from five years to one year. It also proposes fixed timelines for the utilisation of foreign funds received under the 'prior permission' category unlike the open-ended provision under the 2010 Act.

#### How does the Ministry of Home Affairs (MHA) regulate foreign donations in India?

The MHA regulates foreign donations in the country through the FCRA to ensure that such funds do not adversely affect the country's internal security. The legislation was first enacted in 1976. In 2010, it was repealed and replaced with a new legislation. The 2010 Act came into force on May 1, 2011 and has been amended in 2016, 2018, and 2020.

The FCRA registration is valid for five years, after which the NGO has to apply for a renewal. Since 2015, the FCRA registrations of more than 18,000 NGOs have been cancelled. As on April 3, there are 14,965 FCRA-registered NGOs active in the country. NGOs can receive foreign contributions for social, educational, religious, economic, and cultural programmes.

#### Why is the Bill being opposed?

The Catholic Bishops' Conference of India said the Bill amounts to "executive overreach" and raises concerns about "undue interference" in the functioning of minority institutions and civil society groups. The body objected to "clauses that grant sweeping powers to the Central government, allowing it to deny renewal or cancel licenses of organisations" and the powers "to assume control over institutions, including their funds, properties, and other assets." The Chief Ministers of poll-bound Tamil Nadu and Kerala have opposed the Bill as well.

#### What is the status of the Bill?

The Bill was deferred following an uproar by the Opposition. In Kerala and Tamil Nadu, there were fears it could be misused to seize assets of minority institutions, such as churches. Meanwhile, the Bharatiya Janata Party has been reaching out to the Christian community in Kerala to build a support base. The legislation remains active.



Opposition MPs demanding the withdrawal of the Foreign Contribution (Regulation) Amendment Bill, 2026, during the Budget Session of Parliament, in New Delhi. ANI

## 05A. What are the concerns over the FCRA Bill? FCRA विधेयक को लेकर क्या चिंताएं हैं?

- What are the concerns over the FCRA Bill?  
FCRA विधेयक को लेकर क्या चिंताएं हैं?
- How does the Home Ministry regulate foreign donations to NGOs in India?  
भारत में गृह मंत्रालय NGOs को मिलने वाले विदेशी चंदा को कैसे नियंत्रित करता है?
- What are the key changes proposed to the Foreign Contribution (Regulation) Amendment Bill, 2026?  
विदेशी अंशदान (विनियमन) संशोधन विधेयक, 2026 में कौन-कौन से प्रमुख बदलाव प्रस्तावित हैं?
- Why has the Opposition objected to the Bill and why was the Bill deferred?  
विपक्ष ने इस विधेयक का विरोध क्यों किया और इसे स्थगित क्यों किया गया?
- What is its current status?  
इसकी वर्तमान स्थिति क्या है?



- The Central government proposed to introduce the Foreign Contribution (Regulation) Amendment Bill, 2026 during the Budget Session of Parliament, which concluded on April 2. **केंद्र सरकार ने संसद के बजट सत्र के दौरान विदेशी अंशदान (विनियमन) संशोधन विधेयक, 2026** पेश करने का प्रस्ताव रखा, जो 2 अप्रैल को समाप्त हुआ।
- The Bill seeks to amend the Foreign Contribution (Regulation) Act, 2010, under which registration is mandatory for non-governmental organisations (NGOs) and associations to receive foreign funds or donations.  
यह विधेयक **विदेशी अंशदान (विनियमन) अधिनियम, 2010** में संशोधन करना चाहता है, जिसके तहत **NGOs** और संगठनों के लिए विदेशी धन प्राप्त करने हेतु **पंजीकरण अनिवार्य** है।
- It was introduced in the Lok Sabha on March 25; however, following an uproar by Opposition parties, its discussion and passage were deferred.  
इसे 25 मार्च को **लोकसभा** में पेश किया गया; हालांकि, **विपक्षी दलों के विरोध** के बाद इसकी चर्चा और पारित करना स्थगित कर दिया गया।
- According to the statement of objects and reasons, around 16,000 associations are registered under the FCRA and receive approximately ₹22,000 crore annually.  
उद्देश्य और कारणों के विवरण के अनुसार, लगभग **16,000 संगठन FCRA** के तहत पंजीकृत हैं और हर साल लगभग **₹22,000 करोड़** प्राप्त करते हैं।
- The Act regulates the acceptance and utilisation of foreign contributions to ensure that such windows do not adversely affect national interest, public order, or national security.  
यह अधिनियम विदेशी अंशदान के **स्वीकार और उपयोग** को नियंत्रित करता है ताकि यह **राष्ट्रीय हित, सार्वजनिक व्यवस्था और राष्ट्रीय सुरक्षा** को प्रभावित न करे।

### What are the key changes proposed? प्रमुख प्रस्तावित बदलाव क्या हैं?

- One of the key changes proposed in the Bill is the appointment of a 'designated authority' to take over, manage, or dispose of assets created from foreign funds when an NGO's FCRA registration is suspended, cancelled, or not renewed.  
विधेयक में एक प्रमुख बदलाव '**निर्धारित प्राधिकरण**' की नियुक्ति है, जो उस स्थिति में **NGO की संपत्तियों** का प्रबंधन करेगा जब उसका **FCRA पंजीकरण** निलंबित, रद्द या नवीनीकृत नहीं होता।
- This authority will have the powers of a civil court and can order the transfer or sale of assets owned by NGOs to either the government or any other body.  
इस प्राधिकरण को **सिविल कोर्ट जैसी शक्तियां** होंगी और यह NGO की संपत्तियों के **हस्तांतरण या बिक्री** का आदेश दे सकता है।
- The 2010 Act provided for regulation of foreign fund flows, but lacked a statutory framework for managing assets created from such funds.  
2010 का अधिनियम विदेशी धन के प्रवाह को नियंत्रित करता था, लेकिन इससे बनी संपत्तियों के प्रबंधन के लिए **वैधानिक ढांचा** नहीं था।
- The government said that Section 15 of the Act provides for vesting of assets, but the absence of a comprehensive framework for the supervision, management, and disposal of such assets has led to administrative uncertainty and scope for misuse.  
सरकार ने कहा कि अधिनियम की **धारा 15** संपत्तियों के अधिग्रहण का प्रावधान देती है, लेकिन एक व्यापक ढांचे की कमी से **प्रशासनिक अनिश्चितता और दुरुपयोग की संभावना** बनी रहती है।
- Another proposed amendment broadens the definition of an NGO's 'key functionary' beyond office bearers and directors to include trustees, partners, the Karta of a Hindu undivided family, governing body members, or anyone controlling or managing the organisation, and makes them liable for FCRA licenses unless they can prove lack of knowledge or due diligence.  
एक अन्य संशोधन NGO के '**मुख्य पदाधिकारी**' की परिभाषा को विस्तारित करता है, जिसमें **ट्रस्टी, साझेदार, HUF का कर्ता, शासी निकाय के सदस्य** शामिल होंगे, और उन्हें **FCRA उल्लंघनों** के लिए जिम्मेदार ठहराया जाएगा जब तक वे अपनी **अनभिज्ञता या उचित सावधानी** साबित न करें।

### What are the other changes proposed? अन्य प्रस्तावित बदलाव क्या हैं?



- The Bill seeks to amend Section 43 of the parent Act to require any law enforcement agency or State government to obtain prior approval from the Central government before initiating investigations into FCRA-related complaints.  
विधेयक धारा 43 में संशोधन करना चाहता है, जिससे कोई भी कानून प्रवर्तन एजेंसी या राज्य सरकार FCRA मामलों की जांच शुरू करने से पहले केंद्र सरकार की अनुमति ले।
- It also proposes timelines for the receipt and utilisation of foreign contributions under the 'prior permission' category (one-time receipt of funds), and provides for automatic cessation of certificates upon expiry or non-renewal.  
यह 'पूर्व अनुमति श्रेणी' के तहत विदेशी धन के प्राप्ति और उपयोग के लिए समयसीमा तय करता है और प्रमाणपत्र के समाप्त होने या नवीनीकरण न होने पर स्वतः समाप्ति का प्रावधान करता है।
- The Bill proposes to reduce the maximum imprisonment for FCRA offences from five years to one year.  
विधेयक FCRA अपराधों के लिए अधिकतम सजा को 5 वर्ष से घटाकर 1 वर्ष करने का प्रस्ताव करता है।
- It also proposes fixed timelines for the utilisation of foreign funds received under the 'prior permission' category unlike the open-ended provision under the 2010 Act.  
यह 'पूर्व अनुमति' के तहत प्राप्त धन के उपयोग के लिए निश्चित समयसीमा तय करता है, जो 2010 अधिनियम की खुली व्यवस्था से अलग है।

### How does the Ministry of Home Affairs (MHA) regulate foreign donations in India? गृह मंत्रालय (MHA) भारत में विदेशी चंदा को कैसे नियंत्रित करता है?

- The MHA regulates foreign donations in the country through the FCRA to ensure that such funds do not adversely affect the country's internal security.  
गृह मंत्रालय (MHA) FCRA के माध्यम से विदेशी चंदा को नियंत्रित करता है ताकि यह आंतरिक सुरक्षा को प्रभावित न करे।
- The legislation was first enacted in 1976.  
यह कानून पहली बार 1976 में लागू किया गया था।
- In 2010, it was repealed and replaced with new legislation.  
2010 में इसे निरस्त कर नया कानून लाया गया।
- The 2010 Act came into force on May 1, 2011 and has been amended in 2016, 2018, and 2020.  
2010 का अधिनियम 1 मई 2011 से लागू हुआ और इसमें 2016, 2018, और 2020 में संशोधन हुए।
- The FCRA registration is valid for five years, after which the NGO has to apply for a renewal.  
FCRA पंजीकरण 5 वर्षों के लिए वैध होता है, जिसके बाद नवीनीकरण आवश्यक है।
- Since 2015, the FCRA registrations of more than 18,000 NGOs have been cancelled.  
2015 से अब तक 18,000 से अधिक NGOs के पंजीकरण रद्द किए गए हैं।
- As on April 3, there are 14,965 FCRA-registered NGOs active in the country.  
3 अप्रैल तक देश में 14,965 FCRA-पंजीकृत NGOs सक्रिय हैं।
- NGOs can receive foreign contributions for social, educational, religious, economic, and cultural programmes.  
NGOs सामाजिक, शैक्षिक, धार्मिक, आर्थिक और सांस्कृतिक कार्यक्रमों के लिए विदेशी धन प्राप्त कर सकते हैं।

### Why is the Bill being opposed? विधेयक का विरोध क्यों हो रहा है?

- The Catholic Bishops' Conference of India said the Bill amounts to "executive overreach" and raises concerns about "undue interference" in the functioning of minority institutions and civil society groups.  
कैथोलिक बिशप्स कॉन्फ्रेंस ऑफ इंडिया ने कहा कि यह विधेयक "कार्यपालिका का अतिक्रमण" है और इससे अल्पसंख्यक संस्थानों में हस्तक्षेप की चिंता है।
- The body objected to "clauses that grant sweeping powers to the Central government, allowing it to deny renewal or cancel licenses of organisations" and the powers "to assume control over institutions, including their funds, properties, and other assets."



इसने उन प्रावधानों पर आपत्ति जताई जो **केंद्र सरकार को व्यापक शक्तियां** देते हैं, जिससे वह संगठनों के लाइसेंस रद्द कर सकती है और उनकी **संपत्तियों पर नियंत्रण** ले सकती है।

- The Chief Ministers of poll-bound Tamil Nadu and Kerala have opposed the Bill as well.  
**तमिलनाडु और केरल** के मुख्यमंत्रियों ने भी इस विधेयक का विरोध किया है।

### What is the status of the Bill? विधेयक की वर्तमान स्थिति क्या है?

- The Bill was deferred following an uproar by the Opposition.  
विपक्ष के विरोध के कारण विधेयक को **स्थगित** कर दिया गया।
- In Kerala and Tamil Nadu, there were fears it could be misused to seize assets of minority institutions, such as churches.  
**केरल और तमिलनाडु** में आशंका जताई गई कि इसका उपयोग **अल्पसंख्यक संस्थानों** (जैसे चर्च) की संपत्ति जब्त करने के लिए किया जा सकता है।
- Meanwhile, the Bharatiya Janata Party has been reaching out to the Christian community in Kerala to build a support base.  
इस बीच, **भारतीय जनता पार्टी** केरल में **ईसाई समुदाय** से समर्थन प्राप्त करने की कोशिश कर रही है।
- The legislation remains active.  
यह विधेयक अभी भी **सक्रिय** है।

### GS Paper II: International Relations

#### TOPICS COVERED

05 April 2026

05A	<b>Why does Trump want to pull out of NATO?</b> <b>ट्रम्प NATO से बाहर क्यों निकलना चाहते हैं?</b>
05A	<b>Iran executes two members of banned group, MEK, says judiciary</b> <b>ईरान ने प्रतिबंधित संगठन MEK के दो सदस्यों को फांसी दी, न्यायपालिका ने कहा</b>
05A	<b>Iraq shuts key Shalamchek trade crossing with Iran after air strikes</b> <b>इराक ने हवाई हमलों के बाद ईरान के साथ प्रमुख शालामचेह व्यापार मार्ग बंद किया</b>



# Why does Trump want to pull out of NATO?

Why does the U.S. administration believe that NATO's founding principles and membership need to be 're-examined'? Why was NATO formed, and what are the recent developments that have led to fissures? Can the U.S. easily exit NATO? How much does it contribute to the alliance?

**GS II: IR**

**MOB**

**Subhasini Haidar**

**The story so far:**

Last week, in an interview to the British newspaper, U.S. President Donald Trump said withdrawing U.S. membership from the North Atlantic Treaty Organization (NATO) is now "beyond reconsideration". Through this, he indicated that one of America's oldest alliances since World War 2 could be on the brink of a break-up. The tough words, and the U.S. President's description of NATO as a "paper tiger", reflect an antagonism that goes back more than a decade that has been heightened during the ongoing war with Iran. Even so, the U.S. may not find it easy to exit the 32-nation, 76-year old alliance.

**Why is Mr. Trump angry with NATO?**

The immediate trigger for Mr. Trump's comments to *The Telegraph* was that most NATO allies refused U.S. requests for military and airspace support in connection with the war against Iran, where the U.S. has faced significant setbacks in recent weeks.

While Spain and Italy have directly criticised the U.S.-Israeli strikes on Iran, France has denied U.S. military jets overflight permission to fly to Israel. Even the U.S.'s closest allies – the U.K., Germany, and Canada – have refused to take part in operations.

U.S. officials feel that this stand violates Article 5 of the North Atlantic Treaty, which states that "an armed attack against one NATO member shall be considered an attack against them all".

Two days before Mr. Trump's interview appeared, U.S. Secretary of State Marco Rubio had also told an American television channel that NATO's founding principles and membership would have to be "re-examined". "If NATO is just about us (the U.S.) defending Europe if they're attacked, but them denying us basing rights when we need them, then that's

As per the North Atlantic Treaty, the U.S. government would have to hand itself the exit notice, and then inform other countries, which would make for an awkward process

not a very good arrangement," Mr. Rubio said. The seeds of U.S. discontent with NATO had been planted by Mr. Trump ever since his first term as President, when he announced that NATO was "obsolete". He criticised European allies for not pulling their weight in military expenditure while depending on the U.S. for their defence. In Mr. Trump's second term, the rift grew over his rough treatment of Ukraine. More recently, he was angered that NATO members criticised the U.S.'s regime change operations in Venezuela and that they fiercely opposed his plans to annex Greenland. With the U.S.-Israel war with Iran entering its sixth week, and no exit strategy in sight, European allies have become more determined in not joining the operations.

**What is the purpose of NATO?**

NATO (or OTAN, according to the French abbreviation) was formed in 1949, with the U.S., Canada and 10 West European countries which felt threatened by the Soviet Union, particularly after the installation of pro-Soviet Communist regimes in Eastern Europe and China. The North Atlantic Treaty, signed in Washington DC on April 4, 1949, created the inter-governmental military grouping mandated with "collective security". Over time, NATO gathered more members, including Greece and Turkey in the 1950s and Spain in 1982.

After the collapse of the Soviet Union, more than a dozen East European countries joined, triggering a backlash from Russia. After Russia's 2022 invasion of Ukraine, which was not a member, Finland and Sweden joined NATO, taking the total membership up to 32.

Ironically, although NATO was set up to counter the Soviet threat, NATO forces did not carry out a single military operation during the Cold War; it was only after conflicts in the Baltic states in the 1990s that NATO forces began joint operational missions, such as in Iraq (1990 and 2003), Bosnia (1992), Kosovo (1999), and Afghanistan (2001).

NATO does not have a separate independent force, but when required, combines resources and personnel of the 32 members that operate under a unified command structure called the Supreme Headquarters Allied Powers Europe (SHAPE), based in Belgium. It is led by the Supreme Allied Commander Europe, a U.S. 4-star General or Admiral who heads the U.S. European Command.

Although Ukraine has now backed away from plans to join NATO, Ukrainian forces have worked closely with NATO after Russia launched its 'Special Military Operations' in February 2022. They have received major aid packages, including a \$40 billion pledge at the NATO Summit in 2024, training, and security assistance.

As a result, Mr. Trump has complained that when it came to his demands that NATO members support U.S. operations in Iran, send

their navies to help open up the Strait of Hormuz, or facilitate refuelling and overflight missions, their response should have been "automatic".

"We've been there automatically, including Ukraine," he said. "Ukraine wasn't our problem. It was a test, and we were there for them, and we would always have been there for them. They weren't there for us," he told *The Telegraph*.

**How much does the U.S. fund NATO operations?**

Throughout all these operations, the U.S. has provided much of NATO's funding, including 62% of the defence spending and about 15% of the civil budget of the alliance. It also provides NATO countries with a "nuclear umbrella" and maintains U.S. military bases that enhance deterrence in the region. Under increasing security concerns and U.S. pressure, all NATO members agreed at the 2025 Hague Summit to raise defence spending to 5% of their GDP by 2035, but Mr. Trump has continued to chide allies to share more of the burden.

**How hard would it be for the U.S. to pull out of NATO?**

A U.S. exit from NATO or the Alliance Treaty seems unimaginable and is many times more difficult than its exit from more than 60 different multilateral organisations and treaties, including the World Health Organization and the United Nations Framework Convention on Climate Change in January 2026, and much more legally complex than the U.K.'s exit from the European Union (Brexit) in January 2020.

Article 13 of the North Atlantic Treaty provides for the withdrawal of any member, but says the member must submit a one-year "notice of denunciation... to the Government of the United States of America, which will inform the Governments of the other Parties." As the depository authority, the U.S. government would therefore have to hand itself the notice, and then inform other countries, which would make for an awkward process.

In addition, and as a measure against Mr. Trump's own statements in his first tenure, the Biden administration pushed a law through the U.S. Congress in 2023 that prohibits the U.S. President from trying to "suspend, terminate, denounce, or withdraw the United States from the North Atlantic Treaty – without the advice and consent of the Senate or an act of Congress". Alternative paths could see the U.S. withdraw personnel from SHAPE or skip NATO meetings – in the manner India has withdrawn from attending SAARC summits – which would make the organisation virtually defunct.

In terms of its impact on the world order, especially in the midst of a war, the U.S.'s withdrawal from NATO would lead to the remaking of all global security structures, severely weaken the hold of the Western coalition, and strengthen other global powers such as Russia and China. It is therefore more likely that both the U.S. and its NATO allies will work to avoid such a drastic step, beginning with the visit of NATO Secretary General Mark Rutte to Washington on April 8.



NATO Secretary General Mark Rutte during a press conference at the NATO headquarters in Brussels, Belgium, on March 26, 2026. REUTERS

## 05A. Why does Trump want to pull out of NATO?

**ट्रम्प NATO से बाहर क्यों निकलना चाहते हैं?**

- Why does Trump want to pull out of NATO?  
**ट्रम्प NATO से बाहर क्यों निकलना चाहते हैं?**
- Why does the U.S. administration believe that NATO's founding principles and membership need to be 're-examined'?  
अमेरिकी प्रशासन क्यों मानता है कि **NATO** के मूल सिद्धांतों और सदस्यता की 'पुनः जांच' की आवश्यकता है?
- Why was NATO formed, and what are the recent developments that have led to fissures?  
**NATO** का गठन क्यों हुआ, और हाल के कौन से घटनाक्रम हैं जिन्होंने **मतभेद (fissures)** पैदा किए?
- Can the U.S. easily exit NATO?  
क्या **अमेरिका** आसानी से **NATO** से बाहर निकल सकता है?
- How much does it contribute to the alliance?  
यह **गठबंधन** में कितना योगदान देता है?
- Last week, in an interview to the British newspaper, U.S. President Donald Trump said withdrawing U.S. membership from the North Atlantic Treaty Organization (NATO) is now "beyond reconsideration".



पिछले सप्ताह, एक ब्रिटिश समाचार पत्र को दिए गए साक्षात्कार में, **अमेरिकी राष्ट्रपति डोनाल्ड ट्रम्प** ने कहा कि **नॉर्थ अटलांटिक ट्रीटी ऑर्गनाइजेशन (NATO)** से अमेरिका की सदस्यता वापस लेना अब “पुनर्विचार से परे” है।

- Through this, he indicated that one of America's oldest alliances since World War 2 could be on the brink of a break-up.  
इससे उन्होंने संकेत दिया कि **द्वितीय विश्व युद्ध** के बाद से अमेरिका के सबसे पुराने गठबंधनों में से एक टूटने के कगार पर हो सकता है।
- The tough words, and the U.S. President's description of NATO as a “paper tiger”, reflect an antagonism that goes back more than a decade that has been heightened during the ongoing war with Iran.  
कड़े शब्दों और **अमेरिकी राष्ट्रपति** द्वारा **NATO** को **“कागजी शेर (paper tiger)”** बताने से एक दशक से अधिक पुरानी **विरोध भावना** झलकती है, जो **ईरान के साथ चल रहे युद्ध** के दौरान और बढ़ गई है।
- Even so, the U.S. may not find it easy to exit the 32-nation, 76-year old alliance.  
फिर भी, **अमेरिका** के लिए 32 देशों वाले, 76 साल पुराने इस **गठबंधन** से बाहर निकलना आसान नहीं होगा।

### Why is Mr. Trump angry with NATO? ट्रम्प NATO से नाराज़ क्यों हैं?

- The immediate trigger for Mr. Trump's comments to The Telegraph was that most NATO allies refused U.S. requests for military and airspace support in connection with the war against Iran, where the U.S. has faced significant setbacks in recent weeks.  
**The Telegraph** को दिए गए ट्रम्प के बयान का तत्काल कारण यह था कि अधिकांश **NATO सहयोगियों** ने **ईरान के खिलाफ युद्ध** में अमेरिका के **सैन्य और हवाई क्षेत्र समर्थन** के अनुरोध को ठुकरा दिया, जहां अमेरिका को हाल के हफ्तों में **महत्वपूर्ण झटके** लगे हैं।
- While Spain and Italy have directly criticised the U.S.-Israeli strikes on Iran, France has denied U.S. military jets overnight permission to fly to Israel.  
जहां **स्पेन** और **इटली** ने **अमेरिका-इज़राइल हमलों** की आलोचना की, वहीं **फ्रांस** ने अमेरिकी सैन्य विमानों को **ओवरफ्लाइट अनुमति** देने से इनकार कर दिया।
- Even the U.S.'s closest allies — the U.K., Germany, and Canada — have refused to take part in operations.  
यहां तक कि अमेरिका के सबसे करीबी सहयोगी — **यू.के., जर्मनी, और कनाडा** — ने भी इन अभियानों में भाग लेने से इनकार कर दिया।
- U.S. officials feel that this stand violates Article 5 of the North Atlantic Treaty, which states that “an armed attack against one NATO member shall be considered an attack against them all”.  
अमेरिकी अधिकारियों का मानना है कि यह **रुख नॉर्थ अटलांटिक संधि के अनुच्छेद 5** का उल्लंघन करता है, जिसमें कहा गया है कि “एक सदस्य पर हमला सभी पर हमला माना जाएगा।”
- Two days before Mr. Trump's interview appeared, U.S. Secretary of State Marco Rubio had also told an American television channel that NATO's founding principles and membership would have to be “re-examined”.  
ट्रम्प के साक्षात्कार से दो दिन पहले, **अमेरिकी विदेश मंत्री मार्को रुबियो** ने भी कहा कि **NATO के मूल सिद्धांतों और सदस्यता** की “पुनः जांच” करनी होगी।
- “If NATO is just about us (the U.S.) defending Europe if they're attacked, but denying us basing rights when we need them, then that's not a very good arrangement,” Mr. Rubio said.  
“अगर **NATO** सिर्फ अमेरिका द्वारा यूरोप की रक्षा करने तक सीमित है, लेकिन जरूरत पड़ने पर वे हमें **बेसिंग अधिकार** नहीं देते, तो यह अच्छा समझौता नहीं है,” रुबियो ने कहा।
- The seeds of U.S. discontent with NATO had been planted by Mr. Trump ever since his first term as President, when he announced that NATO was “obsolete”.  
**NATO** के प्रति अमेरिका की असंतुष्टि के बीज ट्रम्प के पहले कार्यकाल में ही बो दिए गए थे, जब उन्होंने इसे **“अप्रासंगिक (obsolete)”** बताया था।
- He criticised European allies for not pulling their weight in military expenditure while depending on the U.S. for their defence.  
उन्होंने **यूरोपीय सहयोगियों** की आलोचना की कि वे **रक्षा खर्च** में योगदान नहीं करते और अपनी सुरक्षा के लिए अमेरिका पर निर्भर रहते हैं।



- In Mr. Trump's second term, the rift grew over his rough treatment of Ukraine. ट्रम्प के दूसरे कार्यकाल में यूक्रेन के प्रति उनके कठोर रवैये के कारण मतभेद और बढ़ गए।
- More recently, he was angered that NATO members criticised the U.S.'s regime change operations in Venezuela and that they fiercely opposed his plans to annex Greenland. हाल ही में, वे इस बात से नाराज थे कि **NATO सदस्य देशों** ने **वेनेजुएला** में अमेरिका की कार्रवाई की आलोचना की और **ग्रीनलैंड** को जोड़ने की उनकी योजना का विरोध किया।
- With the U.S.-Israel war with Iran entering its sixth week, and no exit strategy in sight, European allies have become more determined in not joining the operations. **अमेरिका-इज़राइल और ईरान युद्ध** के छठे सप्ताह में प्रवेश करने और कोई स्पष्ट रणनीति न होने के कारण, यूरोपीय सहयोगी इसमें शामिल न होने के लिए और दृढ़ हो गए हैं।

## What is the purpose of NATO? NATO का उद्देश्य क्या है?

- NATO (or OTAN, according to the French abbreviation) was formed in 1949, with the U.S., Canada and 10 West European countries which felt threatened by the Soviet Union, particularly after the installation of pro-Soviet Communist regimes in Eastern Europe and China. **NATO (OTAN)** का गठन 1949 में **अमेरिका, कनाडा और 10 पश्चिमी यूरोपीय देशों** द्वारा किया गया, जिन्हें **सोवियत संघ** से खतरा महसूस हो रहा था।
- The North Atlantic Treaty, signed in Washington DC on April 4, 1949, created the inter-governmental military grouping mandated with "collective security". 4 अप्रैल 1949 को **वाशिंगटन डीसी** में हस्ताक्षरित **नॉर्थ अटलांटिक संधि** ने "सामूहिक सुरक्षा" के लिए एक अंतर-सरकारी सैन्य समूह बनाया।
- Over time, NATO gathered more members, including Greece and Turkey in the 1950s and Spain in 1982. समय के साथ **NATO** में अधिक सदस्य जुड़े, जिनमें 1950 के दशक में **ग्रीस और तुर्की** और 1982 में **स्पेन** शामिल हैं।
- After the collapse of the Soviet Union, more than a dozen East European countries joined, triggering a backlash from Russia. **सोवियत संघ के पतन** के बाद, एक दर्जन से अधिक **पूर्वी यूरोपीय देश** इसमें शामिल हुए, जिससे **रूस** की प्रतिक्रिया हुई।
- After Russia's 2022 invasion of Ukraine, which was not a member, Finland and Sweden joined NATO, taking the total membership up to 32. 2022 में **रूस द्वारा यूक्रेन पर आक्रमण** के बाद, **फिनलैंड और स्वीडन** ने NATO में शामिल होकर कुल सदस्यता को 32 तक पहुंचा दिया।
- Ironically, although NATO was set up to counter the Soviet threat, NATO forces did not carry out a single military operation during the Cold War; it was only after conflicts in the Baltic states in the 1990s that NATO forces began joint operational missions, such as in Iraq (1990 and 2003), Bosnia (1992), Kosovo (1999), and Afghanistan (2001). विडंबना यह है कि सोवियत खतरे का मुकाबला करने के लिए बने **NATO** ने **शीत युद्ध** के दौरान कोई सैन्य कार्रवाई नहीं की; 1990 के दशक में **बाल्टिक राज्यों** में संघर्ष के बाद ही **संयुक्त सैन्य अभियान** शुरू हुए, जैसे **इराक, बोस्निया, कोसोवो और अफगानिस्तान** में।
- NATO does not have a separate independent force, but when required, combines resources and personnel of the 32 members that operate under a unified command structure called the Supreme Headquarters Allied Powers Europe (SHAPE), based in Belgium. **NATO** के पास कोई स्वतंत्र सेना नहीं है, बल्कि आवश्यकता पड़ने पर यह 32 सदस्यों के **संसाधनों और कर्मियों** को मिलाकर **एकीकृत कमांड संरचना (SHAPE)** के तहत संचालित करता है, जो **बेल्जियम** में स्थित है।
- It is led by the Supreme Allied Commander Europe, a U.S. 4-star General or Admiral who heads the U.S. European Command. इसका नेतृत्व **सुप्रीम एलाइड कमांडर यूरोप** करता है, जो एक **अमेरिकी 4-स्टार जनरल या एडमिरल** होता है।
- Although Ukraine has now backed away from plans to join NATO, Ukrainian forces have worked closely with NATO after Russia launched its 'Special Military Operations' in February



2022.

हालांकि यूक्रेन ने अब NATO में शामिल होने की योजना छोड़ दी है, लेकिन फरवरी 2022 में रूस के विशेष सैन्य अभियान के बाद उसने NATO के साथ मिलकर काम किया है।

- They have received major aid packages, including a \$40 billion pledge at the NATO Summit in 2024, training, and security assistance.  
उन्हें \$40 बिलियन सहायता, प्रशिक्षण और सुरक्षा सहयोग मिला है, जिसमें 2024 के NATO शिखर सम्मेलन में वादा किया गया था।
- As a result, Mr. Trump has complained that when it came to his demands that NATO members support U.S. operations in Iran, send their navies to help open up the Strait of Hormuz, or facilitate refuelling and overnight missions, their response should have been “automatic”.  
इसके परिणामस्वरूप, ट्रम्प ने शिकायत की कि जब उन्होंने NATO सदस्यों से ईरान में अभियान, हॉर्मुज जलडमरूमध्य में मदद, या रीफ्यूलिंग और ओवरफ्लाइट मिशन में सहयोग मांगा, तो उनका जवाब “स्वचालित” होना चाहिए था।
- “We’ve been there automatically, including Ukraine,” he said.  
“हम हमेशा वहां रहे हैं, जिसमें यूक्रेन भी शामिल है,” उन्होंने कहा।
- “Ukraine wasn’t our problem.  
“यूक्रेन हमारी समस्या नहीं था।
- It was a test, and we were there for them, and we would always have been there for them.  
यह एक परीक्षा थी, और हम उनके लिए वहां थे, और हमेशा रहते।
- They weren’t there for us,” he told The Telegraph.  
लेकिन वे हमारे लिए वहां नहीं थे,” उन्होंने The Telegraph से कहा।

### How much does the U.S. fund NATO operations? अमेरिका NATO को कितना वित्त देता है?

- Throughout all these operations, the U.S. has provided much of NATO’s funding, including 62% of the defence spending and about 15% of the civil budget of the alliance.  
इन सभी अभियानों में, अमेरिका ने NATO की अधिकांश वित्तीय सहायता प्रदान की है, जिसमें 62% रक्षा खर्च और लगभग 15% नागरिक बजट शामिल है।
- It also provides NATO countries with a “nuclear umbrella” and maintains U.S. military bases that enhance deterrence in the region.  
यह NATO देशों को “परमाणु छत्र” भी प्रदान करता है और क्षेत्र में अमेरिकी सैन्य ठिकानों को बनाए रखता है।
- Under increasing security concerns and U.S. pressure, all NATO members agreed at the 2025 Hague Summit to raise defence spending to 5% of their GDP by 2035, but Mr. Trump has continued to chide allies to share more of the burden.  
बढ़ती सुरक्षा चिंताओं और अमेरिकी दबाव के तहत, सभी NATO सदस्यों ने 2025 के हेग शिखर सम्मेलन में 2035 तक GDP का 5% रक्षा खर्च करने पर सहमति जताई, लेकिन ट्रम्प सहयोगियों से अधिक योगदान की मांग करते रहे।

### How hard would it be for the U.S. to pull out of NATO? अमेरिका के लिए NATO से बाहर निकलना कितना कठिन होगा?

- A U.S. exit from NATO or the Alliance Treaty seems unimaginable and is many times more difficult than its exit from more than 60 different multilateral organisations and treaties, including the World Health Organization and the United Nations Framework Convention on Climate Change in January 2026, and much more legally complex than the U.K.’s exit from the European Union (Brexit) in January 2020.  
NATO से अमेरिका का बाहर निकलना लगभग असंभव लगता है और यह WHO तथा UNFCCC जैसे संगठनों से बाहर निकलने की तुलना में कई गुना अधिक कठिन और ब्रेक्सिट से भी अधिक जटिल है।
- Article 13 of the North Atlantic Treaty provides for the withdrawal of any member, but says the member must submit a one-year “notice of denunciation... to the Government of the United States of America, which will inform the Governments of the other Parties.”



**नॉर्थ अटलांटिक संधि का अनुच्छेद 13** सदस्य को बाहर निकलने की अनुमति देता है, लेकिन एक वर्ष का नोटिस देना अनिवार्य है।

- As the depository authority, the U.S. government would therefore have to hand itself the notice, and then inform other countries, which would make for an awkward process. चूंकि **अमेरिकी सरकार** ही इस संधि की संरक्षक है, इसलिए उसे खुद को नोटिस देना होगा, जो एक **अजीब प्रक्रिया** होगी।
- In addition, and as a measure against Mr. Trump's own statements in his first tenure, the Biden administration pushed a law through the U.S. Congress in 2023 that prohibits the U.S. President from trying to "suspend, terminate, denounce, or withdraw the United States from the North Atlantic Treaty — without the advice and consent of the Senate or an act of Congress". इसके अलावा, **बाइडेन प्रशासन** ने 2023 में एक कानून पारित किया, जो राष्ट्रपति को **सीनेट की अनुमति** के बिना NATO से बाहर निकलने से रोकता है।
- Alternative paths could see the U.S. withdraw personnel from SHAPE or skip NATO meetings — in the manner India has withdrawn from attending SAARC summits — which would make the organisation virtually defunct. वैकल्पिक रूप से, अमेरिका **SHAPE** से अपने कर्मियों को हटा सकता है या बैठकों में शामिल न होकर संगठन को लगभग **निष्क्रिय** बना सकता है।
- In terms of its impact on the world order, especially in the midst of a war, the U.S.' withdrawal from NATO would lead to the remaking of all global security structures, severely weaken the hold of the Western coalition, and strengthen other global powers such as Russia and China. वैश्विक व्यवस्था पर प्रभाव के संदर्भ में, विशेषकर युद्ध के दौरान, NATO से अमेरिका का बाहर निकलना **वैश्विक सुरक्षा ढांचे** को बदल देगा, **पश्चिमी गठबंधन** को कमजोर करेगा और **रूस व चीन** को मजबूत करेगा।
- It is therefore more likely that both the U.S. and its NATO allies will work to avoid such a drastic step, beginning with the visit of NATO Secretary General Mark Rutte to Washington on April 8. इसलिए यह अधिक संभावना है कि अमेरिका और उसके NATO सहयोगी ऐसे कदम से बचने की कोशिश करेंगे, जिसकी शुरुआत **NATO महासचिव मार्क रुटे** की 8 अप्रैल को **वाशिंगटन यात्रा** से होगी।

## Iran executes two members of banned group, MEK, says judiciary



**GS II: IR** AFP  
Iran on Saturday executed two men convicted of membership in a banned opposition group and carrying out disruptive actions aimed at overthrowing the Islamic republic, the judiciary said. The executions were the latest in a series targeting members of the banned People's Mujahedin of Iran (MEK). AFP

## 05A. Iran executes two members of banned group, MEK, says judiciary

**ईरान ने प्रतिबंधित संगठन MEK के दो सदस्यों को फांसी दी, न्यायपालिका ने कहा**

- Iran executes two members of banned group, MEK, says judiciary. **ईरान ने प्रतिबंधित संगठन MEK के दो सदस्यों को फांसी दी, न्यायपालिका ने कहा।**
- Iran on Saturday executed two men convicted of membership in a banned opposition group and carrying out disruptive actions aimed at overthrowing the Islamic republic, the judiciary said. **ईरान ने शनिवार को दो लोगों को फांसी दी, जिन्हें प्रतिबंधित विपक्षी समूह का सदस्य होने और इस्लामी गणराज्य को गिराने की कोशिश**

के लिए दोषी ठहराया गया था।

- The executions were the latest in a series targeting members of the banned People's Mujahedin of Iran (MEK). ये फांसी **People's Mujahedin of Iran (MEK)** के सदस्यों के खिलाफ चल रही कार्रवाई की **नई कड़ी** हैं।



## Iraq shuts key Shalamcheh trade crossing with Iran after air strikes



**GS II: IR**  
Iraq closed the Shalamcheh border crossing with Iran after air strikes on the Iranian side killed an Iraqi citizen, security sources said on Saturday, shutting off a vital supply artery. The crossing serves as one of the main routes for imports of vegetables and other food supplies to Iraq from Iran, traders say. REUTERS

## 05A. Iraq shuts key Shalamcheh trade crossing with Iran after air strikes

### इराक ने हवाई हमलों के बाद ईरान के साथ प्रमुख शालामचेह व्यापार मार्ग बंद किया

- Iraq shuts key Shalamcheh trade crossing with Iran after air strikes.  
इराक ने शालामचेह व्यापार मार्ग को हवाई हमलों के बाद बंद कर दिया।
- Iraq closed the Shalamcheh border crossing with Iran after air strikes on the Iranian side killed an Iraqi citizen, security sources said on Saturday, shutting off a vital supply artery.  
इराक ने ईरान सीमा के शालामचेह क्रॉसिंग को बंद कर दिया, क्योंकि हवाई हमलों में एक इराकी नागरिक की मौत हो गई।

- The crossing serves as one of the main routes for imports of vegetables and other food supplies to Iraq from Iran, traders say.  
यह मार्ग सब्जियों और खाद्य आपूर्ति के लिए मुख्य आयात मार्गों में से एक है।

## GS Paper III: Economy,

### TOPICS COVERED

05 April 2026

**05A** **RBI set for anti-mis-selling norms, focus on incentives**  
RBI द्वारा गलत बिक्री रोकने के नियम, प्रोत्साहनों पर ध्यान

## RBI set for anti-mis-selling norms, focus on incentives

**GS III: Economy**  
Lalendu Mishra  
MUMBAI

The Reserve Bank of India (RBI) may announce final guidelines on 'Responsible Business Conduct' - rules to prevent mis-selling by banks soon, to protect the interest of citizens.

The draft guidelines with likely implementation date of July 1 are expected to outline how banks should distribute third-party financial products, especially insurance and how to make insurance distribution more transparent.

But the main driver of mis-selling is commissions paid by insurers, which fall under IRDAI's purview.

IRDAI, examining the issue since 2023, initially capped total management expenses, including commissions. However, commission expenses across life and non-life insurance continued rising faster than premiums.

As per IRDAI's latest annual report, total commissions in life insurance alone stood at ₹60,800 crore in FY25, up 18% year-on-year, while premiums grew in single digits.

First-year commissions rose over 20% while single-premium payouts jumped nearly 37%. Industry executives said this reflected aggressive acquisition strategies of insurers.

Reportedly, an elderly woman was recently made to withdraw all her fixed deposits to buy a single-



**Tackling head on:** Main driver of mis-selling is commissions paid by insurers, which fall under IRDAI's purview. REUTERS

premium policy and this case highlighted how agents get enriched, at the cost of customers who ended up paying higher premiums to enable insurers to pay higher commissions for customer acquisition.

### Significant changes

IRDAI is proposing significant changes in the insurance commission structure to address rising costs and ensure sustainability.

Reportedly the regulator is considering fixing commissions itself rather than leaving it to insurers or introducing any caps.

However, it may not be the most effective way to curb malpractices, as per industry officials.

"Instead, IRDAI could consider making the board of insurance companies responsible and accountable for fixing commissions.

Insurers could be required to adopt a board-approved commission policy

ensuring commissions stay within overall Expense of Management (EOM) limits, supported by regulatory disclosures. This would create accountability at the highest level while still allowing flexibility," an industry official said.

"A still better solution would be to stagger the payment of commissions," the official added.

Today, banking distributors earn most of the commission upfront, often passed on as incentives to staff authorised to sell insurance. The quantum can be significant and because it is largely front-loaded, it tilts the scales.

Sellers are motivated to push products aggressively, secure fee and move on. Moving toward trail-based commissions and removing sales inducements may not just curb mis-selling but help restore trust in insurance itself, according to some industry officials.

## 05A. RBI set for anti-mis-selling norms, focus on incentives

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## RBI द्वारा गलत बिक्री रोकने के नियम, प्रोत्साहनों पर ध्यान

- RBI set for anti-mis-selling norms, focusing on incentives.  
RBI गलत बिक्री रोकने के लिए नियम लाने की तैयारी में, प्रोत्साहनों पर ध्यान।
- The Reserve Bank of India (RBI) may announce final guidelines on 'Responsible Business Conduct' - rules to prevent mis-selling by banks soon, to protect the interest of citizens.  
भारतीय रिजर्व बैंक (RBI) जल्द ही 'Responsible Business Conduct' पर अंतिम दिशानिर्देश जारी कर सकता है, ताकि ग्राहकों के हित सुरक्षित रहें।
- The draft guidelines with likely implementation date of July 1 are expected to outline how banks should distribute third-party financial products, especially insurance and how to make insurance distribution more transparent.  
ड्राफ्ट दिशानिर्देश, जिनका संभावित लागू होने की तारीख 1 जुलाई है, यह बताएंगे कि बैंक थर्ड-पार्टी वित्तीय उत्पाद, खासकर बीमा, कैसे वितरित करें और इसे अधिक पारदर्शी बनाएं।
- But the main driver of mis-selling is commissions paid by insurers, which fall under IRDAI's purview.  
लेकिन गलत बिक्री का मुख्य कारण बीमा कंपनियों द्वारा दिए जाने वाले कमीशन हैं, जो IRDA के दायरे में आते हैं।
- IRDAI, examining the issue since 2023, initially capped total management expenses, including commissions.  
IRDA 2023 से इस मुद्दे की जांच कर रहा है और उसने कुल प्रबंधन खर्च (जिसमें कमीशन शामिल है) पर सीमा लगाई थी।
- However, commission expenses across life and non-life insurance continued rising faster than premiums.  
लेकिन जीवन और गैर-जीवन बीमा में कमीशन खर्च प्रीमियम से तेज बढ़ता रहा।
- As per IRDAI's latest annual report, total commissions in life insurance alone stood at ₹60,800 crore in FY25, up 18% year-on-year, while premiums grew in single digits.  
IRDA की रिपोर्ट के अनुसार, जीवन बीमा कमीशन FY25 में ₹60,800 करोड़ रहा, जो 18% बढ़ा, जबकि प्रीमियम धीमी गति से बढ़े।
- First-year commissions rose over 20% while single-premium payouts jumped nearly 37%.  
पहले वर्ष के कमीशन 20% से अधिक बढ़े, जबकि सिंगल प्रीमियम भुगतान लगभग 37% बढ़ा।
- Industry executives said this reflected aggressive acquisition strategies of insurers.  
उद्योग विशेषज्ञों के अनुसार, यह आक्रामक ग्राहक अधिग्रहण रणनीति को दर्शाता है।
- Reportedly, an elderly woman was recently made to withdraw all her fixed deposits to buy a single-premium policy and this case highlighted how agents get enriched, at the cost of customers who end up paying higher premiums to enable insurers to pay higher commissions for customer acquisition.  
एक मामले में, एक बुजुर्ग महिला से FD निकालकर बीमा खरीदवाया गया, जिससे दिखा कि एजेंट ग्राहकों के नुकसान पर लाभ कमाते हैं।

### Significant changes

#### महत्वपूर्ण बदलाव

- IRDAI is proposing significant changes in the insurance commission structure to address rising costs and ensure sustainability.  
IRDA बीमा कमीशन संरचना में बड़े बदलाव का प्रस्ताव दे रहा है।
- Reportedly the regulator is considering fixing commissions itself rather than leaving it to insurers or introducing any caps.  
नियामक स्वयं कमीशन तय करने पर विचार कर रहा है।
- However, it may not be the most effective way to curb malpractices, as per industry officials.  
लेकिन विशेषज्ञों के अनुसार, यह तरीका दुरुपयोग रोकने में प्रभावी नहीं हो सकता।
- "Instead, IRDAI could consider making the board of insurance companies responsible and accountable for fixing commissions.  
विशेषज्ञों ने सुझाव दिया कि बीमा कंपनियों के बोर्ड को जिम्मेदार बनाया जाए।
- Insurers could be required to adopt a board-approved commission policy ensuring commissions stay within overall Expense of Management (EOM) limits, supported by



regulatory disclosures.

कंपनियों को **EOM सीमा** के भीतर कमीशन रखने के लिए नीति अपनानी चाहिए।

- This would create accountability at the highest level while still allowing flexibility,” an industry official said.  
इससे **जवाबदेही** बढ़ेगी और **लचीलापन** भी रहेगा।
- “A still better solution would be to stagger the payment of commissions,” the official added.  
एक और बेहतर समाधान **कमीशन भुगतान को चरणबद्ध करना** है।
- Today, banking distributors earn most of the commission upfront, often passed on as incentives to staff authorised to sell insurance.  
आज, बैंक वितरक **अग्रिम कमीशन** कमाते हैं, जो स्टाफ को **प्रोत्साहन** के रूप में दिया जाता है।
- The quantum can be significant and because it is largely front-loaded, it tilts the scales.  
यह राशि काफी बड़ी होती है और **फ्रंट-लोडेड** होने के कारण संतुलन बिगाड़ती है।
- Sellers are motivated to push products aggressively, secure fees and move on.  
विक्रेता **आक्रामक बिक्री** के लिए प्रेरित होते हैं।
- Moving toward trail-based commissions and removing sales inducements may not just curb mis-selling but help restore trust in insurance itself, according to some industry officials.  
**ट्रेल-बेस्ड कमीशन** और प्रोत्साहन हटाने से गलत बिक्री कम होगी और **बीमा पर भरोसा** बढ़ेगा।

### GS Paper III: S&T,

#### TOPICS COVERED

05 April 2026

05A	ISRO to test astronaut capability in a high altitude environment उच्च ऊंचाई वाले वातावरण में अंतरिक्ष यात्री क्षमता का परीक्षण करेगा ISRO
05A	Mission moon चंद्र मिशन
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05A	New data explain how black holes have ‘forbidden masses’ नए आंकड़े बताते हैं कि ब्लैक होल के ‘निषिद्ध द्रव्यमान’ कैसे होते हैं
05A	Speeding up enzyme reactions in microbes using light प्रकाश का उपयोग कर सूक्ष्मजीवों में एंजाइम प्रतिक्रियाओं को तेज करना
05A	Bon appetite and voyage बॉन एपेटाइट और यात्रा



# ISRO to test astronaut capability in a high altitude environment

GS III: S&T

Press Trust of India  
NEW DELHI

The Indian Space Research Organisation (ISRO) has announced the launch of a mission in Ladakh to examine the physiological, psychological and operational dynamics of astronauts and ground teams functioning in a high-altitude environment.

Known as **Mission MITRA** (Mapping of Interoperable Traits and Response Assessment), the study will be conducted until April 9 at an altitude of approximately 3,500 metres in Leh, simulating the environmental conditions of hypoxia, low temperature and isolation as a natural analog for spaceflight operations.

“This study is targeted to generate vital understanding on the team inter-



Astronauts will be kept in challenging conditions. PTI

operability between crew and ground control teams and effectiveness of decision making under environmental and operational stress,” the ISRO said in a statement on April 3. “Analog missions conducted under controlled yet realistic conditions are utilised to understand how crew performs under challenging conditions.”

के लिए एक प्राकृतिक समानता प्रदान करता है।

- “This study is targeted to generate vital understanding on the team interoperability between crew and ground control teams and effectiveness of decision making under environmental and operational stress,” the ISRO said in a statement on April 3.  
“यह अध्ययन कू और ग्राउंड कंट्रोल टीमों के बीच टीम इंटरऑपरेबिलिटी और पर्यावरणीय तथा संचालनात्मक तनाव के तहत निर्णय लेने की प्रभावशीलता पर महत्वपूर्ण समझ विकसित करने के लिए लक्षित है,” ISRO ने 3 अप्रैल को एक बयान में कहा।
- “Analog missions conducted under controlled yet realistic conditions are utilised to understand how crew performs under challenging conditions.”  
“नियंत्रित लेकिन यथार्थवादी परिस्थितियों में किए गए एनालॉग मिशन का उपयोग यह समझने के लिए किया जाता है कि कू चुनौतीपूर्ण परिस्थितियों में कैसे प्रदर्शन करता है।”

## 05A. ISRO to test astronaut capability in a high altitude environment

### उच्च ऊंचाई वाले वातावरण में अंतरिक्ष यात्री क्षमता का परीक्षण करेगा ISRO

• ISRO to test astronaut capability in a high altitude environment.

ISRO उच्च ऊंचाई वाले वातावरण में अंतरिक्ष यात्री क्षमता का परीक्षण करेगा।

• The Indian Space Research Organisation (ISRO) has announced the launch of a mission in Ladakh to examine the physiological, psychological and operational dynamics of astronauts and ground teams functioning in a high-altitude environment.

भारतीय अंतरिक्ष अनुसंधान संगठन (ISRO) ने लद्दाख में एक मिशन शुरू करने की घोषणा की है, जिसका उद्देश्य अंतरिक्ष यात्रियों और ग्राउंड टीमों के शारीरिक, मनोवैज्ञानिक और संचालन संबंधी गतिशीलता का अध्ययन करना है, जो उच्च ऊंचाई वाले वातावरण में कार्य कर रहे हैं।

• Known as Mission MITRA (Mapping of Interoperable Traits and Response Assessment), the study will be conducted until April 9 at an altitude of approximately 3,500 metres in Leh, simulating the environmental conditions of hypoxia, low temperature and isolation as a natural analog for spaceflight operations.

इसे मिशन MITRA (Mapping of Interoperable Traits and Response Assessment) के नाम से जाना जाता है, यह अध्ययन 9 अप्रैल तक लेह में लगभग 3,500 मीटर की ऊंचाई पर किया जाएगा, जिसमें हाइपोक्सिया, कम तापमान और अलगाव जैसी पर्यावरणीय परिस्थितियों का अनुकरण किया जाएगा, जो अंतरिक्ष उड़ान संचालन



# Mission moon

## Artemis II

The U.S. has cast the programme to return American astronauts to the moon as part of a race against China, but Beijing views its mission differently

GS III: S&T

Vasudevan Mukunth

An irony hides in the context of the NASA Artemis II launch on April 2. The U.S. has both openly and in internal reports cast the Artemis programme to return American astronauts to the moon as part of a race against China. But as China in Space editor Jack Congram has pointed out, China does not believe it is racing the U.S. to the moon.

Instead, it has developed its programme to send Chinese astronauts (taikonauts) to the moon as part of a national programme, with ties to local industries and developmental goals. The Chinese government is thus committed to funding the programme and providing political support for it, allowing it to advance at a steady pace – one that has evidently unnerved the U.S.

Under pressure, NASA, in its public messaging at least, has responded by describing its priorities and urgency in terms of being in a race with the China National Space Administration (CNSA), with the U.S. state providing vacillating support for those priorities: swinging one way because of the costs, then the other because 'beating' China offers the prospect of projecting American supremacy in at least one



high-technology domain, after having that undermined in semiconductor and clean energy.

The irony? As Mr. Congram put it, the liberal democracy "sees the moon as a proving ground in a geopolitical contest", with commercial connotations tacked on, while the party state "views it as an extension of long-term science-driven development". Perhaps this is not an irony at all given the success of China's state-directed technological development in the last half century, or perhaps CNSA's apparent indifference to NASA's efforts is rooted in secure knowledge that it is, in fact, ahead. Either way, China is giving the U.S. more than a run for its money.

### Chinese pressure

And if the Chinese pressure is taken away, the U.S. may lose the sole reason it is in such a rush to return American astronauts to the moon. Politicians, policy-makers, and pundits have mentioned research and

exploration but they don't seem to be driving forces. In fact, as astrophysicist Erika Nesvold has observed, neither the U.S. government nor NASA has formally articulated what is so objectionable about allowing Chinese astronauts on the moon first (a stand reminiscent of U.S. President Donald Trump's speech on the same day, April 2, about why he went to war against Iran.)

This extended preamble may be necessary to understand the NASA Artemis programme because, in general, the sights and sounds of any sufficiently 'large' space mission can spark enough awe and wonder to blow away sceptical thoughts. The spectacle alone can seem sufficient reason to do it.

When the 98-m-tall Space Launch System (SLS) rocket lifted off with the Orion capsule and its crew of four astronauts early on April 2, there were cheers on the ground and around the world. These machines were products of a sophis-

ticated engineering effort. The rocket's core stage was powered by four RS-25 engines and two five-part boosters that together exerted more liftoff thrust than the workhorse of the Apollo missions.

This configuration was required to support the Orion crew capsule, which has been integrated with the European Service Module to provide propulsion and life-support systems. Orion is a little larger than a Maruti Suzuki Swift, weighs 11 tonnes (26 tonnes including the service module), can sustain a crew of four for 21 days, includes an advanced launch abort system for crew safety, and uses modern avionics and touchscreen interfaces instead of the largely analogue controls of earlier spacecraft. The capsule's 5-metre-wide heat shield is also the largest of its kind.

There is in all of us a tendency to equate one country's achievement in spaceflight as being indicative of what humans as a species are capable of. Space is hard and the astronauts who 'survive' it are (technically) proof that we can all survive it. But as much as this tendency is justified, and lends itself to gratifying romanticisms, it bears remembering that at least for now the Artemis programme is a flawed representative of the human aspirations for space.

## 05A. Mission moon चंद्र मिशन

- Mission moon.  
चंद्र मिशन।
- The U.S. has cast the programme to return American astronauts to the moon as part of a race against China, but Beijing views its mission differently.  
अमेरिका ने अमेरिकी अंतरिक्ष यात्रियों को चंद्रमा पर वापस भेजने के कार्यक्रम को चीन के खिलाफ दौड़ के रूप में प्रस्तुत किया है, लेकिन बीजिंग इसे अलग तरीके से देखता है।
- An irony hides in the context of the NASA Artemis II launch on April 2.  
2 अप्रैल को NASA Artemis II प्रक्षेपण के संदर्भ में एक विडंबना छिपी हुई है।



- The U.S. has both openly and in internal reports cast the Artemis programme to return American astronauts to the moon as part of a race against China.  
अमेरिका ने खुले तौर पर और आंतरिक रिपोर्टों में **Artemis कार्यक्रम** को चीन के खिलाफ दौड़ का हिस्सा बताया है।
- But as China in Space editor Jack Congram has pointed out, China does not believe it is racing the U.S. to the moon.  
लेकिन **Jack Congram** के अनुसार, **चीन** यह नहीं मानता कि वह अमेरिका के साथ चंद्रमा की दौड़ में है।
- Instead, it has developed its programme to send Chinese astronauts (taikonauts) to the moon as part of a national programme, with ties to local industries and developmental goals.  
इसके बजाय, चीन ने अपने **अंतरिक्ष यात्रियों (ताइकॉनॉट्स)** को चंद्रमा पर भेजने का कार्यक्रम एक **राष्ट्रीय विकास कार्यक्रम** के रूप में विकसित किया है।
- The Chinese government is thus committed to funding the programme and providing political support for it, allowing it to advance at a steady pace — one that has evidently unnerved the U.S.  
इसलिए **चीनी सरकार** इस कार्यक्रम को **वित्तीय और राजनीतिक समर्थन** दे रही है, जिससे यह स्थिर गति से आगे बढ़ रहा है, जो अमेरिका को चिंतित कर रहा है।
- Under pressure, NASA, in its public messaging at least, has responded by describing its priorities and urgency in terms of being in a race with the China National Space Administration (CNSA), with the U.S. state providing vacillating support for those priorities: swinging one way because of the costs, then the other because 'beating' China offers the prospect of projecting American supremacy in at least one high-technology domain, after having that undermined in semiconductor and clean energy.  
दबाव में, **NASA** ने अपनी प्राथमिकताओं को **China National Space Administration (CNSA)** के साथ दौड़ के रूप में प्रस्तुत किया है, जबकि अमेरिकी सरकार का समर्थन **अस्थिर** रहा है—कभी लागत के कारण और कभी चीन को हराने के लिए।

### The irony? विडंबना?

- As Mr. Congram put it, the liberal democracy “sees the moon as a proving ground in a geopolitical contest”, with commercial connotations tacked on, while the party state “views it as an extension of long-term science-driven development”.  
जैसा कि **Congram** ने कहा, **उदार लोकतंत्र** चंद्रमा को **भूराजनीतिक प्रतिस्पर्धा का मंच** मानता है, जबकि **पार्टी राज्य** इसे **दीर्घकालिक वैज्ञानिक विकास** का विस्तार मानता है।
- Perhaps this is not an irony at all given the success of China's state-directed technological development in the last half century, or perhaps CNSA's apparent indifference to NASA's efforts is rooted in secure knowledge that it is, in fact, ahead.  
शायद यह विडंबना नहीं है, क्योंकि चीन का **तकनीकी राष्ट्रवाद** सफल रहा है, या फिर **CNSA** को विश्वास है कि वह आगे है।
- Either way, China is giving the U.S. more than a run for its money.  
किसी भी स्थिति में, **चीन** अमेरिका को कड़ी चुनौती दे रहा है।

### Chinese pressure चीनी दबाव

- And if the Chinese pressure is taken away, the U.S. may lose the sole reason it is in such a rush to return American astronauts to the moon.  
यदि **चीनी दबाव** हटा दिया जाए, तो अमेरिका चंद्रमा मिशन की **मुख्य प्रेरणा** खो सकता है।
- Politicians, policymakers, and pundits have mentioned research and exploration but they don't seem to be driving forces.  
**राजनेता और नीति निर्माता** शोध और अन्वेषण की बात करते हैं, लेकिन वे मुख्य प्रेरक नहीं हैं।
- In fact, as astrophysicist Erika Nesvold has observed, neither the U.S. government nor NASA has formally articulated what is so objectionable about allowing Chinese astronauts on the moon — first (a stand reminiscent of U.S. President Donald Trump's speech on the same day, April 2, about why he went to war against Iran.)



**Erika Nesvold** के अनुसार, न तो अमेरिकी सरकार और न ही NASA ने स्पष्ट किया है कि चीन को पहले चंद्रमा पर जाने से आपत्ति क्यों है।

- This extended preamble may be necessary to understand the NASA Artemis programme because, in general, the sights and sounds of any sufficiently 'large' space mission can spark enough awe and wonder to blow away sceptical thoughts.  
यह प्रस्तावना **Artemis कार्यक्रम** को समझने के लिए जरूरी है, क्योंकि बड़े अंतरिक्ष मिशन अक्सर लोगों में **आश्चर्य और रोमांच** पैदा करते हैं।
- The spectacle alone can seem sufficient reason to do it.  
केवल इसका **दृश्य प्रदर्शन** ही इसे करने का कारण लग सकता है।
- When the 98-m-tall Space Launch System (SLS) rocket lifted off with the Orion capsule and its crew of four astronauts early on April 2, there were cheers on the ground and around the world.  
2 अप्रैल को जब **Space Launch System (SLS)** रॉकेट ने **Orion कैप्सूल** के साथ उड़ान भरी, तो पूरी दुनिया में **उत्साह** था।
- These machines were products of a sophisticated engineering sort.  
ये मशीनें **उन्नत इंजीनियरिंग प्रयास** का परिणाम हैं।
- The rocket's core stage was powered by four RS-25 engines and two ve-part boosters that together exerted more lift thrust than the workhorse of the Apollo missions.  
रॉकेट का **कोर स्टेज** चार **RS-25 इंजन** और दो बूस्टर से संचालित था, जो **Apollo मिशनों** से अधिक शक्ति प्रदान करते हैं।
- This configuration was required to support the Orion crew capsule, which has been integrated with the European Service Module to provide propulsion and life-support systems.  
यह संरचना **Orion कैप्सूल** को समर्थन देने के लिए आवश्यक थी, जिसमें **European Service Module** शामिल है।
- Orion is a little larger than a Maruti Suzuki Swift, weighs 11 tonnes (26 tonnes including the service module), can sustain a crew of four for 21 days, includes an advanced launch abort system for crew safety, and uses modern avionics and touchscreen interfaces instead of the largely analogue controls of earlier spacecraft.  
**Orion** कैप्सूल आकार में **Maruti Suzuki Swift** से थोड़ा बड़ा है, 11 टन वजनी है, और 21 दिनों तक चार लोगों को समर्थन दे सकता है।
- The capsule's 5-metre-wide heat shield is also the largest of its kind.  
इसका **5 मीटर चौड़ा हीट शील्ड** अपने प्रकार का सबसे बड़ा है।
- There is in all of us a tendency to equate one country's achievement in space-flight as being indicative of what humans as a species are capable of.  
हम सभी में यह प्रवृत्ति होती है कि किसी एक देश की **अंतरिक्ष उपलब्धि** को पूरी मानवता की क्षमता से जोड़ते हैं।
- Space is hard and the astronauts who 'survive' it are (technically) proof that we can all survive it.  
**अंतरिक्ष कठिन है** और जो अंतरिक्ष यात्री इसमें सफल होते हैं, वे मानव क्षमता का प्रमाण हैं।
- But as much as this tendency is justified, and lends itself to gratifying romanticisms, it bears remembering that at least for now the Artemis programme is a flawed representative of the human aspirations for space.  
लेकिन यह याद रखना चाहिए कि फिलहाल **Artemis कार्यक्रम** मानवता की **अंतरिक्ष आकांक्षाओं** का एक अपूर्ण प्रतिनिधित्व है।



# 'Cloning' hurdle skirted to perfectly copy quantum state

The no-cloning theorem is a quantum physics rule that prohibits a user from perfectly duplicating unknown quantum states; researchers have reported a way around it that could pave the way for technologies like quantum cloud storage

GS III: S&T

S. Srinivasan

Vasudevan Mukunth

Quantum physics has a rule called the no-cloning theorem that prevents you from making a perfect copy of an unknown quantum state. It has shaped everything from quantum cryptography to quantum computing, and researchers have largely accepted it as an inalienable constraint.

Copying data in classical computing is trivial. We routinely copy files to the cloud for backup and make copies of code to share it. Quantum computers, however, cannot do any of this in the obvious way because of the no-cloning theorem, which is thus a serious obstacle to building robust quantum infrastructure.

But recently, a team of physicists from Japan, Canada, Germany, and IBM Quantum experimentally demonstrated a loophole in the theorem, showing that quantum information can indeed be duplicated provided the clones remain encrypted.

### A key for noise

Previous researchers had developed approximate methods that produced imperfect copies with about 83% fidelity, the proven maximum for these approaches. But these copies were noisy and impractical.

In 2023, Koji Yamaguchi and Achim Kempf – two of the new paper's authors – reported the loophole (published in *Physical Review*

## A quantum copier

A way to sidestep the no-cloning theorem paves the way for quantum cloud computing

Researchers have shown a loophole in the no-cloning theorem by creating perfect copies using ideas from information theory

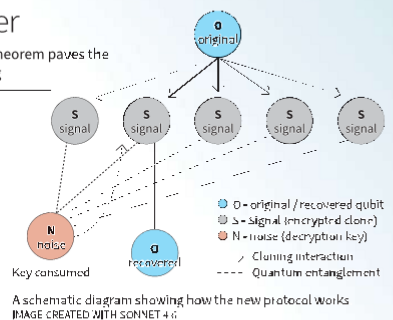
The no-cloning theorem is a quantum physics rule that prohibits a user from perfectly duplicating unknown quantum states

The clones appear as useless random noise until a specific decryption key is applied to restore them

Decrypting a single clone consumes the key, which prevents users from accessing multiple perfect copies simultaneously

Experiments on IBM superconducting processors successfully produced hundreds of encrypted clones while maintaining high reliability

The finding allows scientists to develop quantum cloud storage where data can be recovered even if servers fail



A schematic diagram showing how the new protocol works. IMAGE CREATED WITH SONNET 4 G

Letters on January 6 this year). Rather than accepting degraded copies, they proved (on paper) that it is possible to create perfect ones as long as each copy is scrambled by quantum noise so that it is individually useless.

This noise is not random. It is recorded in a set of 'noise qubits' that serves as the decryption key. To create clones, the original qubit is allowed to interact with a series of signal qubits, called the quantum register, in a way that spreads the information across signal qubits. At this stage, each new qubit is a clone but also a maximally mixed state, meaning it looks like random noise to an observer.

When you want to recover the original state, you apply the decryption operation to any one of the encrypted clones using the full set of noise qubits. This

restores the original perfectly. But the decryption process consumes the key. So after you decrypt one clone, the key is gone and every remaining clone becomes permanently scrambled. Which means you only get one perfect recovery. (The no-cloning theorem says you cannot freely access multiple identical copies.)

### Four tests

To test this idea, the team ran experiments directly on the IBM Heron R2 superconducting processors, which feature 156 physical qubits, using up to 154 qubits across four experiments.

The first experiment measured how fidelity – how close the recovered state is to the original state – decayed as the number of encrypted clones grew from 2 to 15. The team found that making more

copies did not make each copy harder to recover. The second test confirmed that the clones were quantum rather than classical.

The third was the most ambitious. Instead of creating all clones in a single step, the team cloned one qubit, then cloned those clones, and so on.

Using all 154 available qubits, the researchers found that with more qubits with equal levels of noise, up to 729 clones could be produced while keeping the signal detectable.

Finally, the team applied the protocol in parallel across multiple qubits simultaneously entangled in a GHZ state – a complex form of entanglement involving many qubits. And they confirmed that they could use encrypted cloning to back up entire quantum registers rather than just single isolated qubits.

According to the authors of the study, their experiments require scientists to refine the understanding of the no-cloning theorem. They argued that the real constraint is not that quantum information cannot be copied and spread widely – it can – but that the access to that information is restricted and that each setup allows only one shot at retrieving it.

### Rare instance

"For example, encrypted cloning enables... redundant quantum cloud storage: a quantum cloud storage provider hosts encrypted clones of a client's quantum data on separate servers," the authors wrote. "As long as at least one of the servers survives, the client can recover all of their data perfectly by decrypting the surviving clones. Quantum cloud storage could serve as a platform also for quantum cloud computing."

This is a rare instance in which a new, profound idea has been tested almost immediately, and the initial results prove that the protocol performs as expected.

A key advantage of this protocol over many earlier proposals is that the recovered qubit is identical to the original state rather than an approximate copy. The work is sure to stimulate further research on building reliable quantum memories, which are essential for many quantum information processing protocols.

(S. Srinivasan is a professor of physics at Krea University)

## 05A. 'Cloning' hurdle skirted to perfectly copy quantum state

### 'क्लॉनिंग' बाधा को पार कर क्वांटम अवस्था की सटीक नकल

- 'Cloning' hurdle skirted to perfectly copy quantum state. 'क्लॉनिंग' बाधा को पार कर क्वांटम अवस्था की सटीक नकल।
- The no-cloning theorem is a quantum physics rule that prohibits a user from perfectly duplicating unknown quantum states; researchers have reported a way around it that could pave the way for technologies like quantum cloud storage. नो-क्लॉनिंग प्रमेय एक क्वांटम भौतिकी नियम है जो अज्ञात क्वांटम अवस्थाओं की सटीक प्रतिलिपि बनाने से रोकता है; शोधकर्ताओं ने इसका एक वैकल्पिक तरीका खोजा है जो क्वांटम क्लाउड स्टोरेज जैसी तकनीकों का मार्ग प्रशस्त कर सकता है।
- Quantum physics has a rule called the no-cloning theorem that prevents you from making a perfect copy of an unknown quantum state.



**क्वांटम भौतिकी** में एक नियम है जिसे **नो-क्लोनिंग प्रमेय** कहा जाता है, जो अज्ञात **क्वांटम अवस्था** की सटीक नकल बनाने से रोकता है।

- It has shaped everything from quantum cryptography to quantum computing, and researchers have largely accepted it as an inalienable constraint.  
इसने **क्वांटम क्रिप्टोग्राफी** से लेकर **क्वांटम कंप्यूटिंग** तक को प्रभावित किया है और इसे एक **अपरिवर्तनीय बाधा** माना गया है।
- Copying data in classical computing is trivial.  
**क्लासिकल कंप्यूटिंग** में डेटा कॉपी करना आसान है।
- We routinely copy files to the cloud for backup and make copies of code to share it.  
हम नियमित रूप से **फाइलें क्लाउड** में बैकअप के लिए कॉपी करते हैं और **कोड की प्रतियां** साझा करते हैं।
- Quantum computers, however, cannot do any of this in the obvious way because of the no-cloning theorem, which is thus a serious obstacle to building robust quantum infrastructure.  
लेकिन **क्वांटम कंप्यूटर** यह काम नहीं कर सकते क्योंकि **नो-क्लोनिंग प्रमेय** मजबूत **क्वांटम इंफ्रास्ट्रक्चर** के लिए एक बड़ी बाधा है।
- But recently, a team of physicists from Japan, Canada, Germany, and IBM Quantum experimentally demonstrated a loophole in the theorem, showing that quantum information can indeed be duplicated provided the clones remain encrypted.  
हाल ही में, **जापान, कनाडा, जर्मनी और IBM Quantum** के वैज्ञानिकों ने इस प्रमेय में एक **लोophole** दिखाया, जिससे **क्वांटम जानकारी** को **एन्क्रिप्टेड रूप** में कॉपी किया जा सकता है।

### A key for noise नॉइज़ की कुंजी

- Previous researchers had developed approximate methods that produced imperfect copies with about 83% fidelity, the proven maximum for these approaches.  
पहले शोधकर्ताओं ने लगभग **83% फिडेलिटी** के साथ अपूर्ण प्रतियां बनाने के तरीके विकसित किए थे।
- But these copies were noisy and impractical.  
लेकिन ये प्रतियां **नॉइज़ से भरी** और अनुपयोगी थीं।
- In 2023, Koji Yamaguchi and Achim Kempf — two of the new paper's authors — reported the loophole (published in Physical Review Letters on January 6 this year).  
2023 में **Koji Yamaguchi** और **Achim Kempf** ने इस **लोophole** को प्रकाशित किया।
- Rather than accepting degraded copies, they proved (on paper) that it is possible to create perfect ones as long as each copy is scrambled by quantum noise so that it is individually useless.  
उन्होंने दिखाया कि **क्वांटम नॉइज़** के साथ **सटीक प्रतियां** बनाई जा सकती हैं, जो अलग-अलग बेकार होंगी।
- This noise is not random.  
यह **नॉइज़** यादृच्छिक नहीं है।
- It is recorded in a set of 'noise qubits' that serves as the decryption key.  
इसे **'नॉइज़ क्यूबिट्स'** में रिकॉर्ड किया जाता है, जो **डिक्रिप्शन कुंजी** का काम करते हैं।
- To create clones, the original qubit is allowed to interact with a series of signal qubits, called the quantum register, in a way that spreads the information across signal qubits.  
क्लोन बनाने के लिए, मूल **क्यूबिट** को **सिग्नल क्यूबिट्स** के साथ इंटरैक्ट कराया जाता है।
- At this stage, each new qubit is a clone but also a maximally mixed state, meaning it looks like random noise to an observer.  
इस अवस्था में प्रत्येक नया क्यूबिट एक **क्लोन** और साथ ही **मिश्रित अवस्था** होता है।
- When you want to recover the original state, you apply the decryption operation to any one of the encrypted clones using the full set of noise qubits.  
मूल अवस्था को पुनः प्राप्त करने के लिए, **डिक्रिप्शन प्रक्रिया** लागू की जाती है।
- This restores the original perfectly.  
इससे मूल अवस्था पूरी तरह वापस मिलती है।
- But the decryption process consumes the key.  
लेकिन डिक्रिप्शन में **कुंजी समाप्त** हो जाती है।
- So after you decrypt one clone, the key is gone and every remaining clone becomes permanently scrambled.  
एक क्लोन के बाद बाकी सभी **स्थायी रूप से बेकार** हो जाते हैं।



- Which means you only get one perfect recovery.  
इसका मतलब है कि केवल **एक बार पूर्ण रिकवरी** संभव है।
- (The no-cloning theorem says you cannot freely access multiple identical copies.)  
(**नो-क्लॉनिंग प्रमेय** कहता है कि कई समान प्रतियों तक स्वतंत्र पहुंच नहीं हो सकती।)

#### Four tests

#### चार परीक्षण

- To test this idea, the team ran experiments directly on the IBM Heron R2 superconducting processors, which feature 156 physical qubits, using up to 154 qubits across four experiments.  
इस विचार को परखने के लिए, टीम ने **IBM Heron R2 प्रोसेसर** पर प्रयोग किए।
- The first experiment measured how fidelity decayed as the number of encrypted clones grew from 2 to 15.  
पहले प्रयोग में **फिडेलिटी** को मापा गया।
- The team found that making more copies did not make each copy harder to recover.  
टीम ने पाया कि अधिक प्रतियां बनाने से रिकवरी कठिन नहीं हुई।
- The second test confirmed that the clones were quantum rather than classical.  
दूसरे परीक्षण में पुष्टि हुई कि क्लोन **क्वांटम** थे।
- The third was the most ambitious.  
तीसरा परीक्षण सबसे महत्वपूर्ण था।
- Instead of creating all clones in a single step, the team cloned one qubit, then cloned those clones, and so on.  
इसमें चरणबद्ध तरीके से **क्लॉनिंग** की गई।
- Using all 154 available qubits, the researchers found that with more qubits with equal levels of noise, up to 729 clones could be produced while keeping the signal detectable.  
शोधकर्ताओं ने पाया कि **729 क्लोन** तक बनाए जा सकते हैं।
- Finally, the team applied the protocol in parallel across multiple qubits simultaneously entangled in a GHZ state — a complex form of entanglement involving many qubits.  
अंत में, इस तकनीक को **GHZ अवस्था** में लागू किया गया।
- And they confirmed that they could use encrypted cloning to back up entire quantum registers rather than just single isolated qubits.  
उन्होंने दिखाया कि पूरे **क्वांटम रजिस्टर** का बैकअप लिया जा सकता है।
- According to the authors of the study, their experiments require scientists to refine the understanding of the no-cloning theorem.  
लेखकों के अनुसार, यह शोध **नो-क्लॉनिंग प्रमेय** की समझ को बदलता है।
- They argued that the real constraint is not that quantum information cannot be copied and spread widely — it can — but that the access to that information is restricted and that each setup allows only one shot at retrieving it.  
उन्होंने कहा कि **क्वांटम जानकारी कॉपी हो सकती है**, लेकिन उसकी **पहुंच सीमित है**।

#### Rare instance

#### दुर्लभ उदाहरण

- “For example, encrypted cloning enables... redundant quantum cloud storage: a quantum cloud storage provider hosts encrypted clones of a client’s quantum data on separate servers,” the authors wrote.  
लेखकों ने कहा कि यह **क्वांटम क्लाउड स्टोरेज** संभव बनाता है।
- “As long as at least one of the servers survives, the client can recover all of their data perfectly by decrypting the surviving clones.  
जब तक एक सर्वर बचा रहता है, डेटा **पूर्ण रूप से पुनर्प्राप्त** किया जा सकता है।
- Quantum cloud storage could serve as a platform also for quantum cloud computing.”  
यह **क्वांटम क्लाउड कंप्यूटिंग** के लिए भी उपयोगी हो सकता है।
- This is a rare instance in which a new, profound idea has been tested almost immediately, and the initial results prove that the protocol performs as expected.  
यह एक **दुर्लभ उदाहरण** है जहां नई अवधारणा तुरंत परीक्षण में सफल रही।



- A key advantage of this protocol over many earlier proposals is that the recovered qubit is identical to the original state rather than an approximate copy.  
इस तकनीक का लाभ यह है कि **सटीक प्रतिलिपि** मिलती है।
- The work is sure to stimulate further research on building reliable quantum memories, which are essential for many quantum information processing protocols.  
यह कार्य **क्वांटम मेमोरी** पर आगे शोध को प्रेरित करेगा।



GS III: S&T

## New data explain how black holes have 'forbidden masses'

The theory of stars predicts that a dying star can't form a black hole weighing 50 to 130 solar masses, yet gravitational wave observations have detected several black holes in this mass range, puzzling astronomers. By analysing the latest data collected by instruments in Japan, Italy, and the U.S., scientists have now explained this discrepancy as being the result of hierarchical mergers: when two lighter black holes merge to form a heavier one.

merge to form a heavier one.

**जापान, इटली और अमेरिका** के उपकरणों से प्राप्त नवीनतम डेटा का विश्लेषण कर वैज्ञानिकों ने इस विसंगति को **हाइड्रार्किंकल मर्जर** के रूप में समझाया है, जहाँ दो हल्के **ब्लैक होल** मिलकर एक भारी ब्लैक होल बनाते हैं।

## 05A. New data explain how black holes have 'forbidden masses'

**नए आंकड़े बताते हैं कि ब्लैक होल के 'निषिद्ध द्रव्यमान' कैसे होते हैं**

- New data explain how black holes have 'forbidden masses'.  
**नए आंकड़े बताते हैं कि ब्लैक होल के 'निषिद्ध द्रव्यमान' कैसे होते हैं।**

- The theory of stars predicts that a dying star can't form a black hole weighing 50 to 130 solar masses, yet gravitational wave observations have detected several black holes in this mass range, puzzling astronomers.

**तारों का सिद्धांत** कहता है कि एक मरता हुआ तारा **50 से 130 सौर द्रव्यमान** वाले ब्लैक होल नहीं बना सकता, फिर भी **गुरुत्वाकर्षण तरंगों** के अवलोकन में इस दायरे में कई ब्लैक होल मिले हैं, जिससे **खगोलविद** हैरान हैं।

- By analysing the latest data collected by instruments in Japan, Italy, and the U.S., scientists have now explained this discrepancy as being the result of hierarchical mergers: when two lighter black holes

## Speeding up enzyme reactions in microbes using light

GS III: S&T



**SPEAKING OF SCIENCE**  
D. Balasubramanian

We know photosynthesis is a feature of plants which absorb sunlight and use the energy to convert atmospheric CO<sub>2</sub> into glucose. While sunlight peaks in the 400-700 nm region (of wavelengths), scientists have shone ultraviolet radiation (well below 400 nm) on plants and found that this opens new avenues in enzyme engineering and drugs through photocatalysis – the process of using light to jumpstart chemical reactions.

Light-activated enzymes turn light energy into chemical action. In some cases, light triggers lightning-fast shape changes that turn on the enzyme. These movements can now be

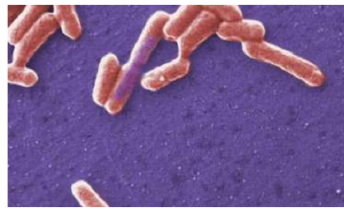
tracked in real-time on a scale of trillionths of a second using ultra-fast imaging.

Researchers at Nanjing University, China, have used visible light to trigger inherent enzymes as catalysts, paving the way for manufacturing useful products and drugs. This technology, called 'photobiocatalysis', repurposes natural enzymes to produce novel products of medicinal value (*Organic Chemistry Frontiers*, 12 (16), April 2025, pages).

Photobiocatalysis pairs the energy of light with the precision engineering of enzymes, allowing scientists to assemble very complex structures.

### Use of microbes

Some plants have been found to contain an alkaloid called securinine. The genes that make this alkaloid resemble bacterial genes and have been bor-



Antaya University, Türkiye, researchers have used *E. coli* bacteria as a versatile factory to produce useful compounds. PUBLIC DOMAIN

rowed from bacteria that invade plants. This discovery has allowed scientists to look for more such repurposed genes in plants and find new paths for drug discovery. These use the molecules offered by microbes in order to produce new defence molecules that are toxic.

Taking a cue from this transfer of genes seen in nature, scientists have engineered the yeast *Pichia pastoris*, which is found in

the soil, to help produce two plant-derived anti-cancer drugs called vinblastine and vincristine (*Nature Synthesis*, 2, 231-242, 2023). These alkaloids, found in the periwinkle plant, are very complex molecules that are put together by the coordinated action of 30 enzymes.

There is also increasing use of intact organisms like mice or zebrafish, and even the bacterial workhorse *Escherichia coli* to

produce novel chemicals of use in agriculture or medicine.

### Driven by light

Ibrahim Incir and Özlem Kaplan from the genetics and bioengineering faculty of Antaya University, Türkiye, have shown that *E. coli* is a versatile cell factory, which has been used to produce novel and useful products such as insulin and other cost-effective proteins of medical interest. Scientists at Kobe University, Japan have similarly used *E. coli* to produce pyridine dicarboxylate, a degradable plastic (*Nature Chemical Biology* 21, 1171-1181 (2025)).

And researchers from DuPont, Wilmington, Delaware have used *E. coli* to convert glucose to an industrial styrene polymer (*Metabolic Engineering* vol. 9, issue 3, May 2007). Likewise, Ajikumar et al. from the Massachusetts In-

stitute of Technology in the U.S. have used *E. coli* to synthesise the precursor of the anti-cancer drug Taxol.

The most recent application of combining photobiocatalysis with a microbial 'bioreactor' has come from the group of Huijin Zhao at the University of Illinois, Urbana-Champaign, who have engineered *E. coli* to produce non-natural olefins and reductases directly from glucose using enzymes activated by blue light. Using *E. coli* allows scientists to scale the process up for large scale production, where they combine biosynthesis with photo-biotechnology (*Nature Catalysis* vol. 9, January 2026, pages 62-72). They also point out that this approach has the potential for large-scale chemical production where reactions driven by light are integrated into cellular metabolism.

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## 05A. Speeding up enzyme reactions in microbes using light प्रकाश का उपयोग कर सूक्ष्मजीवों में एंजाइम प्रतिक्रियाओं को तेज करना

- Speeding up enzyme reactions in microbes using light.  
प्रकाश का उपयोग कर एंजाइम प्रतिक्रियाओं को तेज करना।
- We know photosynthesis is a feature of plants which absorb sunlight and use the energy to convert atmospheric CO<sub>2</sub> into glucose.  
हम जानते हैं कि प्रकाश संश्लेषण पौधों की एक विशेषता है, जिसमें वे सूर्य प्रकाश को अवशोषित कर CO<sub>2</sub> को ग्लूकोज में बदलते हैं।
- While sunlight peaks in the 400-700 nm region (of wavelengths), scientists have shone ultraviolet radiation (well below 400 nm) on plants and found that this opens new avenues in enzyme engineering and drugs through photocatalysis — the process of using light to jumpstart chemical reactions.  
जहां सूर्य प्रकाश 400-700 nm में अधिक होता है, वहीं वैज्ञानिकों ने पराबैंगनी विकिरण का उपयोग कर फोटोकैटलिसिस के माध्यम से नए रास्ते खोजे हैं।
- Light-activated enzymes turn light energy into chemical action.  
प्रकाश-सक्रिय एंजाइम प्रकाश ऊर्जा को रासायनिक क्रिया में बदलते हैं।
- In some cases, light triggers lightning-fast shape changes that turn on the enzyme.  
कुछ मामलों में प्रकाश तेज संरचनात्मक बदलाव उत्पन्न करता है।
- These movements can now be tracked in real-time on a scale of trillionths of a second using ultra-fast imaging.  
इन बदलावों को अब अल्ट्रा-फास्ट इमेजिंग से वास्तविक समय में ट्रैक किया जा सकता है।
- Researchers at Nanjing University, China, have used visible light to trigger inherent enzymes as catalysts, paving the way for manufacturing useful products and drugs.  
नानजिंग विश्वविद्यालय के शोधकर्ताओं ने दृश्य प्रकाश का उपयोग कर एंजाइम को सक्रिय किया।
- This technology, called 'photobiocatalysis', repurposes natural enzymes to produce novel products of medicinal value (Organic Chemistry Frontiers, 12 (16), April 2025, pages).  
इस तकनीक को फोटोबायोकेटलिसिस कहा जाता है, जो औषधीय उत्पादों के निर्माण में मदद करती है।
- Photobiocatalysis pairs the energy of light with the precision engineering of enzymes, allowing scientists to assemble very complex structures.  
यह तकनीक प्रकाश ऊर्जा और एंजाइम इंजीनियरिंग को जोड़ती है।

### Use of microbes सूक्ष्मजीवों का उपयोग

- Some plants have been found to contain an alkaloid called securinine.  
कुछ पौधों में सेक्यूरिनीन एल्कलॉइड पाया गया है।
- The genes that make this alkaloid resemble bacterial genes and have been borrowed from bacteria that invade plants.  
इसके जीन बैक्टीरिया से मिलते-जुलते हैं।
- This discovery has allowed scientists to look for more such repurposed genes in plants and find new paths for drug discovery.  
इस खोज से दवा खोज के नए रास्ते खुले हैं।
- These use the molecules offered by microbes in order to produce new defence molecules that are toxic.  
यह सूक्ष्मजीवों के अणुओं का उपयोग कर नए रक्षात्मक अणु बनाते हैं।
- Taking a cue from this transfer of genes seen in nature, scientists have engineered the yeast *Pichia pastoris*, which is found in the soil, to help produce two plant-derived anti-cancer drugs called vinblastine and vincristine (Nature Synthesis, 2, 231-242, 2023).  
वैज्ञानिकों ने *Pichia pastoris* यीस्ट को इंजीनियर कर विनब्लास्टिन और विनक्रिस्टिन दवाएं बनाई हैं।
- These alkaloids, found in the periwinkle plant, are very complex molecules that are put together by the coordinated action of 30 enzymes.  
ये एल्कलॉइड्स 30 एंजाइमों की संयुक्त क्रिया से बनते हैं।



- There is also increasing use of intact organisms like mice or zebrafish, and even the bacterial workhorse *Escherichia coli* to produce novel chemicals of use in agriculture or medicine.  
चूहे, ज़ेब्राफिश और *Escherichia coli* का उपयोग भी बढ़ रहा है।

### Driven by light प्रकाश द्वारा संचालित

- Ibrahim Incir and Özlem Kaplan from the genetics and bioengineering faculty of Antaya University, Türkiye, have shown that *E. coli* is a versatile cell factory, which has been used to produce novel and useful products such as insulin and other cost-effective proteins of medical interest.  
**Ibrahim Incir और Özlem Kaplan** ने दिखाया कि *E. coli* एक बहुउपयोगी सेल फैक्ट्री है।
- Scientists at Kobe University, Japan have similarly used *E. coli* to produce pyridine dicarboxylate, a degradable plastic (Nature Chemical Biology 21, 1171–1181 (2025)).  
कोबे विश्वविद्यालय के वैज्ञानिकों ने *E. coli* से पाइरीडीन डाइकार्बोक्सिलेट बनाया।
- And researchers from DuPont, Wilmington, Delaware have used *E. coli* to convert glucose to an industrial styrene polymer (Metabolic Engineering vol. 9, issue 3, May 2007).  
**DuPont** के शोधकर्ताओं ने *E. coli* से स्टाइरीन पॉलिमर बनाया।
- Likewise, Ajikumar et al. from the Massachusetts Institute of Technology in the U.S. have used *E. coli* to synthesise the precursor of the anti-cancer drug Taxol.  
**MIT** के वैज्ञानिकों ने *E. coli* से Taxol दवा का precursor बनाया।
- The most recent application of combining photobiosynthesis with a microbial 'bioreactor' has come from the group of Huimin Zhao at the University of Illinois, Urbana-Champaign, who have engineered *E. coli* to produce non-natural olefins and reductases directly from glucose using enzymes activated by blue light.  
**Huimin Zhao** की टीम ने *E. coli* को इंजीनियर कर ब्लू लाइट से नए रसायन बनाए।
- Using *E. coli* allows scientists to scale the process up for large scale production, where they combine biosynthesis with photo-biotechnology (Nature Catalysis vol. 9, January 2026, pages 62-72).  
*E. coli* के उपयोग से बड़े पैमाने पर उत्पादन संभव हुआ है।
- They also point out that this approach has the potential for large-scale chemical production where reactions driven by light are integrated into cellular metabolism.  
उन्होंने बताया कि यह तकनीक बड़े पैमाने पर रासायनिक उत्पादन में उपयोगी हो सकती है।



# Bon appetite and voyage

Before refrigeration, how did seafarers preserve food on long voyages?

**GS III: S&T**

– Prabhakar Jonnalagadda

To preserve a food item meant to remove moisture, increase acidity and/or to use natural preservatives. Meats and fish would be hung over fires before departure as the smoke deposited antimicrobial compounds into the flesh. Then, sailors would pack meat in wooden barrels with dry salt. Fish, especially cod, were dried on wooden racks in the open air until stiff.

Vegetables were stored in vinegar or salt brine. Sauerkraut was a staple on long voyages and its high

acidity preserved it and provided vitamin C, helping prevent scurvy. Dried peas, beans, and lentils stored well without any treatment and were a staple of hot meals. Ships also carried live chickens, pigs, goats, and sometimes cows, penned on deck that provided fresh eggs, milk, and meat in the early weeks of a voyage before being slaughtered one by one. All said, scurvy, caused by vitamin C deficiency, killed more sailors than storms and battles combined, as these methods didn't work for fresh produce.

Readers may send their questions / answers to [science@thehindu.co.in](mailto:science@thehindu.co.in)

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barrels with dry salt.

इसके बाद, नाविक मांस को लकड़ी के बैरल में सूखे नमक के साथ रखते थे।

- Fish, especially cod, were dried on wooden racks in the open air until stiff.

मछली (विशेषकर कॉड) को खुले में लकड़ी के रैक पर सुखाया जाता था।

- Vegetables were stored in vinegar or salt brine.

सब्जियों को सिरका या नमक के घोल में रखा जाता था।

- Sauerkraut was a staple on long voyages and its high acidity preserved it and provided vitamin C, helping prevent scurvy.

सॉरक्राउट लंबी यात्राओं में मुख्य भोजन था और इसकी उच्च अम्लता इसे सुरक्षित रखती थी तथा विटामिन C देती थी।

- Dried peas, beans, and lentils stored well without any treatment and were a staple of hot meals.

सूखे मटर, बीन्स और दालें बिना किसी उपचार के लंबे समय तक सुरक्षित रहती थीं।

- Ships also carried live chickens, pigs, goats, and sometimes cows, penned on deck that provided fresh eggs, milk, and meat in the early weeks of a voyage before being slaughtered one by one.

जहाजों पर मुर्गियां, सूअर, बकरी और गाय भी रखी जाती थीं जो शुरुआत में ताजा अंडे, दूध और मांस देती थीं।

- All said, scurvy, caused by vitamin C deficiency, killed more sailors than storms and battles combined, as these methods didn't work for fresh produce.

अंततः, विटामिन C की कमी से होने वाली स्कर्वी ने तूफानों और युद्धों से अधिक नाविकों की जान ली, क्योंकि ये तरीके ताजे खाद्य पदार्थों के लिए कारगर नहीं थे।

## 05A. Bon appetite and voyage

### बॉन एपेटाइट और यात्रा

- Bon appetite and voyage.

बॉन एपेटाइट और यात्रा।

Before refrigeration, how did seafarers preserve food on long voyages?

रेफ्रिजरेशन से पहले, समुद्री यात्री लंबे सफरों में भोजन को कैसे सुरक्षित रखते थे?

- — Prabhakar Jonnalagadda

— प्रभाकर जोत्रालगड्डा

To preserve a food item meant to remove moisture, increase acidity and/or to use natural preservatives.

भोजन को सुरक्षित रखने का मतलब था नमी हटाना, अम्लता बढ़ाना और/या प्राकृतिक संरक्षक का उपयोग करना।

Meats and fish would be hung over fires before departure as the smoke deposited antimicrobial compounds into the flesh.

मांस और मछली को आग के ऊपर लटकाया जाता था ताकि धुआं एंटीमाइक्रोबियल तत्व जमा कर सके।

- Then, sailors would pack meat in wooden

### GS Paper III: Environment,

#### TOPICS COVERED

05 April 2026

05A Kumkis help tackle a jumbo task in Chittoor

चित्तूर में बड़े कार्य से निपटने में कुमकी हाथियों की मदद



**Horizon awaits**



**GS III Environment**  
Saker falcons with their eyes covered before being released into the wild as part of a population restoration programme led by Saudi Arabia's state-run Saudi Falcons Club with Kazakh partners, at Altyn-Emel National Park in the Almaty region of Kazakhstan. REUTERS

Saker falcons with their eyes covered before being released into the wild as part of a population restoration programme led by Saudi Arabia's state-run Saudi Falcons Club with Kazakh partners, at Altyn-Emel National Park in the Almaty region of Kazakhstan.



View at Nariyala Elephant camp in Ramakuppam. (Below) Specially trained elephants from Karnataka with their mahouts at Palamaner. Each elephant brings a distinct personality to the camps. ARRANGEMENT

# Kumkiks help tackle a jumbo task in Chittoor

The saga of wild elephants raiding crops along forest fringes had been a frequent news story. Conventional responses—firecrackers, drums, or vehicles—soon proved ineffective. Then came the Forest Department's Kumki initiative, which began playing a vital role in guiding wild herds back. Their camp life—bond with mahouts and kavadis, daily routines, strength, and care—captures the essence of this initiative, explores **K. Umashanker**

**"M**y crop is ready for harvest, yet a single night is enough to lose everything," says Rajendran (65), his voice heavy with concern as he surveys his groundnut field near Ragamangenta village in Bangarupalem mandal of Chittoor District. Speaking in Tamil, the farmer turns to elephant tracker Subramani and asks, "Neru iruvu enba kamaazhuvu enba kamaazhuvu?" — "Did you hear them last night, the sound of those kamaazhuvu (wildfires)?"

"They crossed the ridge again. I found fresh tracks near the canal," the farmer says. In response, the elephant tracker crouched down to study the soil. "Amanam, ora chinnu kootam-ainnu, illa aru. Tamil Nadu pakkam irannu vandirukanga. Innu padavali konjam neradu neram thangamanga?" — "Yes, a small herd—five, maybe six. They've moved in from the Tamil Nadu side. This time, they are staying longer," says Subramani.

"We have alerted the Kumki team—a group of specially trained elephants from the Forest Department to manage wild herds," the tracker says calmly. He adds, "They will guide the elephants back before they reach the fields. But you must remain cautious."

The farmer's gaze drifted toward the forest edge. His voice, heavy with worry and almost as if pleading with the universe, carried a simple message: "We don't want trouble. We just want to protect what we've grown." The tracker assured the farmer saying, "They are only looking for food and a path. If we understand their movement, we can avoid conflict."

It is not just about managing elephants. It is about creating a system where both people and wildlife can survive together. This cannot function in isolation. Public support is crucial as it is the responsibility of the wider community to stand by these magnificent elephants, not just admire them.

**G. SUBBIRAJ**  
District Forest Officer (Chittoor).



G. Subbaraj, District Forest Officer, Chittoor.

The mahout describes Jayanth's presence as large yet composed, and highly responsive to commands. He explains that Jayanth can alter the behaviour of an entire herd. Often deployed in front-line situations where direction must be established, Jayanth takes the lead while Vinayak complements him. "Vinayak is more obedient," explains another handler. "He carefully scans the forest terrain and adjoining fields. If the herd charges suddenly or becomes aggressive, Vinayak adapts quickly. He is ever ready to swing into action and restore balance. In fact, both Jayanth and Vinayak rarely charge at their wild counterparts. When the duo advance, the wild elephants often retreat voluntarily into the forest, leaving the fields. The challenge is that they wait for the duo to move away and then return stealthily," he adds.

Together, they form a coordinated unit. Their combined efforts have transformed many potentially volatile encounters into controlled, measured operations. On more than half a dozen occasions, the duo prevented wild herds from crossing the Chennai-Bangalore railway tracks.

In another instance, when a group of elephants from Tamil Nadu began rampaging through crops from Puttur to Nagaluram—over 200 km from their entry point into the Jayanth-Vinayak duo successfully drove them away after a month-long operation.

In addition to the Naniyala camp, established about two decades ago, the department later set up a more recent facility. As an elephant movement

spread into newer pockets of Chittoor district, the limitations of a single camp became evident. A second camp was established at Palamaner about eight months ago. Deputy Chief Minister Pawan Kalyan inaugurated the camp amid much fanfare, but its true significance lies in its long-term vision of coexistence.

**Four Kumkiks join the fight**  
Four elephants—Krishna, Abhimanyu, Ranjan, and Deva—were brought from Karnataka to form the core of this new unit at Palamaner. "These elephants are still under training," says Forest Range Officer (Palamaner) R. Narayana. "They are learning to respond to as many as 64 commands, to work in teams, and to operate in field conditions. It takes time, but they are progressing well."

Each elephant brings a distinct personality to the camp. "Krishna is quick to grasp commands and shows strong learning ability. Abhimanyu is calm and dependable, often preferred in situations requiring steady control. Ranjan has an unpredictable streak, but his responsiveness in critical moments makes him valuable. Deva, despite being blind in one eye, has adapted remarkably well, relying heavily on his bond with handlers."

"They are like individuals, not just animals," says kavadi (mahout's assistant) Hari. "You cannot treat them all the same. You have to understand each one." He adds, "Behind every kumki operation lies a relationship built on trust. Each elephant is paired with a mahout and a kavadi, who stay working closely with it. The bond is not formed overnight; it is built through routine, patience, and constant interaction. They understand our tone, not just our commands," says Nadeem, an experienced mahout at the Palamaner camp. Born into a family of traditional mahouts and having worked in Mudumalai and Bandipur reserves for years, he adds: "Even a slight change in voice, they notice."

"When I take very to my family in Mysore, I feel like returning to my elephant the moment I reach home. Something grips my heart. I begin to feel uneasy, worrying that in my absence, Deva might feel lonely or may not eat well," Nadeem says.

**Care and activities**  
Daily life at the camp revolves around a disciplined routine, with feeding occupying a significant portion of the day. Regularly, sugarcane, jaggery, and green fodder form the staples, supplemented by natural grazing. "An elephant spends most of its day eating," explains the camp's senior zoologist, Bhuvan. "We follow that natural pattern."

Maintaining an equally important role. "In the afternoons, especially during summer, they need to cool down. Once they enter the water, they relax completely. After that, they become much more focused. Moments like these have a different side of the animals—they turn playful, calm, and most childlike. For the mahouts, such moments are reminders that beyond their operational role, these are living beings with their own vibrant moods," says Subbaraj.

Despite the growing importance of kumki elephants, a significant gap remains in public participation. In 2021-2022, then District Forest Officer Ravi Shankar introduced an adoption programme, allowing individuals and organisations to contribute towards the upkeep of elephants. However, the response was zero. "We still need a solution in place," says a senior officer, who explains in part that awareness is still low. No one has come forward."

Maintaining a kumki elephant is resource-intensive. Daily fodder alone requires substantial expenditure, and this is further compounded by elephants' stall salaries, and infrastructure maintenance. Visitors often come to the camps, observe the elephants, and express admiration—but that admiration rarely translates into sustained support.

"Each elephant needs continuous care," DFO Subbaraj says. "This is not a one-time contribution. It requires long-term commitment. A kumki camp is an institution built to last." Despite ground-level challenges, something fundamental is changing in the way people view elephants.

"Earlier, we only saw them as a danger," says a woman farmer who lost her husband in a wild elephant attack near Ramakuppam a few years ago. "Now we understand that they are also trying to survive. The problem is not just them; it is the situation. They roam not to disturb humans, but to find food."

Officials believe that kumki operations have played a major role in this transformation. The sight of trained elephants guiding wild herds without violence has reshaped public perception. "When people see that elephants can be managed without harming them, they feel more confident," says Fayaz, a mahout at the Palamaner camp.

The forests between the Koundinya Sanctuary and Sri Venkateswara National Park are still evolving. With more than a hundred wild elephants in the region, the challenges are far from over. Corridors remain fragmented, and pressure on land continues to grow. Yet, within this changing landscape, the kumki camps stand as a symbol of possibility.

## 05A. Kumkiks help tackle a jumbo task in Chittoor

### चिट्टूर में बड़े कार्य से निपटने में कुमकी हाथियों की मदद

The saga of wild elephants raiding crops along forest fringes had been a frequent news story.

जंगली हाथियों द्वारा फसलों पर हमले की कहानी अक्सर खबरों में रही है।

Conventional responses—firecrackers, drums, or vehicles—soon proved ineffective.

पारंपरिक उपाय—पटाखे, ढोल या वाहन—जल्द ही अप्रभावी साबित हुए।

Then came the Forest Department's Kumki initiative, which began playing a vital role in guiding wild herds back.

फिर वन विभाग की कुमकी पहल आई, जिसने जंगली झुंडों को वापस ले जाने में महत्वपूर्ण भूमिका निभानी शुरू की।

Their camp life—bond with mahouts and kavadis, daily routines, strength, and care—captures the essence of this initiative, explores **K. Umashanker**.

उनका कैम्प जीवन, महावतों और कवादियों के साथ संबंध, दैनिक दिनचर्या, ताकत और देखभाल इस पहल का सार दिखाते हैं।

"My crop is ready for harvest, yet a single night is

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enough to lose everything,” says Rajendran (65), his voice heavy with concern as he surveys his groundnut field near Ragimanupenta village in Bangarupalem mandal of Chittoor District. “मेरी फसल कटाई के लिए तैयार है, फिर भी एक रात में सब कुछ खत्म हो सकता है,” राजेंद्रन (65) कहते हैं, जब वह चित्तूर जिले के खेत का निरीक्षण करते हैं।

- Speaking in Tamil, the farmer turns to elephant tracker Subramani and asks, “Nethu iravu antha ‘kamnaatingala’ satham kettingala?” — “Did you hear them last night, the sound of those kamnaatingala (widows)?”  
तमिल में किसान हाथी ट्रैकर से पूछता है कि क्या उसने रात में उनकी आवाज सुनी।
- “They crossed the ridge again. I found fresh tracks near the canal,” the farmer says.  
किसान कहता है कि हाथी फिर से आए और उसने उनके ताज़ा निशान देखे।
- In response, the elephant tracker crouched down to study the soil.  
इस पर ट्रैकर जमीन की जांच करने के लिए झुक गया।
- “Yes, a small herd—five, maybe six. They’ve moved in from the Tamil Nadu side. This time, they are staying longer,” says Subramani.  
वह कहता है कि यह छोटा झुंड है जो तमिलनाडु से आया है और इस बार ज्यादा समय रुकेगा।
- “We have alerted the Kumki team — a group of specially trained elephants and their mahouts deployed by the forest department to manage wild herds,” the tracker says calmly.  
ट्रैकर कहता है कि कुमकी टीम को सूचित कर दिया गया है जो विशेष रूप से प्रशिक्षित हाथियों की टीम है।
- “They will guide the elephants back before they reach the fields. But you must remain cautious.”  
वे हाथियों को खेतों तक पहुँचने से पहले वापस ले जाएंगे, लेकिन सावधान रहना होगा।
- The farmer’s gaze drifted toward the forest edge.  
किसान की नजर जंगल की ओर चली गई।
- His voice carried a simple message: “We don’t want trouble. We just want to protect what we’ve grown.”  
उसने कहा कि वे केवल अपनी फसल बचाना चाहते हैं।
- The tracker assured the farmer saying: “They are only looking for food and a path.”  
ट्रैकर ने आश्वासन दिया कि हाथी केवल भोजन और रास्ता खोज रहे हैं।
- “If we understand their movement, we can avoid conflict.”  
अगर हम उनके व्यवहार को समझें, तो संघर्ष टाल सकते हैं।

## Human-elephant conflict मानव-हाथी संघर्ष

- The saga of Asian elephants venturing into human habitats is no longer merely a story of fear and panic.  
एशियाई हाथियों का मानव क्षेत्रों में आना अब सिर्फ डर की कहानी नहीं रह गया है।
- It has become one of devastating losses: human lives, livestock, crops, and even wild elephants.  
यह मानव जीवन, पशुधन और फसलों के नुकसान की कहानी बन गया है।
- The elephants reappeared in the tri-state junction in the early 1980s after a hiatus of eight decades.  
हाथी 1980 के दशक में फिर से इस क्षेत्र में लौटे।
- Till 2000, their movement remained seasonal and predictable.  
2000 तक उनका व्यवहार नियमित और अनुमानित था।
- But over the years, the corridor shrank, leading to herds straying across the district.  
समय के साथ जंगल गलियारे सिकुड़ गए और हाथी भटकने लगे।
- Rapid expansion of agriculture and roads fragmented their habitat.  
कृषि और सड़क विस्तार ने उनके आवास को विभाजित कर दिया।
- What was once a continuous forest turned into disconnected patches.  
जो कभी एकजुट जंगल था, अब टुकड़ों में बंट गया।

## The Kumkis कुमकी हाथी



- To tackle crop-raiding herds, the Forest Department introduced kumki-based operations around 2005.  
फसलों को बचाने के लिए **कुमकी ऑपरेशन** 2005 में शुरू हुआ।
- The idea was to use trained elephants guided by mahouts to steer wild herds away.  
इसका उद्देश्य **प्रशिक्षित हाथियों** से जंगली झुंडों को दूर करना था।
- This led to the establishment of the Naniyala Kumki camp.  
इससे **नानियाला कुमकी कैंप** की स्थापना हुई।
- The camp houses experienced kumkis—Jayanth and Vinayak.  
यहाँ **जयन्थ और विनायक** जैसे अनुभवी हाथी हैं।
- Jayanth leads and can intimidate large herds.  
जयन्थ नेतृत्व करता है और बड़े झुंड को डराने में सक्षम है।
- Vinayak is more observant and adaptable.  
विनायक अधिक **सतर्क और अनुकूलनीय** है।
- Together, they form a coordinated unit.  
दोनों मिलकर **समन्वित टीम** बनाते हैं।

### Four Kumkis join the fight चार कुमकी हाथी शामिल

- Four elephants—Krishna, Abhimanyu, Ranjan, and Deva—were brought from Karnataka.  
चार हाथी **कर्नाटक से लाए गए**—कृष्ण, अभिमन्यु, रंजन और देवा।
- They are still under training and learning commands.  
वे अभी **प्रशिक्षण में** हैं और आदेश सीख रहे हैं।
- Each elephant has a unique personality.  
हर हाथी की **अलग पहचान** है।
- “They are like individuals, not just animals,” says a handler.  
हैंडलर कहता है कि वे केवल जानवर नहीं बल्कि **व्यक्तित्व** हैं।

### Care and activities देखभाल और गतिविधियाँ

- Daily life revolves around feeding and routine.  
दैनिक जीवन **खान-पान और दिनचर्या** पर आधारित है।
- Elephants are fed ragi balls, sugarcane, and green fodder.  
उन्हें **रागी, गन्ना और चारा** दिया जाता है।
- Water is essential, especially in summer.  
पानी विशेषकर गर्मियों में **बहुत जरूरी** है।
- Kumki operations have helped change public perception.  
कुमकी ऑपरेशन ने **लोगों की सोच बदलने** में मदद की है।
- People now see elephants as beings trying to survive.  
अब लोग हाथियों को **जीवित रहने की कोशिश करते जीव** मानते हैं।
- The initiative reflects a shift from conflict to coexistence.  
यह पहल **संघर्ष से सह-अस्तित्व** की ओर बदलाव दिखाती है।
- “This is not just about managing elephants,” says Subburaj.  
सुब्बुराज कहते हैं कि यह केवल हाथियों को संभालना नहीं है।
- “It is about creating a system where both people and wildlife can survive together.”  
यह एक ऐसा **सिस्टम बनाने** के बारे में है जहाँ इंसान और वन्यजीव साथ रह सकें।