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19_12_2024 DAILY CURRENT AFFAIRS

TOPICS COVERED

- 1. Positive signals emerge from India-China talks / भारत-चीन वार्ता से सकारात्मक संकेत उभरते हैं (GS Paper-II: India-China)**
- 2. Laapataa Ladies out of Oscars race / लापता लेडीज ऑस्कर दौड़ से बाहर (PCS)**
- 3. H.P. CM 'roasted' over jungle murga; defamation case filed / हिमाचल प्रदेश के मुख्यमंत्री पर 'जंगली मुर्गा' को लेकर आलोचना; मानहानि का मामला दर्ज (GS Paper-III: Environment)**
- 4. UCC will be implemented in Uttarakhand from Jan.: Dhami / उत्तराखंड में जनवरी से लागू होगा समान नागरिक संहिता: धामी (GS Paper-II: UCC)**
- 5. Gaganyaan: assembly of HLVM3 begins at ISRO for uncrewed flight / गगनयान: ISRO में मानव रेटेड लॉन्च वाहन HLVM3 का असंबली शुरू, बिना क्रू के उड़ान के लिए (GS Paper-III: S&T)**
- 6. Govt. school principal in Bihar caught on camera stealing eggs / बिहार में सरकारी स्कूल के प्रिंसिपल कैमरे में अंडे चोरी करते हुए पकड़े गए (GS Paper-IV: Ethics / Essay)**





7. **Strengthening the Roots of an Agri-Carbon Market / कृषि-कार्बन बाजार की जड़ों को मजबूत करना (GS Paper-III: Agri-Carbon Market)**
8. **Electronic Distraction / इलेक्ट्रॉनिक विचलन (GS Paper-II: Elections)**
9. **Making Affordable Generics More Reliable / सस्ते जेनरिक दवाइयों को अधिक विश्वसनीय बनाना (GS Paper-II: Health Sector)**
10. **Romanian Polls Annulled / रोमानियाई चुनाव रद्द किए गए (GS Paper-II: East Europe)**
11. **U.S. Congressional Report on COVID Origins / कोविड के उद्भव पर अमेरिकी कांग्रेस की रिपोर्ट (GS Paper-II: Super Powers)**
12. **Nature whisperers: women's unique connection with the environment / प्रकृति के साथ महिलाओं का अनोखा संबंध (GS Paper-III: Women and Environment / Essay)**
13. **All 17,130 Police Stations in the Country Linked Through Centralised Online Platform CCTNS / देश के सभी 17,130 पुलिस थाने केंद्रीकृत ऑनलाइन प्लेटफार्म CCTNS के माध्यम से जुड़े (GS Paper-III: Internal Security)**
14. **India visit, Dissanayake discusses maritime research and development with China / भारत यात्रा, दिस्सानायके ने चीन के साथ समुद्री अनुसंधान और विकास पर चर्चा की (GS Paper-II: India-Sri-Lanka: Chinese Angle)**





15. **Parliament stalled over Shah's Ambedkar remarks /**
शाह के अंबेडकर पर टिप्पणी के कारण संसद ठप (GS Paper-I:
Ambedkar)
16. **Formulate policy to manage sacred groves, SC tells**
govt. / पवित्र वन क्षेत्रों के प्रबंधन के लिए नीति बनाने का निर्देश,
सुप्रीम कोर्ट ने सरकार को कहा (GS Paper-III: Environment /
(GS Paper-I: A&C)
17. **Bangladesh HC cancels death for ULFA chief /**
बांग्लादेश उच्च न्यायालय ने ULFA प्रमुख की फांसी की सजा को
रद्द किया (GS Paper-III: Internal Security)
18. **Gagan Gill, Easterine Kire to get Sahitya Akademi**
awards / गगन गिल, ईस्टेराइन काइरे को साहित्य अकादमी
पुरस्कार मिलेगा (PCS)
19. **Indians opt for lighter, lower-carat jewellery as gold**
prices hit the roof / सोने की कीमतों में बेतहाशा बढ़ोतरी के
कारण भारतीय हल्का और कम कैरेट वाला आभूषण पसंद कर रहे
हैं (GS Paper-III: Basic Science)
20. **Net direct tax collections rise 16.5% / नेट डायरेक्ट**
टैक्स कलेक्शंस में 16.5% की वृद्धि (GS Paper-III: Taxation)
21. **SC mulls tree census with Forest Survey of India's**
help / SC पेड़ गणना पर विचार करता है, वन सर्वेक्षण भारत की
मदद से (GS Paper-III: Environment)
22. **Japan space startup aborts second launch minutes**
after liftoff / जापान के अंतरिक्ष स्टार्टअप ने प्रक्षेपण के कुछ ही
मिनटों बाद दूसरी लॉन्च को रद्द किया (PCS)



23. Exploring Extraterrestrial Life / परग्रही जीवन का अन्वेषण (GS Paper-III: S&T)

Positive signals emerge from India-China talks

GS Paper II: India-China

India, China take part in first meeting of Special Representatives in five years; Doval and Wang affirm outcome of LAC disengagement, discuss resumption of Mansarovar yatra, border trade

Suhasini Haidar
NEW DELHI

India and China "positively affirmed" the outcome of their disengagement agreement on the Line of Actual Control (LAC), as National Security Adviser Ajit Doval met with Chinese Foreign Minister Wang Yi in Beijing on Wednesday for the first boundary talks between the Special Representatives (SRs) since 2019.

During the talks, Mr. Doval and Mr. Wang said that it was important to "draw from the lessons" of the four-year-long military stand-off at the LAC, in order to maintain peace and tranquillity on the border. They also discussed other ties that were derailed due to the frictions at the boundary, providing "positive



One step forward: National Security Adviser Ajit Doval with Chinese Foreign Minister Wang Yi in Beijing on Wednesday. PTI

directions" for cross-border exchanges, including the resumption of the Kailash Mansarovar pilgrimage from India to Tibet, data sharing on trans-border rivers, and border trade.

A statement issued by the Chinese Ministry of Foreign Affairs said Mr. Doval

and Mr. Wang held "substantive discussions" during the Special Representatives dialogue and reached a "six-point consensus", which would see efforts to maintain peace at the borders and develop bilateral relations.

While the Ministry of Ex-

ternal Affairs did not refer to a "six-point" consensus, it reiterated most of the same points on promoting exchanges.

No talk of direct flights
Significantly, in the statement issued after the talks, the SRs did not refer to the resumption of direct flights and the restoration of journalist exchanges, which were discussed when Mr. Wang met External Affairs Minister S. Jaishankar in Rio de Janeiro last month.

However, after a meeting between Mr. Doval and Chinese Vice-President Han Zheng in Beijing, an official readout stressed the need to restore exchanges in "economic, cultural and trade" areas.

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Wang Yi affirmed the outcome of the LAC disengagement agreement and discussed the resumption of Mansarovar yatra and border trade.

राष्ट्रीय सुरक्षा सलाहकार (NSA) अजीत डोवाल और चीनी विदेश मंत्री वांग यी ने LAC से अलगाव समझौते के परिणाम की पुष्टि की और मानसरोवर यात्रा और सीमा व्यापार को फिर से शुरू करने पर चर्चा की।

- This was the first meeting of SRs since 2020, when frictions had emerged in the Western Sector of the India-China border areas.

यह 2020 के बाद SRs की पहली बैठक थी, जब भारत-चीन सीमा क्षेत्र के पश्चिमी सेक्टर में तनाव उभरा था।

- The SRs positively affirmed the implementation of the October 2024 disengagement agreement, which allowed patrolling and grazing in relevant areas. SRs ने अक्टूबर 2024 के अलगाव समझौते के कार्यान्वयन की सकारात्मक पुष्टि की, जिससे संबंधित क्षेत्रों में गश्त और चराई संभव हुई।
- The resumption of the SR process, started in 2003, is a major step towards resolving the decades-long India-China boundary dispute. 2003 में शुरू हुई SR प्रक्रिया का फिर से शुरू होना, दशकों पुराने भारत-चीन सीमा विवाद को सुलझाने की दिशा में एक महत्वपूर्ण कदम है।
- The last meeting between Mr. Doval and Mr. Wang took place in December 2019, just months before the Galwan clashes in 2020.

Positive signals emerge from India-China talks

भारत-चीन वार्ता से

सकारात्मक संकेत उभरते हैं

India and China took part in the first meeting of Special Representatives (SRs) in five years.

भारत और चीन ने पांच वर्षों में विशेष प्रतिनिधियों (SRs) की पहली बैठक में भाग लिया।

- National Security Advisor (NSA) Ajit Doval and Chinese Foreign Minister





श्री डोभाल और श्री वांग के बीच अंतिम बैठक दिसंबर 2019 में हुई थी, जो 2020 में गलवान झड़पों से कुछ महीने पहले थी।

- The **Galwan clashes** marked the **first casualties** between the two armies in over **four decades**.

गलवान झड़पें दोनों सेनाओं के बीच चार दशकों में पहली बार हताहत होने का कारण बनीं।

- Mr. Doval also met with Chinese Vice-President **Han Zheng** during his visit to Beijing. श्री डोभाल ने अपनी बीजिंग यात्रा के दौरान चीनी उप-राष्ट्रपति हान झेंग से भी मुलाकात की।
- Mr. Han highlighted that as **ancient civilizations and emerging global powers**, India and China hold **global influence and strategic significance**.

श्री हान ने कहा कि प्राचीन सभ्यताओं और उभरती वैश्विक शक्तियों के रूप में भारत और चीन का वैश्विक प्रभाव और रणनीतिक महत्व है।

- Mr. Doval emphasized the **importance of resuming SR talks after a five-year gap**, reiterating India's commitment to strengthening **strategic communication with China**. श्री डोभाल ने पांच वर्षों के अंतराल के बाद SR वार्ता फिर से शुरू करने के महत्व पर जोर दिया और चीन के साथ रणनीतिक संचार को मजबूत करने की भारत की प्रतिबद्धता को दोहराया।

India's official entry *Laapataa Ladies* out of Oscars race

PCS

Press Trust of India
NEW DELHI

Laapataa Ladies, India's official entry in the best international feature category of the 97th Academy Awards, is out of the Oscars race.

The Hindi film, directed by Kiran Rao, is not part of the shortlist of 15 features that will vie for a spot in the final five, the Academy of Motion Picture Arts and Sciences announced on Wednesday.

Santosh, directed by British-Indian filmmaker Sandhya Suri and starring Indian actors Shahana Goswami and Sunita Rajwar, has made it to the shortlist representing the U.K.

Emilia Pérez (France), *I'm Still Here* (Brazil), *Universal Language* (Canada), *Waves* (Czech Republic), *The Girl with the Needle* (Denmark), and *The Seed of the Sacred Fig* from Germany are on the shortlist.

The other contenders are *Touch* (Iceland), *Kneecap* (Ireland), *Vermiglio* (Italy), *Flow* (Latvia), *Armand* (Norway), *From Ground Zero* (Palestine),



A scene from the movie
Laapataa Ladies.

Dahomey (Senegal), and *How to Make Millions before Grandma Dies* (Thailand).

Titled *Lost Ladies* in English, Kiran Rao's film is a gently subversive feminist drama which is set in rural India in the early 2000s. Sneha Desai wrote the screenplay and dialogues of *Laapataa Ladies*, based on a story by Biplab Goswami. Divyanidhi Sharma penned additional dialogues.

Laapataa Ladies follows two brides who go to the wrong marital homes after their wedding. It stars Nitanshi Goel and Pratibha Ranta as the brides Phool and Jaya, respectively, with Sparsh Shrivastav playing a groom in search of his wife.

Laapataa Ladies out of Oscars race लापता लेडीज ऑस्कर दौड़ से बाहर

• *Laapataa Ladies*, India's official entry in the **Best International Feature category of the 97th Academy Awards**, is not part of the shortlist of **15 features** announced by the **Academy of Motion Picture Arts and Sciences** on Wednesday.

लापता लेडीज, जो भारत की आधिकारिक प्रविष्टि थी 97वें अकादमी पुरस्कारों के सर्वश्रेष्ठ अंतरराष्ट्रीय फीचर श्रेणी में, वह 15 फिल्मों की सूची में शामिल नहीं है, जिसकी घोषणा बुधवार को मूवी आर्ट्स और साइंसेज अकादमी ने की।

• The Hindi film, directed by **Kiran Rao**, stars **Nitanshi Goel**, **Pratibha Ranta**, and **Sparsh Shrivastav**.

यह हिंदी फिल्म, जिसका निर्देशन किरण राव ने किया है, इसमें नितांशी गोयल, प्रतिभा रांता, और स्पर्श श्रीवास्तव ने अभिनय किया है।

• *Santosh*, directed by British-Indian filmmaker **Sandhya Suri** and starring Indian actors **Shahana Goswami** and **Sunita Rajwar**, has made it to the shortlist representing the **U.K.**

ब्रिटिश-भारतीय फिल्म निर्माता **संध्या सूरी** द्वारा निर्देशित **संतोष**, जिसमें भारतीय अभिनेता **शहाना गोस्वामी** और **सुनीता राजवार** ने अभिनय किया है, यह यू.के. का प्रतिनिधित्व करते हुए शॉर्टलिस्ट में शामिल हुई है।

• Films like **Emilia Pérez** (France), **I'm Still Here** (Brazil), **Universal Language** (Canada), **Waves** (Czech Republic), **The Girl with the Needle** (Denmark), and **The Seed of the Sacred Fig** (Germany) are on the shortlist.



एमिलिया पेरेज़ (फ्रांस), आई एम स्टिल हियर (ब्राजील), यूनिवर्सल लैंग्वेज (कनाडा), वेक्स (चेक गणराज्य), द गर्ल विद द नीडल (डेनमार्क), और द सीड ऑफ द सेक्रेड फिग (जर्मनी) शॉर्टलिस्ट में शामिल हैं।

- Other contenders include **Touch (Iceland)**, **Kneecap (Ireland)**, **Vermiglio (Italy)**, **Flow (Latvia)**, **Armand (Norway)**, **From Ground Zero (Palestine)**, **Dahomey (Senegal)**, and **How to Make Millions Before Grandma Dies (Thailand)**.

अन्य दावेदारों में टच (आइसलैंड), नीकैप (आयरलैंड), वर्मिग्लियो (इटली), फ्लो (लातविया), आर्मंड (नॉर्वे), फ्रॉम ग्राउंड जीरो (फिलिस्तीन), डहोमे (सेनेगल), और हाउ टू मेक मिलियंस बिफोर ग्रैंडमा डाईज़ (थाईलैंड) शामिल हैं।

- Titled **Lost Ladies** in English, Kiran Rao's film is a **gently subversive feminist drama** set in **rural India in the early 2000s**.

अंग्रेजी में लॉस्ट लेडीज नामक, किरण राव की यह फिल्म शुरुआती 2000 के दशक के ग्रामीण भारत में आधारित एक सॉफ्ट विद्रोही नारीवादी ड्रामा है।

- **Sneha Desai** wrote the screenplay and dialogues of **Laapataa Ladies**, based on a story by **Biplab Goswami**, while **Divyanidhi Sharma** contributed additional dialogues.

स्नेहा देसाई ने लापता लेडीज की पटकथा और संवाद लिखे हैं, जो बिप्लब गोस्वामी की कहानी पर आधारित हैं, जबकि दिव्यानिधि शर्मा ने अतिरिक्त संवाद लिखे हैं।

- **Laapataa Ladies** follows the story of **two brides**, Phool and Jaya, who go to the **wrong marital homes** after their wedding, starring **Nitanshi Goel** and **Pratibha Ranta**, with **Sparsh Shrivastav** playing a **groom in search of his wife**.

लापता लेडीज की कहानी दो दुल्हनों, फूल और जया, के बारे में है, जो अपनी शादी के बाद गलत घरों में पहुंच जाती हैं। इसमें नितान्शी गोयल और प्रतिभा रांता ने दुल्हनों की भूमिका निभाई है, जबकि स्पर्श श्रीवास्तव ने अपनी पत्नी की तलाश में दूल्हे की भूमिका निभाई है।

H.P. CM 'roasted' over jungle murga; defamation case filed

GS Paper III: Environment

Press Trust of India
SHIMLA

The Himachal Pradesh police on Wednesday registered a case of defamation and fake news against unknown persons after a video showing Chief Minister Sukhvinder Singh Sukhu allegedly encouraging his associates to eat 'jungle murga' (Grey Junglefowl) at a dinner in a remote area surfaced online.

Attacking Mr. Sukhu, the BJP in Opposition underlined that 'jungle murga' was an endangered species listed under Schedule



Chief Minister Sukhvinder Singh Sukhu at a villager's house in Shimla. FILE PHOTO

I of the Wildlife (Protection) Act and its hunting or eating was a punishable offence.

Police said the case had been registered following a complaint by Kulag village head, Suman Chauhan, and a local, Nitu Kumar.

In a video that surfaced last week, Mr. Sukhu is purportedly heard saying, "Give them jungle murga, I will not eat it." The video was recorded at the remote Tikkar of Shimla, where the Chief Minister was having dinner with Health Minister Dhani Ram Shandi. The BJP has been demanding an apology from Mr. Sukhu, even though he claimed he does not eat non-vegetarian food.

H.P. CM 'roasted' over jungle murga; defamation case filed

हिमाचल प्रदेश के मुख्यमंत्री पर 'जंगली मुर्गा' को लेकर आलोचना; मानहानि का मामला दर्ज

- **The Himachal Pradesh police on Wednesday** registered a case of defamation and fake news against unknown persons after a video showing





Chief Minister **Sukhvinder Singh Sukhu** allegedly encouraging his associates to eat 'jungle murga' (**Grey Junglefowl**) surfaced online.

हिमाचल प्रदेश पुलिस ने बुधवार को एक वीडियो के बाद अज्ञात व्यक्तियों के खिलाफ मानहानि और फेक न्यूज का मामला दर्ज किया, जिसमें मुख्यमंत्री **सुखविंदर सिंह सुक्खू** को अपने सहयोगियों को 'जंगली मुर्गा' (ग्रे जंगलफाउल) खाने के लिए प्रोत्साहित करते हुए कथित रूप से दिखाया गया।

- The BJP in Opposition attacked Mr. Sukhu, underlining that '**jungle murga**' is an **endangered species listed under Schedule I of the Wildlife (Protection) Act** and its hunting or eating is a punishable offence.

विपक्ष में बीजेपी ने श्री सुक्खू पर हमला करते हुए कहा कि 'जंगली मुर्गा' एक लुप्तप्राय प्रजाति है जो वन्यजीव (संरक्षण) अधिनियम की अनुसूची-I में सूचीबद्ध है, और इसका शिकार या सेवन एक दंडनीय अपराध है।

- Police said the case was registered following a complaint by **Kulag village head, Suman Chauhan**, and a local resident, **Nitu Kumar**.

पुलिस ने बताया कि यह मामला **कुलग गांव की मुखिया सुमन चौहान** और एक स्थानीय निवासी **नीतू कुमार** की शिकायत पर दर्ज किया गया।

- In a video that surfaced last week, Mr. Sukhu is purportedly heard saying, "Give them **jungle murga**, I will not eat it." The video was recorded at the **remote Tikkar of Shimla**, where the Chief Minister was having dinner with **Health Minister Dhani Ram Shandi**.

पिछले सप्ताह सामने आए एक वीडियो में श्री सुक्खू को कहते हुए सुना गया, "उन्हें जंगली मुर्गा दो, मैं इसे नहीं खाऊंगा।" यह वीडियो शिमला के दूरस्थ टिककर में रिकॉर्ड किया गया था, जहां मुख्यमंत्री स्वास्थ्य मंत्री धनी राम शांडी के साथ रात का खाना खा रहे थे।

- The BJP has been demanding an apology from Mr. Sukhu, even though he claimed he **does not eat non-vegetarian food**.

बीजेपी श्री सुक्खू से माफी की मांग कर रही है, हालांकि उन्होंने दावा किया कि वह मांसाहारी भोजन नहीं करते।

UCC will be implemented in Uttarakhand from Jan.: Dhani

उत्तराखंड में जनवरी से लागू होगा समान नागरिक संहिता: धामी



GS Paper II: UCC

UCC will be implemented in Uttarakhand from Jan.: Dhani

The Uniform Civil Code (UCC) will be implemented in Uttarakhand from January, Chief Minister Pushkar Singh Dhani said on Wednesday. During a meeting of the Uttarakhand Investment and Infrastructure Development Board in Dehradun, Mr. Dhani said the State government has completed its "homework" and UCC will be implemented from January 2025. With this, Uttarakhand will become the first State in the country to implement UCC after independence. On the last day of campaigning for the 2022 Assembly election, Mr. Dhani had promised to implement UCC if the BJP retained power. 711

- The **Uniform Civil Code (UCC)** will be implemented in **Uttarakhand** from **January 2025**, Chief Minister **Pushkar Singh Dhani** said on **Wednesday**.

मुख्यमंत्री पुष्कर सिंह धामी ने बुधवार को घोषणा की कि उत्तराखंड में समान नागरिक संहिता (UCC) जनवरी 2025 से लागू होगी।

- During a meeting of the **Uttarakhand Investment and Infrastructure Development Board** in **Dehradun**, Mr. Dhani said the **State government**





has completed its "homework" and UCC will be implemented from January 2025.

देहरादून में उत्तराखंड निवेश और अवसंरचना विकास बोर्ड की बैठक के दौरान श्री धामी ने कहा कि राज्य सरकार ने अपना "होमवर्क" पूरा कर लिया है और UCC जनवरी 2025 से लागू होगी।

- With this, **Uttarakhand** will become the **first State** in the country to implement UCC after independence.

इसके साथ, उत्तराखंड स्वतंत्रता के बाद UCC लागू करने वाला देश का पहला राज्य बन जाएगा।

- On the **last day of campaigning** for the **2022 Assembly election**, Mr. Dhama had promised to implement UCC if the **BJP** retained power.

2022 के विधानसभा चुनाव के प्रचार के अंतिम दिन, श्री धामी ने वादा किया था कि अगर बीजेपी सत्ता में बनी रही तो UCC लागू की जाएगी।

Gaganyaan: assembly of HLVM3 begins at ISRO for uncrewed flight

GS Paper III: S&T

The Hindu Bureau
BENGALURU

The Indian Space Research Organisation on Wednesday commenced the assembly of the **Human Rated Launch Vehicle Mark-3 (HLVM3)** for the Gaganyaan mission's maiden uncrewed flight.

The assembly of the HLVM3 is taking place at the **Satish Dhawan Space Centre (SDSC)** in Sriharikota and the uncrewed flight is expected to take place early next year from the spaceport.

"At 0845 hrs on December 18, 2024, at SDSC, the stacking of the nozzle end segment with full flex seal nozzle of the S200 motor took place, thus commencing the official launch campaign of the HLVM3-G1 / OM-1 mission," it said.

It further added that the preparation of both S200 motors will now involve assembling segments, control systems, and avionics.

"L10 and C32 stages for the HLVM3 are ready at the launch complex. The crew escape systems elements are also received at SDSC. The integration of the Crew Module is happening at VSSC and the integration of the Service Module at URSC, Bengaluru. The Orbital Module (OM) level in-



The ISRO begins assembly of HLVM3 in Sriharikota on Wednesday. ANI

tegration and tests will take place subsequently at URSC," it added.

Project background

The Gaganyaan project envisages a demonstration of human spaceflight capability by launching a crew of three members to an orbit of 400 km for a three-day mission and bringing them back safely to Earth by landing in sea waters.

Under the programme, ISRO intends to carry out three uncrewed missions and one crewed mission.

The assembly of the HLVM3 coincides with the 10th anniversary of the LVM3-X/CARE mission, which took place on December 18, 2014.

Gaganyaan: assembly of HLVM3 begins at ISRO for uncrewed flight

गगनयान: ISRO में मानव रेटेड लॉन्च

वाहन HLVM3 का असेंबली शुरू, बिना क्रू के उड़ान के लिए

- The **Indian Space Research Organisation (ISRO)** on **Wednesday** commenced the assembly of the **Human Rated Launch Vehicle Mark-3 (HLVM3)** for the Gaganyaan mission's maiden uncrewed flight.

भारतीय अंतरिक्ष अनुसंधान संगठन (ISRO) ने बुधवार को गगनयान मिशन की पहली बिना क्रू उड़ान के लिए **मानव रेटेड लॉन्च वाहन मार्क-3 (HLVM3)** का असेंबली शुरू किया।

- The assembly of the **HLVM3** is taking place at the **Satish Dhawan Space Centre (SDSC)** in **Sriharikota**, and the uncrewed flight is expected to take place **early next year** from the spaceport.

HLVM3 का असेंबली सतीश धवन अंतरिक्ष केंद्र (SDSC), श्रीहरिकोटा में हो रहा है, और बिना क्रू के उड़ान अगले साल की शुरुआत में अंतरिक्ष केंद्र से होने की उम्मीद है।

- "At 0845 hrs on **December 18, 2024**, at SDSC, the stacking of the **nozzle end segment** with the **full flex seal nozzle of the S200 motor** took place, thus commencing the official launch campaign of the **HLVM3-G1 / OM-1 mission**," it said.

"18 दिसंबर 2024 को सुबह 0845 बजे, SDSC में, S200 मोटर के नोजल एंड सेगमेंट को फुल फ्लेक्स सील नोजल के साथ जोड़ा गया, जिससे





HLVM3-G1 / OM-1 मिशन के आधिकारिक लॉन्च अभियान की शुरुआत हुई।”

- It further added that the preparation of both **S200 motors** will now involve assembling segments, control systems, and avionics.
इसमें आगे कहा गया है कि दोनों **S200 मोटर्स** की तैयारी में अब सेगमेंट्स, नियंत्रण प्रणाली और एवियोनिक्स का असेंबली शामिल होगा।
- “**L110 and C32 stages for the HLVM3** are ready at the launch complex. The **crew escape systems elements** are also received at **SDSC**.
“**L110 और C32 चरण HLVM3** के लिए लॉन्च परिसर में तैयार हैं। **क्रू एस्केप सिस्टम** के तत्व भी **SDSC** में पहुंच गए हैं।
- The integration of the **Crew Module** is happening at **VSSC**, and the integration of the **Service Module** at **URSC, Bengaluru**.
क्रू मॉड्यूल का एकीकरण **VSSC** में हो रहा है और **सर्विस मॉड्यूल** का एकीकरण **URSC, बंगलुरु** में हो रहा है।
- The **Orbital Module (OM)** level integration and tests will take place subsequently at **URSC**.
ऑर्बिटल मॉड्यूल (OM) स्तर के एकीकरण और परीक्षण बाद में **URSC** में होंगे।

Project Background

परियोजना की पृष्ठभूमि

- The **Gaganyaan project** envisages a demonstration of **human spaceflight capability** by launching a crew of **three members** to an orbit of **400 km** for a **three-day mission** and bringing them back safely to Earth by landing in sea waters.
गगनयान परियोजना का उद्देश्य **400 किमी की कक्षा** में **तीन सदस्यों** की **क्रू** को **तीन दिन के मिशन** के लिए भेजने और उन्हें **समुद्र में सुरक्षित उतारकर पृथ्वी पर वापस लाने की मानव अंतरिक्ष उड़ान क्षमता** का प्रदर्शन करना है।
- Under the programme, **ISRO** intends to carry out **three uncrewed missions** and **one crewed mission**.
इस कार्यक्रम के तहत, **ISRO** **तीन बिना क्रू मिशन** और **एक क्रू मिशन** को अंजाम देने का इरादा रखता है।
- The assembly of the **HLVM3** coincides with the **10th anniversary** of the **LVM3-X/CARE mission**, which took place on **December 18, 2014**.
HLVM3 का असेंबली **LVM3-X/CARE मिशन** की **10वीं वर्षगांठ** के साथ मेल खाता है, जो **18 दिसंबर 2014** को हुआ था।



Govt. school principal in Bihar caught on camera stealing eggs meant to be served to students

Essay, GS Paper IV: Ethics

Amit Bhelari

PATNA

The principal of a government school in Bihar's Vaishali district was caught on camera stealing eggs meant for schoolchildren under the midday meal scheme. The incident, which took place on December 13, came to light after a video showing principal Suresh Sahani purportedly stealing the eggs went viral on social media, prompting the Education Department to conduct a probe.

The department has now issued a show-cause notice to him, seeking an explanation within 48 hours, failing which he will face disciplinary action.

"We have conducted a probe into the incident and found it to be true. A letter has been sent to him seeking his response or else dis-



Every Friday, one boiled egg each is served as part of the mid-day meals. FILE PHOTO

ciplinary action would be taken against him," District Education Officer Birendra Narayan told *The Hindu*.

In the video, Mr. Sahani could be seen purportedly filling a plastic bag with eggs as soon as a van with midday meal ration arrives at the government middle school in Rikhar village of Lalganj sub-division, around 48 km from State

capital Patna.

Under the scheme, meals are served to students six days a week. Every Friday, they are given one boiled egg each as part of the midday meal.

Several students said they do not always get the food items prescribed under the scheme by the Bihar government. At times, green vegetables and eggs are not being served, they said, adding that *chokha* (mashed potatoes) served with *khichdi* is often found missing.

Sources in the education department said there is a possibility that the principal may be "forgiven as he is set to retire in January next year and a suspension order or any other action can affect his post-retirement benefits".

Attempts to contact Mr. Sahani failed to elicit any response.

Govt. school principal in Bihar caught on camera stealing eggs

बिहार में सरकारी स्कूल के प्रिंसिपल कैमरे में अंडे चोरी करते हुए पकड़े गए

- The principal of a government school in Vaishali district, Bihar, was caught on camera stealing eggs meant for students under the midday meal scheme.





बिहार के वैशाली जिले के एक सरकारी स्कूल के प्रिंसिपल को मिड-डे मील योजना के तहत बच्चों के लिए तय अंडे चोरी करते हुए कैमरे में पकड़ा गया।

- The incident took place on **December 13** and came to light after a video of principal **Suresh Sahani** stealing eggs went viral on social media.

यह घटना 13 दिसंबर को हुई और प्रिंसिपल सुरेश साहनी द्वारा अंडे चोरी करने का वीडियो सोशल मीडिया पर वायरल होने के बाद सामने आई।

- The **Education Department** initiated a probe and issued a **show-cause notice** to the principal, seeking an explanation within **48 hours**.

शिक्षा विभाग ने जांच शुरू की और प्रिंसिपल को **48 घंटे** के भीतर स्पष्टीकरण देने के लिए कारण बताओ नोटिस जारी किया।

- Failing to respond, the principal will face **disciplinary action**, according to **District Education Officer Birendra Narayan**.

जिला शिक्षा अधिकारी बीरेंद्र नारायण के अनुसार, जवाब न देने पर प्रिंसिपल के खिलाफ अनुशासनात्मक कार्रवाई की जाएगी।

- The viral video shows **Mr. Sahani filling a plastic bag with eggs** as a van carrying the midday meal ration arrived at the **government middle school in Rikhar village**, about **48 km from Patna**.

वायरल वीडियो में दिखाया गया है कि श्री साहनी प्लास्टिक बैग में अंडे भरते हुए नजर आ रहे हैं, जब रिकहर गांव के सरकारी मिडिल स्कूल में मिड-डे मील राशन लेकर एक वैन पहुंची। यह स्कूल पटना से 48 किमी दूर है।

- Under the scheme, **meals are served six days a week**, with **one boiled egg** provided every Friday to students.

योजना के तहत, छह दिन भोजन दिया जाता है, और हर शुक्रवार को छात्रों को एक उबला हुआ अंडा दिया जाता है।

- Some students complained they do not always receive the food items prescribed under the scheme, including **green vegetables, eggs, and chokha** (mashed potatoes) served with khichdi.

कुछ छात्रों ने शिकायत की कि उन्हें योजना के तहत निर्धारित हरी सब्जियां, अंडे और खिचड़ी के साथ परोसे जाने वाला चोखा अक्सर नहीं मिलता।

- Sources in the Education Department hinted that the principal might be **forgiven**, as he is set to **retire in January next year**, and disciplinary action might impact his **post-retirement benefits**.

शिक्षा विभाग के सूत्रों ने संकेत दिया कि प्रिंसिपल को माफ किया जा सकता है, क्योंकि वह अगले साल जनवरी में सेवानिवृत्त होने वाले हैं और अनुशासनात्मक कार्रवाई से उनके सेवानिवृत्ति लाभ प्रभावित हो सकते हैं।

- Efforts to contact **Mr. Sahani** for his response were unsuccessful.

श्री साहनी से संपर्क करने के प्रयास असफल रहे।





Section 6A of the Citizenship Act — why it fails Assam

GS Paper II: Citizenship

The 4:1 majority ruling by a Constitution Bench of the Supreme Court of India, in October 2024, that upheld the constitutional validity of Section 6A of the Citizenship Act, 1955 is significant. This provision establishes a distinct framework for migrants from the former East Pakistan (Bangladesh) who settled in Assam, allowing them to acquire Indian citizenship if they arrived before March 25, 1971. It is worth analysing the judgment for constitutional violations that were overlooked by the majority decision, and also discussing the potential negative implications of the ruling.

The judgment seems to suffer from arbitrary reasoning. The then Chief Justice of India, D.Y. Chandrachud, while justifying the test of Article 14, i.e., taking out of Assam against other States, said, "Though other states such as West Bengal (2216.7 km), Meghalaya (443 km), Tripura (856 km) and Mizoram (318 km) share a larger border with Bangladesh as compared to Assam (263 km), the magnitude of influx to Assam and its impact on the cultural and political rights of the Assamese and Tribal populations is higher...The impact of forty lakh migrants in Assam may conceivably be greater than the impact of fifty seven lakh migrants in West Bengal because of Assam's lesser population and land area compared to West Bengal. Thus, the singling out of Assam is based on rational considerations." However, while testing the law against Article 29, the Court held that the influx of the people did not affect the language, script, or culture of the Assamese people nor did it affect their ability to protect the same. A simple examination of the contradictory reasoning indicates that the judgment was crafted to support the provision rather than to evaluate it against constitutional principles.

The background

Section 6A of the Citizenship Act was introduced in 1985 following the Assam Accord, an agreement reached between the Government of India and the leaders of the Assam Movement. The movement arose in response to the migration from East Pakistan (now Bangladesh) into Assam, sparking concerns about the preservation of the local culture, economic strain, and political imbalance. The Assam Accord sought to resolve these issues by setting specific cut-off dates for granting citizenship to migrants: before January 1, 1966 - all Indians who migrated to Assam were declared Indian citizens; between January 1, 1966, and March 25, 1971 - citizenship can be granted to



Ravi Singh Chhikara

an advocate at the Supreme Court of India and also the Delhi High Court



Arnab Roy

a third-year student at the National Law University, Delhi

The top court's recent ruling upholding the constitutional validity of Section 6A, fails to address key constitutional concerns, particularly those that impact Assam's indigenous population

the people after 10 years of residence in Assam; after March 25, 1971 - all these people were declared illegal migrants and were liable to detection and deportation.

Gaps in the reasoning

There are constitutional pitfalls in Section 6A of the Citizenship Act. There is a violation of Article 29 of the Constitution - cultural and linguistic displacement. Article 29 of the Constitution guarantees the protection of distinct cultural and linguistic identities within India. In its ruling, the Court held that Section 6A was not violative of Article 29(1), stating that the mere presence of different ethnic groups in a State does not automatically infringe upon the cultural rights guaranteed by the Constitution. It said Article 29(1) confers the right to "conserve" culture, which it interpreted as allowing a section of citizens to take positive steps to protect their language, script, or culture, and that the law must not prevent such efforts. The Court emphasised that the petitioners failed to prove that the influx of migrants, facilitated by Section 6A, directly hindered the Assamese people's ability to take steps to conserve their culture.

However, this reasoning is completely flawed. While the Court laid emphasis on the abstract right to "conserve" culture, it overlooked the fact that the provision creates hindrances to the people in meaningfully preserving their cultural identity. It failed to observe that mere formal recognition of the right to conserve culture is insufficient if the State allows circumstances to unfold which erode the very culture it seeks to protect. Research by Dinesh Bhugra and Matthew A. Becker found out that during the acculturation process, both the immigrant and host cultures may change. Changes in attitudes, family values, generational status and social affiliations can occur in both the majority and minority cultures as the two interact. Further, the Court also took note of the research paper titled "The Change of Religion and Language Composition in the State of Assam in Northeast India: A Statistical Analysis Since 1951 to 2001", which indicates that between 1951 and 2001, the percentage of the Bengali-speaking population in Assam had increased by 29.7%, from 21.2% to 27.5%, while the proportion of Assamese-speaking people had declined by 12.26%, from 69.3% to 60.8%. Further, as per the submissions of the petitioners recorded by the Court, from 1951 to 2011, the percentage of the Bengali-speaking population in Assam had increased by 36.36% (from 21.2% to 28.91% of the total population of Assam), while

the proportion of Assamese speaking people in the State had declined by 30.18%, i.e., from 69.3% to 48.38% of the total population of Assam. This demographic shift is not a mere coexistence of ethnic groups but represents a cultural and linguistic displacement that has severely undermined the distinct identity of the Assamese people.

One of the most striking constitutional flaws of Section 6A is its temporal unreasonableness, a concept under the doctrine of manifest arbitrariness. Laws that are constitutional at the time of enactment can become unreasonable over time due to changing circumstances, and Section 6A is a clear example of this.

The law lacks any temporal limitation on its operation, allowing individuals from this stream to apply for citizenship indefinitely. More than 40 years after the cut-off date, the law still remains in force, which has rendered it ineffective in addressing the original problem it was designed to solve.

Faulty mechanism, its impact

The mechanism for identifying and processing these migrants under Section 6A(3) is flawed because it places the burden of initiating proceedings on the state, without providing a means for voluntary self-identification by migrants. This means that suspected illegal immigrants must be referred to a foreigners' tribunal, which then determines their status. However, the absence of any deadline for making such referrals allows the law to remain operational indefinitely, perpetuating a system that no longer serves its intended purpose.

Further, the foreigners' tribunal, which is responsible for determining the citizenship status of individuals referred under Section 6A, has become bogged down by the sheer volume of cases. Even individuals who do not qualify under Section 6A can claim to fall within its purview, slowing down the entire process and leading to widespread confusion.

It seems the Court wrote the judgment to merely justify the enactment of Section 6A. The ruling fails to address key constitutional concerns, particularly those regarding the cultural and demographic impact on Assam's indigenous population. The judgment overlooked how unchecked migration has eroded the linguistic and cultural identity of the Assamese people, in violation of Article 29's protective intent. Moreover, the Court's neglect of the provision's temporal unreasonableness perpetuates arbitrary and outdated policies.

Section 6A of the Citizenship Act — Why it Fails Assam

नागरिकता अधिनियम की धारा 6A — असम में क्यों विफल होती है

The 4:1 majority ruling by a Constitution Bench of the Supreme Court in October 2024 upheld the constitutional validity of Section 6A of the





Citizenship Act, 1955.

अक्टूबर 2024 में सुप्रीम कोर्ट की संविधान पीठ ने 4:1 बहुमत से नागरिकता अधिनियम, 1955 की धारा 6A की संवैधानिक वैधता को बरकरार रखा।

- This provision provides a **distinct framework** for migrants from former **East Pakistan (Bangladesh)** who settled in Assam, allowing them to acquire Indian citizenship if they arrived before **March 25, 1971**.

यह प्रावधान पूर्वी पाकिस्तान (बांग्लादेश) से असम में बसे प्रवासियों के लिए एक विशिष्ट ढांचा प्रदान करता है, जिससे उन्हें 25 मार्च 1971 से पहले भारत में आने पर नागरिकता प्राप्त करने की अनुमति मिलती है।

- The **judgment overlooked some constitutional violations** and could have **negative implications**.

इस निर्णय ने कुछ संवैधानिक उल्लंघनों की अनदेखी की और इसके नकारात्मक प्रभाव हो सकते हैं।

Flaws in Reasoning

तर्क में खामियां

- The **ruling appears to suffer from arbitrary reasoning**.

यह निर्णय मनमाने तर्क से प्रभावित लगता है।

- Then Chief Justice of India, **D.Y. Chandrachud**, justified the **test of Article 14** by highlighting that while other states like **West Bengal, Meghalaya, Tripura, and Mizoram** share larger borders with Bangladesh, the **impact of migration** was greater on Assam due to its **lesser population and land area**.

तत्कालीन भारत के मुख्य न्यायाधीश डी.वाई. चंद्रचूड़ ने अनुच्छेद 14 के परीक्षण को उचित ठहराते हुए कहा कि अन्य राज्यों जैसे पश्चिम बंगाल, मेघालय, त्रिपुरा, और मिजोरम का बांग्लादेश के साथ बड़ा सीमा क्षेत्र साझा होने के बावजूद, प्रवासन का प्रभाव असम पर अधिक था क्योंकि उसकी जनसंख्या और भूमि क्षेत्र कम है।

- However, the court held under **Article 29** that the **influx of people** did not affect the **language, script, or culture** of Assamese people.

हालांकि, अदालत ने अनुच्छेद 29 के तहत कहा कि लोगों की आमद ने असमिया लोगों की भाषा, लिपि या संस्कृति पर कोई प्रभाव नहीं डाला।

- This **contradictory reasoning** suggests the judgment was more focused on supporting the provision than critically evaluating it.

यह विरोधाभासी तर्क इंगित करता है कि यह निर्णय प्रावधान का समर्थन करने पर केंद्रित था, बजाय इसके गहन मूल्यांकन के।

Background of Section 6A

धारा 6A की पृष्ठभूमि





- **Section 6A** was introduced in **1985** following the **Assam Accord**, an agreement between the **Government of India** and the leaders of the Assam Movement.
1985 में असम समझौते के बाद धारा 6A को पेश किया गया, जो भारत सरकार और असम आंदोलन के नेताओं के बीच हुआ एक समझौता था।
- The movement arose due to migration from **East Pakistan (now Bangladesh)** into Assam, causing concerns over **local culture preservation, economic strain, and political imbalance**.
यह आंदोलन पूर्वी पाकिस्तान (अब बांग्लादेश) से असम में प्रवासन के कारण स्थानीय संस्कृति की सुरक्षा, आर्थिक दबाव और राजनीतिक असंतुलन को लेकर हुआ।
- The **Assam Accord** set specific **cut-off dates** for citizenship:
असम समझौते ने नागरिकता के लिए विशिष्ट तिथि सीमा तय की:
 - Before **January 1, 1966** – Migrants declared as **Indian citizens**.
1 जनवरी 1966 से पहले - प्रवासियों को भारतीय नागरिक घोषित किया गया।
 - Between **January 1, 1966**, and **March 25, 1971** – Citizenship granted after **10 years of residence** in Assam.
1 जनवरी 1966 से 25 मार्च 1971 के बीच - 10 वर्षों के निवास के बाद नागरिकता दी जाएगी।
 - After **March 25, 1971** – Declared **illegal migrants** liable for **detection and deportation**.
25 मार्च 1971 के बाद - उन्हें अवैध प्रवासी घोषित किया गया और पता लगाकर निर्वासन के लिए उत्तरदायी ठहराया गया।

Gaps in the reasoning

विवेचना में खामियां

- There are **constitutional pitfalls** in **Section 6A** of the Citizenship Act.
नागरिकता अधिनियम की धारा 6A में संवैधानिक कमियां हैं।
- There is a **violation of Article 29** of the Constitution, which guarantees the **protection of cultural and linguistic identities**.
संविधान के अनुच्छेद 29 का उल्लंघन है, जो सांस्कृतिक और भाषाई पहचान की सुरक्षा की गारंटी देता है।
- The **Court held that Section 6A was not violative of Article 29(1)**, stating that the presence of different ethnic groups does not **automatically infringe upon cultural rights**.
अदालत ने माना कि धारा 6A, अनुच्छेद 29(1) का उल्लंघन नहीं करती है और यह कहा कि विभिन्न जातीय समूहों की उपस्थिति से सांस्कृतिक अधिकारों पर स्वतः कोई प्रभाव नहीं पड़ता।
- The **Court emphasized that petitioners failed to prove that the influx of migrants directly hindered the Assamese people's ability to conserve their culture**.
अदालत ने इस पर बल दिया कि याचिकाकर्ता यह साबित करने में विफल रहे कि प्रवासियों का आगमन असमिया लोगों की संस्कृति को संरक्षित करने की क्षमता में बाधा उत्पन्न करता है।
- The **reasoning is flawed**, as mere recognition of the right to conserve culture is **insufficient** if circumstances erode the culture itself.





यह तर्क त्रुटिपूर्ण है क्योंकि केवल संस्कृति को संरक्षित करने के अधिकार को मान्यता देना तब अपर्याप्त है जब परिस्थितियां संस्कृति को ही खत्म कर देती हैं।

- Research by **Dinesh Bhugra and Matthew A. Becker** highlights that **during the acculturation process, both immigrant and host cultures change.**
दिनेश भगरा और मैथ्यू ए. बेकर के शोध में बताया गया है कि सांस्कृतिक समायोजन प्रक्रिया के दौरान, प्रवासी और मूल संस्कृति दोनों बदलते हैं।
- **Between 1951 and 2011, the percentage of the Bengali-speaking population in Assam increased by 36.36%, while the proportion of Assamese-speaking people declined by 30.18%.**
1951 और 2011 के बीच, असम में बंगाली-भाषी जनसंख्या का प्रतिशत 36.36% बढ़ गया, जबकि असमिया-भाषी लोगों का प्रतिशत 30.18% कम हो गया।

One of the most striking constitutional flaws

सबसे उल्लेखनीय संवैधानिक खामी

- **Section 6A** suffers from **temporal unreasonableness** under the doctrine of **manifest arbitrariness.**
धारा 6A में स्पष्ट मनमानी के सिद्धांत के तहत समयबद्ध अनुचितता है।
- **More than 40 years** after the cut-off date, the law **still remains in force**, rendering it **ineffective.**
कट-ऑफ तिथि के 40 साल बाद भी, यह कानून अभी भी लागू है, जिससे यह अप्रभावी हो गया है।

Faulty mechanism, its impact

त्रुटिपूर्ण तंत्र और उसका प्रभाव

- The mechanism for identifying migrants places the burden on the **state**, without means for **voluntary self-identification.**
प्रवासियों की पहचान के लिए तंत्र का भार राज्य पर है और इसमें स्वैच्छिक स्व-पहचान का प्रावधान नहीं है।
- The **foreigners' tribunal** has become bogged down due to the **sheer volume of cases**, leading to confusion.
विदेशी न्यायाधिकरण मामलों की विशाल संख्या के कारण जटिल हो गया है, जिससे भ्रम की स्थिति पैदा हो रही है।
- The Court's ruling **fails to address** cultural and demographic concerns impacting **Assam's indigenous population.**
अदालत का निर्णय असम की मूल जनसंख्या पर पड़ने वाले सांस्कृतिक और जनसांख्यिकीय प्रभावों का समाधान करने में विफल रहा है।





Strengthening the roots of an agri-carbon market

GS Paper III: Agri-Carbon Market

Carbon markets hold the potential to transform Indian agriculture, turning sustainable farming practices into a lucrative opportunity for farmers while combating climate change. In this, carbon pricing is a critical tool for mitigating climate change. It functions through compliance and voluntary carbon markets. Compliance markets, regulated by governments or international bodies such as the United Nations, impose emissions caps on companies. Businesses exceeding these caps must either purchase carbon credits from projects that mitigate greenhouse gas (GHG) emissions, such as agroforestry or sustainable agriculture projects, or pay carbon taxes for their extra emissions. In contrast, the voluntary carbon market operates without regulation, allowing organisations to trade carbon credits through mechanisms such as the Clean Development Mechanism, Verra, and Gold Standard, among others. Together, these systems aim to reduce GHG emissions and support global climate goals.

Carbon markets, their working

Carbon markets are gaining momentum. At COP29, in November 2024, for instance, a centralised carbon market under the UN got a green signal. Last year, India announced that it would launch its own compliance and voluntary carbon markets. Recently, the National Bank for Agriculture and Rural Development, in collaboration with the Indian Council of Agricultural Research and State universities, listed five agriculture carbon credit projects in Verra.

Carbon markets rely on two key principles: additionality and permanence. Additionality ensures emission reductions happen only due to carbon credits, requiring farmers to adopt new practices. This means that those who already use sustainable methods are not eligible for credits. Permanence refers to the long-term durability of these benefits. Permanence guarantees these benefits last, such as ensuring carbon stored in soils through reduced tillage is not lost due to a return to conventional ploughing. Therefore, projects that aim to generate and trade carbon credits must adhere to certain conditions, including additionality and permanence.



Adeeth A.G. Cariappa

an Environmental and Resource Economist in the Sustainable Agrifood Systems (SAS) Program, CIMMYT-India



Vijesh V. Krishna

Lead Economist (Adoption and Gender) in the SAS Program, CIMMYT-India

In India, existing carbon credit projects listed under non-governmental entities need to be examined to ensure inclusivity and efficiency

To assess the readiness of India's agriculture sector for a full-scale carbon market, we must examine the existing carbon credit projects listed under non-governmental entities such as Verra. This highlights challenges and the necessary fixes before scaling up. If projects fail to deliver promised environmental benefits, producing unreliable credits, buyers may lose confidence and stop purchasing agriculture carbon credits. This deprives farmers of extra income and discourages the adoption of sustainable practices. Ensuring high-quality credits from the start of Indian carbon markets is crucial for trust and long-term farmer participation.

In just four years, over 50 agriculture carbon farming projects have been listed in the Verra registry, targeting 1.6 million hectares of farmland in India. These projects aim to generate approximately 4.7 million carbon credits annually, equivalent to offsetting the GHG emitted from 11 billion miles driven by an average gasoline-powered vehicle. However, none of these projects is registered, which means carbon credits have not been issued and that farmers have not received the money.

Carbon farming projects in India

A recent study by the writers of this article published in Climate Policy – “Carbon farming in India: are the existing projects inclusive, additional, and permanent?” – examines seven such carbon farming projects in Haryana and Madhya Pradesh, focusing on socio-economic inclusiveness, additionality, and permanence. The findings show that marginalised communities and small farmers were largely excluded, with women making up only 4% of participants. Carbon farmers in these States cultivated significantly more land – 51% more in Haryana and 32% more in Madhya Pradesh – than non-carbon farmers. Among non-carbon farmers, 46% of the land was owned by non-marginalised castes (general castes) and 17% by Scheduled Caste-Scheduled Tribe (SC/ST) farmers, whereas among carbon farmers, 63% of the land was under non-marginalised castes and only 13% was owned by SC/ST farmers.

Further, while some sustainable practices were already in place before the projects began, others such as zero tillage, alternate wetting and drying,

intercropping, reduced chemical fertilizer use, micro-irrigation, and tree planting were newly adopted, which satisfies the additionality condition. This demonstrates that, when implemented effectively, these projects can genuinely reduce GHG emissions.

Significant challenges remain in these projects: 45% of farmers reported no communication, over 60% lacked training in new techniques, and 28% stopped sustainable practices by the second year, mainly due to insufficient financial incentives. Alarmingly, 99% had not received carbon credit payments, with additional issues including yield penalties and inadequate information on carbon farming.

Despite these setbacks, projects managed by startups focused solely on carbon credits, termed “Carbon Core” in this study, performed better than those run by subsidiaries or offshoots of larger corporations. However, these projects were less inclusive of smallholders and marginalised communities.

To address these issues, India's carbon market must incentivise socially inclusive projects by offering higher prices for carbon credits from projects that include smallholders and marginalised communities. Effective communication, regular training, and guaranteed, timely payments can enhance farmer participation. Collaborating with national and international research institutions to target suitable regions and interventions can prevent yield penalties and protect food security.

An improving science

The science of measuring soil carbon and GHG emissions is expected to improve over time. In recent years, digital technologies have advanced significantly. Tools such as remote sensing, satellite imagery, drones, and sensors for monitoring project activities will soon become more accessible. However, for carbon markets to succeed, the critical focus must be addressing the grand old implementation challenges.

Building a thriving agricultural carbon market in India requires collaboration among policymakers, researchers, and private entities to ensure inclusivity, transparency, timely rewards for farmers, and improved project implementation.

Strengthening the Roots of an Agri-Carbon Market

कृषि-कार्बन बाजार की जड़ों को मजबूत करना

Carbon markets hold the potential to transform Indian agriculture, turning sustainable farming practices into a lucrative opportunity for farmers while combating climate change.

कार्बन बाजार भारतीय कृषि को बदलने की क्षमता रखते हैं, जिससे स्थायी खेती के तरीकों को किसानों के लिए एक लाभकारी अवसर में बदला जा सके और जलवायु परिवर्तन से भी मुकाबला किया जा सके।

- **Carbon pricing** is a critical tool for mitigating climate change. It functions through **compliance and voluntary carbon markets**.

कार्बन मूल्य निर्धारण जलवायु परिवर्तन को कम करने का एक महत्वपूर्ण उपकरण है। यह अनुपालन और स्वैच्छिक कार्बन बाजारों के माध्यम से कार्य करता है।





- **Compliance markets** are regulated by governments or international bodies such as the United Nations, imposing emissions caps on companies.
अनुपालन बाजारों को सरकारों या संयुक्त राष्ट्र जैसे अंतरराष्ट्रीय संगठनों द्वारा नियंत्रित किया जाता है, जो कंपनियों पर उत्सर्जन की सीमा लगाते हैं।
- **Voluntary carbon markets operate without regulation**, allowing organizations to trade carbon credits through mechanisms such as the **Clean Development Mechanism, Verra, and Gold Standard**.
स्वैच्छक कार्बन बाजार बिना किसी नियमन के संचालित होते हैं और संगठनों को क्लीन डेवलपमेंट मैकेनिज्म, वेरा, और गोल्ड स्टैंडर्ड जैसे तंत्रों के माध्यम से कार्बन क्रेडिट का व्यापार करने की अनुमति देते हैं।

Carbon Markets and Their Working

कार्बन बाजार और उनका कार्य

- **At COP29 (November 2024), a centralised carbon market under the UN received approval.**
सीओपी29 (नवंबर 2024) में, संयुक्त राष्ट्र के तहत एक केंद्रीकृत कार्बन बाजार को मंजूरी मिली।
- **India announced its own compliance and voluntary carbon markets in 2023.**
भारत ने 2023 में अपने अनुपालन और स्वैच्छक कार्बन बाजारों की घोषणा की।
- **The National Bank for Agriculture and Rural Development (NABARD), in collaboration with Indian Council of Agricultural Research (ICAR) and State universities, listed five agriculture carbon credit projects in Verra.**
राष्ट्रीय कृषि और ग्रामीण विकास बैंक (नाबाई) ने भारतीय कृषि अनुसंधान परिषद (आईसीएआर) और राज्य विश्वविद्यालयों के साथ मिलकर वेरा में पांच कृषि कार्बन क्रेडिट परियोजनाएं सूचीबद्ध कीं।

Principles of Carbon Markets

कार्बन बाजारों के सिद्धांत

- **Additionality** ensures emission reductions happen only due to carbon credits, requiring farmers to adopt new practices.
एडिशनैलिटी यह सुनिश्चित करता है कि उत्सर्जन में कमी केवल कार्बन क्रेडिट के कारण ही हो, और इसके लिए किसानों को नए तरीकों को अपनाने की आवश्यकता होती है।
- **Permanence** refers to the long-term durability of benefits, ensuring that carbon stored in soils is not lost due to reverting to conventional practices.
स्थायित्व लाभों की दीर्घकालिक स्थिरता को संदर्भित करता है, जिससे यह सुनिश्चित होता है कि मिट्टी में संग्रहीत कार्बन पारंपरिक तरीकों पर लौटने से नष्ट न हो।

Carbon Farming Projects in India

भारत में कार्बन खेती परियोजनाएं





- Over **50 agriculture carbon farming projects** are listed in Verra, targeting **1.6 million hectares** of farmland, aiming to generate **4.7 million carbon credits annually**.
वेरा में 50 से अधिक कृषि कार्बन खेती परियोजनाएं सूचीबद्ध हैं, जो 16 लाख हेक्टेयर कृषि भूमि को लक्षित करती हैं और 47 लाख कार्बन क्रेडिट वार्षिक उत्पन्न करने का लक्ष्य रखती हैं।
- However, none of these projects are registered, meaning **carbon credits** have not been issued, and farmers have not received payments.
हालांकि, इन परियोजनाओं में से कोई भी पंजीकृत नहीं है, जिसका मतलब है कि कार्बन क्रेडिट जारी नहीं किए गए हैं और किसानों को भुगतान नहीं मिला है।

Challenges in Carbon Farming Projects

कार्बन खेती परियोजनाओं में चुनौतियां

- Marginalised communities and small farmers were largely excluded, with women making up only **4% of participants**.
हाशिये पर मौजूद समुदायों और छोटे किसानों को काफी हद तक बाहर रखा गया, और महिलाएं केवल 4% प्रतिभागी थीं।
- **99% of farmers reported not receiving carbon credit payments**.
99% किसानों ने बताया कि उन्हें कार्बन क्रेडिट का भुगतान नहीं मिला।
- Challenges include **lack of communication**, insufficient training, and low financial incentives.
चुनौतियों में संचार की कमी, अपर्याप्त प्रशिक्षण, और कम वित्तीय प्रोत्साहन शामिल हैं।

Improving the Science

विज्ञान में सुधार

- Digital technologies like **remote sensing, satellite imagery, drones**, and sensors are becoming more accessible for monitoring.
रिमोट सेंसिंग, सैटेलाइट इमेजरी, ड्रोन, और सेंसर जैसी डिजिटल तकनीकें निगरानी के लिए अधिक सुलभ हो रही हैं।
- Collaboration among policymakers, researchers, and private entities is key to ensuring inclusivity, transparency, and timely rewards.
नीति निर्माताओं, शोधकर्ताओं, और निजी संस्थाओं के बीच सहयोग समावेशिता, पारदर्शिता, और समय पर पुरस्कार सुनिश्चित करने के लिए महत्वपूर्ण है।





GS Paper II: Elections

Electronic distraction

The Election Commission has a lot to answer for, but EVMs are not the issue

After consecutive electoral losses, in the Haryana and Maharashtra Assembly elections, the Congress has raised the tempo with regard to its concerns about electronic voting machines (EVM). While there are numerous issues related to the integrity of elections that the Election Commission of India (ECI) needs to come clean on, the risk of electronic tampering with EVMs is not among them. The Congress is barking up the wrong tree – that too selectively and only when it loses. Some of its party leaders have publicly expressed the view that there is no evidence that suggests the risk of manipulation, remotely or through preprogramming. At least two Opposition leaders, NC leader and J&K Chief Minister Omar Abdullah, and Trinamool Congress leader Abhishek Banerjee, have distanced themselves from the allegations. To assume that EVMs are so elaborately and precisely manipulated that the BJP wins in some States and loses in some others in a detailed conspiracy, defies logic. After all, the BJP ended up short of a majority in the 2024 general election. Moreover, all these results, particularly those of Haryana, Maharashtra and Jharkhand are well explained by the social and political dynamics at play.

By repeatedly raising the spectre of EVM manipulation, the real and serious questions of election integrity are being overlooked. Among them, the possibility of old style, manual capture of EVMs in booths dominated by one party and where polling agents of opponents are absent. This is pertinent against the backdrop of questions about a massive turnout recorded in many places in the closing hours of polling. This trend has not yet been satisfactorily explained by the ECI. Large-scale additions and deletions of voter names are now a pattern, and the ECI seems to be brazening it out. In Delhi, where elections are now due, allegations of the selective removal of Muslim voters have surfaced. In the Uttar Pradesh by-elections, partisan police actions that restrained voters expected to vote against the BJP have been controversial. The scheduling of elections is another serious question that the ECI has been less than transparent about. For a country that is preparing to conduct all elections in one go, it scheduled the three recent Assembly elections in two batches, and the BJP is the one party that gained the benefits. As is evident, some of these issues are local, some related to the vast capacity gap between the BJP and the Opposition while some others are squarely in the court of the ECI. The Opposition needs to focus on the real questions of election integrity, and an EVM scare should not act as a distraction.

Electronic Distraction

इलेक्ट्रॉनिक विचलन

The Election Commission has a lot to answer for, but EVMs are not the issue

चुनाव आयोग को कई सवालों के जवाब देने हैं, लेकिन EVMs मुद्दा नहीं हैं।

• After consecutive electoral losses in the **Haryana and Maharashtra Assembly elections**, the Congress has raised concerns regarding **EVMs**.

हरियाणा और महाराष्ट्र विधानसभा चुनावों में लगातार हार के बाद, कांग्रेस ने EVMs को लेकर चिंताएं उठाई हैं।

• Numerous issues related to **election integrity** require the **Election Commission of India (ECI)** to come clean, but **electronic tampering with EVMs** is not among them.

चुनाव की निष्पक्षता से जुड़े कई मुद्दे हैं जिन पर भारत के चुनाव आयोग (ECI) को सफाई देनी चाहिए, लेकिन EVMs के साथ इलेक्ट्रॉनिक छेड़छाड़ इनमें शामिल नहीं है।

• The Congress raises **EVM manipulation concerns selectively** and only when it loses.

कांग्रेस EVM छेड़छाड़ की चिंता केवल हारने पर और चुनिंदा रूप से उठाती है।

• Party leaders, including NC leader **Omar Abdullah** and Trinamool Congress leader **Abhishek Banerjee**, have publicly distanced themselves from such allegations.

पार्टी नेताओं, जैसे कि ओमर अब्दुल्ला और अभिषेक बनर्जी, ने सार्वजनिक रूप से इन आरोपों से खुद को अलग कर लिया है।

• Assuming that **EVMs are manipulated** so that the **BJP wins in some States and loses in others** defies logic.

यह मान लेना कि EVMs को इस तरह से छेड़छाड़ की गई है कि बीजेपी कुछ राज्यों में जीतती है और अन्य में हारती है, यह तर्क के खिलाफ है।

• In the **2024 general election**, the BJP fell short of a majority.

2024 के आम चुनाव में बीजेपी बहुमत से पीछे रह गई।

• By raising **EVM manipulation concerns**, serious **election integrity issues** like **manual capture of EVMs** in certain booths are overlooked.

EVM छेड़छाड़ की चिंताओं को उठाने से, जैसे मुद्दे ईवीएम का मैनुअल कब्जा, अनदेखे रह जाते हैं।





PATRIOTIC IAS: Near Rajbanshi Hospital, Paidleyganj Road, Gorakhpur

Contact Number: 9971932488

- Questions about **massive turnout** during closing hours of polling remain unexplained by the **ECI**.
मतदान के अंतिम घंटों में बड़ी संख्या में मतदान के सवाल अब तक **ECI** द्वारा स्पष्ट नहीं किए गए हैं।
- **Patterns of large-scale voter additions and deletions** have emerged, with allegations of **selective removal of Muslim voters** in Delhi.
मतदाता सूची में बड़े पैमाने पर जोड़-घटाव का पैटर्न उभरा है, जिसमें दिल्ली में **मुस्लिम मतदाताओं को चुनिंदा हटाने** के आरोप हैं।
- In **Uttar Pradesh by-elections**, allegations of **partisan police actions** restricting voters against the BJP have surfaced.
उत्तर प्रदेश उपचुनावों में, **पक्षपाती पुलिस कार्रवाई** के आरोप लगे हैं, जिससे बीजेपी के खिलाफ मतदान करने वाले मतदाता प्रभावित हुए।
- **Election scheduling** has been questioned for transparency. For instance, three Assembly elections were scheduled in **two batches**, seemingly benefiting the BJP.
चुनाव कार्यक्रम निर्धारण की पारदर्शिता पर सवाल उठे हैं। उदाहरण के लिए, तीन विधानसभा चुनावों को **दो बैचों** में तय किया गया, जिससे बीजेपी को लाभ होता दिखा।
- The **Opposition must focus on real election integrity concerns** and avoid distractions like the **EVM scare**.
विपक्ष को असली चुनाव निष्पक्षता के मुद्दों पर ध्यान देना चाहिए और **EVM की चिंता** जैसे विचलनों से बचना चाहिए।





Making affordable generics more reliable

GS Paper II: Health Sector

Generic drugs are crucial for addressing healthcare affordability in a population marked by significant income disparities. Bioequivalent to branded drugs, generics offer cost-effective alternatives. India leverages economies of scale and low production costs to supply affordable medication domestically and internationally.

With out-of-pocket healthcare expenditure at 39.4% of total health expenditure in 2021-22, generics reduce financial burdens and improve treatment adherence. By August 2024, generic medicines worth ₹5,600 crore sold through Pradhan Mantri Bhartiya Janaushadhi Pariyojana over a decade saved consumers an estimated ₹30,000 crore.

Ensuring the quality of generic medicines in India is vital to make them affordable and effective as innovator drugs. Despite being bioequivalent to brand-name drugs, quality control lapses have occasionally compromised their efficacy and safety.

A study by doctors of the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, published in *Mycoses*, investigated the efficacy of itraconazole in treating chronic pulmonary aspergillosis using the innovator drug and 22 generic formulations. The innovator itraconazole achieved therapeutic drug levels in 73% of patients within two weeks, compared to only 29% for generics, which often required 6-8 weeks, dose escalation, or switching to the innovator. Further, generic capsules had significant defects, including fewer and unevenly sized pellets, critical for optimal drug absorption and bioavailability.

But why do generic and innovator drugs differ in some cases despite being made from the same active ingredient? Generics can differ significantly in their excipients and manufacturing processes, leading to variability in therapeutic outcomes. First,



Aditya Sinha

Public policy professional
Views are personal

The key issue lies in India's decentralised drug regulation system, which grants significant authority to State Drug Regulatory Authorities, leading to inconsistent enforcement and quality standards

differences in excipients – such as binders, fillers, disintegrants, and coatings – can alter a drug's dissolution rate, stability, and delivery mechanism.

Second, manufacturing processes, including the type of punching machines, compression force, and granulation methods, can influence the drug's physical and chemical properties. Variations in tablet hardness, particle size, and porosity can affect disintegration and absorption. In some cases, while an innovator drug is designed to release the API slowly to achieve a sustained therapeutic effect, generics may release the API more rapidly, potentially leading to fluctuations in drug levels.

Third, the limitations of bioequivalence thresholds contribute to the problem. Regulatory standards often allow pharmacokinetic parameters to fall within 80%-125% of the innovator drug's range. These thresholds may be insufficient for medications with a narrow therapeutic index. Even minor deviations in drug release or bioavailability can lead to subtherapeutic effects or adverse reactions. Stability issues can also further undermine the drug's shelf life and reliability.

The key issue lies in India's decentralised drug regulation system, which grants significant authority to State Drug Regulatory Authorities (SDRAs), leading to inconsistent enforcement and quality standards. The Central Drugs Standard Control Organisation (CDSCO) can only recommend action, leaving States to act. Despite repeated calls for centralisation, crucial functions remain with States, enabling regulatory arbitrage as manufacturers exploit weaker oversight. India must centralise drug regulation, strengthen CDSCO with resources and personnel, and establish more central drug-testing labs to address this issue.

Another reason is the inadequate enforcement of stability testing to ensure drug

efficacy under diverse climatic conditions. Stability testing, mandated by the CDSCO in 2018, requires manufacturers to demonstrate that drugs maintain their quality, strength, and identity under specified conditions. However, inconsistent implementation by State licensing authorities and the absence of clear, centralised guidelines undermine compliance. Moreover, the lack of retrospective applicability to generics approved before 2018 perpetuates the presence of substandard drugs in the market. India must enforce uniform stability testing protocols, ensure centralised regulatory oversight, and mandate periodic reassessment of all approved generics to build confidence in drug quality.

Thirdly, India's Pharmacopoeia permits higher drug impurity levels than U.S. and EU standards. The Pharmacopoeia Commission (PC) and CDSCO rejected stricter ICH guidelines as "too expensive". Thus, these standards should be made a bit more stringent. In that case, action needs to be taken at the level of PC, CDSCO, and Centre.

Centralising drug regulation will only be effective with a comprehensive overhaul of the CDSCO. It must be reorganised to deliver robust regulatory safeguards, protecting patients from the dangers of substandard and counterfeit medicines through stringent regulatory protocols and effective inspection and enforcement mechanisms.

We must champion generics – they are indispensable for ensuring equitable access to medicines. But, equity cannot come at the expense of quality. States must relinquish their fragmented control over drug regulation, which has long undermined public confidence in generics. It is time to act on the decades-old recommendations of the Bhatia (1954), Hathi (1975), and Mashelkar (2003) committees, all of which have called for centralised oversight.





Making Affordable Generics More Reliable

सस्ते जेनरिक दवाइयों को अधिक विश्वसनीय बनाना

Generic drugs are crucial for addressing healthcare affordability in a population marked by significant income disparities.

जेनरिक दवाइयाँ स्वास्थ्य देखभाल की लागत को कम करने के लिए महत्वपूर्ण हैं, खासकर एक ऐसी जनसंख्या में जहाँ आय में महत्वपूर्ण अंतर है।

- Bioequivalent to branded drugs, generics offer cost-effective alternatives.
ब्रांडेड दवाइयों के जैविक समकक्ष, जेनरिक लागत-प्रभावी विकल्प प्रदान करते हैं।
- India leverages economies of scale and low production costs to supply affordable medication domestically and internationally.
भारत सस्ते उत्पादन लागत और पैमाने की अर्थव्यवस्थाओं का लाभ उठाकर घरेलू और अंतर्राष्ट्रीय स्तर पर सस्ती दवाइयाँ प्रदान करता है।
- With out-of-pocket healthcare expenditure at 39.4% of total health expenditure in 2021-22, generics reduce financial burdens and improve treatment adherence.
2021-22 में कुल स्वास्थ्य व्यय का 39.4% बाहरी खर्च होने के साथ, जेनरिक दवाइयाँ वित्तीय बोझ को कम करती हैं और इलाज की अनुपालन को बेहतर बनाती हैं।
- By August 2024, generic medicines worth ₹5,600 crore sold through **Pradhan Mantri Bhartiya Janaushadhi Pariyojana** over a decade saved consumers an estimated ₹30,000 crore.
अगस्त 2024 तक, 'प्रधानमंत्री भारतीय जनऔषधि योजना' के माध्यम से ₹5,600 करोड़ मूल्य की जेनरिक दवाइयाँ बेचने से उपभोक्ताओं ने अनुमानित ₹30,000 करोड़ बचाए।
- Ensuring the quality of generic medicines in India is vital to make them affordable and effective as innovator drugs.
भारत में जेनरिक दवाइयों की गुणवत्ता सुनिश्चित करना आवश्यक है ताकि वे सस्ती और प्रभावी बनी रहें।
- Despite being bioequivalent to brand-name drugs, quality control lapses have occasionally compromised their efficacy and safety.
ब्रांड-नाम दवाइयों के जैविक समकक्ष होने के बावजूद, गुणवत्ता नियंत्रण की कमी ने कभी-कभी उनकी प्रभावशीलता और सुरक्षा को प्रभावित किया है।
- A study by doctors of the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, published in **Mycoses**, investigated the efficacy of itraconazole in treating chronic pulmonary aspergillosis using the innovator drug and 22 generic formulations.
पोस्टग्रेजुएट इंस्टीट्यूट ऑफ मेडिकल एजुकेशन एंड रिसर्च (PGIMER), चंडीगढ़ के डॉक्टरों द्वारा की गई एक अध्ययन, जो 'माइकोसिस' में प्रकाशित हुआ, ने क्रोनिक पल्मोनरी ऐस्पेरिलोसिस के इलाज में इट्राकोनाज़ोल की प्रभावशीलता का मूल्यांकन किया, जिसमें 22 जेनरिक फार्मूलेशन और इनोवेटर ड्रग का इस्तेमाल किया गया।





- The innovator itraconazole achieved therapeutic drug levels in 73% of patients within two weeks, compared to only 29% for generics, which often required 6–8 weeks, dose escalation, or switching to the innovator.

इनोवेटर इट्राकोनाज़ोल ने दो हफ्तों के भीतर 73% मरीजों में चिकित्सीय दवा स्तर प्राप्त किए, जबकि जेनरिक में केवल 29% मरीजों को 6-8 हफ्तों, खुराक बढ़ाने, या इनोवेटर ड्रग पर स्विच करने की आवश्यकता पड़ी।

- Further, generic capsules had significant defects, including fewer and unevenly sized pellets, critical for optimal drug absorption and bioavailability.

इसके अतिरिक्त, जेनरिक कैप्सूल में महत्वपूर्ण दोष थे, जिनमें कम और असमान आकार के पेलट्स शामिल थे, जो उचित दवा अवशोषण और जैव उपलब्धता के लिए महत्वपूर्ण हैं।

- But why do generic and innovator drugs differ in some cases despite being made from the same active ingredient?

लेकिन, जेनरिक और इनोवेटर दवाइयाँ कुछ मामलों में क्यों अलग होती हैं, जबकि वे एक ही सक्रिय घटक से बनाई जाती हैं?

- Generics can differ significantly in their excipients and manufacturing processes, leading to variability in therapeutic outcomes.

जेनरिक दवाइयाँ अपने सहायक तत्वों और निर्माण प्रक्रियाओं में महत्वपूर्ण अंतर कर सकती हैं, जिससे चिकित्सीय परिणामों में भिन्नता होती है।

- **First**, differences in excipients — such as binders, fillers, disintegrants, and coatings — can alter a drug's dissolution rate, stability, and delivery mechanism.

पहला, सहायक तत्वों में अंतर, जैसे कि बाइंडर्स, फिलर्स, डिस्इंटीग्रेटर्स, और कोटिंग्स, दवा की घुलनशीलता दर, स्थिरता, और वितरण तंत्र को बदल सकते हैं।

- **Second**, manufacturing processes, including the type of punching machines, compression force, and granulation methods, can influence the drug's physical and chemical properties.

दूसरा, निर्माण प्रक्रियाएँ, जैसे कि पंचिंग मशीनों का प्रकार, संपीड़न बल, और ग्रैनुलेशन विधियाँ, दवा की भौतिक और रासायनिक गुणों को प्रभावित कर सकती हैं।

- **Variations in tablet hardness, particle size, and porosity can affect disintegration and absorption.**

गोलियों की कठोरता, कण आकार, और पोरसिटी में भिन्नताएँ डिज़इंटीग्रेशन और अवशोषण को प्रभावित कर सकती हैं।

- **In some cases, while an innovator drug is designed to release the API slowly to achieve a sustained therapeutic effect, generics may release the API more rapidly, potentially leading to fluctuations in drug levels.**

कुछ मामलों में, जबकि एक इनोवेटर ड्रग को धीरे-धीरे API जारी करने के लिए डिज़ाइन किया गया है ताकि स्थायी चिकित्सीय प्रभाव प्राप्त हो सके, जेनरिक दवाइयाँ API को तेजी से जारी कर सकती हैं, जिससे दवा स्तरों में उतार-चढ़ाव हो सकता है।

- **Third, the limitations of bioequivalence thresholds contribute to the problem.**





तीसरा, जैविक समकक्षता सीमा की सीमाएँ इस समस्या में योगदान करती हैं।

- Regulatory standards often allow pharmacokinetic parameters to fall within **80%–125%** of the innovator drug's range.

नियामक मानक अक्सर फार्माकोकिनेटिक पैरामीटर को इनोवेटर ड्रग की सीमा के 80%–125% के भीतर गिरने की अनुमति देते हैं।

- These thresholds may be insufficient for medications with a narrow therapeutic index.

ये सीमाएँ संकीर्ण चिकित्सीय इंडेक्स वाली दवाइयों के लिए अपर्याप्त हो सकती हैं।

- Even minor deviations in drug release or bioavailability can lead to subtherapeutic effects or adverse reactions.

दवा रिलीज़ या जैव उपलब्धता में मामूली विचलन भी उपचिकित्सीय प्रभाव या प्रतिकूल प्रतिक्रियाएँ उत्पन्न कर सकते हैं।

- Stability issues can also further undermine the drug's shelf life and reliability.

स्थिरता समस्याएँ दवा की शेल्फ जीवन और विश्वसनीयता को और अधिक कमजोर कर सकती हैं।

- The key issue lies in India's decentralized drug regulation system, which grants significant authority to **State Drug Regulatory Authorities (SDRAs)**, leading to inconsistent enforcement and quality standards.

मुख्य समस्या भारत की विकेंद्रित दवा नियमन प्रणाली में है, जो राज्य दवा नियामक प्राधिकरण (SDRAs) को महत्वपूर्ण अधिकार देती है, जिससे प्रवर्तन और गुणवत्ता मानकों में असंगतता होती है।

- The **Central Drugs Standard Control Organisation (CDSCO)** can only recommend action, leaving States to act.

केंद्रीय औषधि मानक नियंत्रण संगठन (CDSCO) केवल कार्रवाई की सिफारिश कर सकता है, राज्यों को कार्य करने के लिए छोड़ता है।

- Despite repeated calls for centralisation, crucial functions remain with States, enabling regulatory arbitrage as manufacturers exploit weaker oversight.

केंद्रीकरण के लिए बार-बार किए गए आह्वानों के बावजूद, महत्वपूर्ण कार्य राज्य सरकारों के पास रहते हैं, जिससे विनियामक चूक की संभावना बढ़ जाती है क्योंकि निर्माता कमजोर निगरानी का फायदा उठाते हैं।

- India must centralise drug regulation, strengthen **CDSCO** with resources and personnel, and establish more central drug-testing labs to address this issue.

भारत को दवा नियमन को केंद्रीकृत करना चाहिए, CDSCO को संसाधनों और कर्मचारियों के साथ मजबूत करना चाहिए, और इस मुद्दे का समाधान करने के लिए अधिक केंद्रीय दवा परीक्षण प्रयोगशालाएँ स्थापित करनी चाहिए।

- Another reason is the inadequate enforcement of stability testing to ensure drug efficacy under diverse climatic conditions.

एक और कारण स्थिरता परीक्षण को सही से लागू न किया जाना है, ताकि विविध जलवायु परिस्थितियों में दवा की प्रभावशीलता सुनिश्चित हो सके।





- Stability testing, mandated by **CDSO** in 2018, requires manufacturers to demonstrate that drugs maintain their quality

Why were Romanian polls annulled?

What prompted the constitutional court to declare the European nation's presidential polls invalid? Who is Calin Georgescu and what has been his role in the elections? What are the allegations levelled against Russia and has the country faced similar accusations in the past in the region?

GS Paper II: East Europe

EXPLAINER

Garimella Subramaniam

The story so far:-

In an unprecedented ruling on December 6, Romania's constitutional court unanimously annulled the country's presidential elections, two days before the run-off ballot, amid allegations of Russian interference. Suspicions of foul play were fuelled when Calin Georgescu emerged frontrunner, securing 22.9% of the vote, after the first round of polling on November 24. A professor of environmental sciences who fought as an independent and had polled in single digits until then, Mr. Georgescu is an ex-honorary member of the far-right Alliance for the Union of Romanians (AUR) party. He has been portrayed as an admirer of Russian President Vladimir Putin, and a critic of Romania's membership of the North Atlantic Treaty Organization (NATO) and the European Union (EU). Mr. Georgescu was even suggested as the Prime Minister candidate by the AUR party, which came second in the legislative elections of December 1.

The Constitutional Court in Bucharest had ordered a recount in response to complaints by two of the contestants who were eliminated in the first round. Once the exercise confirmed the previous tally, the judges had given the go ahead for the knock-out round on December 8. However, the unfolding dramatic turn of events prompted the court to call off the elections altogether, concluding that the process was marred by multiple irregularities.

How serious are the allegations?

Days before the aborted run-off, Romania's National Security Council declassified troves of documents from the Interior Ministry, detailing how the country had been a target of Russian cybercrimes, information leaks and sabotage. It said some 800 TikTok



Catalin Georgescu has been portrayed as an admirer of Vladimir Putin and a critic of Romania's membership of NATO and the EU.AFP

accounts created in 2016 were activated in support of Mr. Georgescu a month before the ballot and thousands closer to the polling date. More than 100 paid influencers with a few million followers were deployed to boost Mr. Georgescu's prospects. Romania's secret service (SRI) has claimed it has identified thousands of cyberattacks originating from Russian platforms, which routed their operations from several countries, and distorted the information presented to the public. The agency singled out Mr. Georgescu, who had claimed that he had no access to campaign funds, as having received preferential treatment from TikTok, because the platform owned by ByteDance did not label his video posts as political advertisement. TikTok has denied any wrongdoing and taken down thousands of disputed posts and promised full cooperation with the authorities. Telegram and Discord are the other channels Romanian authorities have blamed for involvement in these covert and coordinated operations.

What is the status of the probe?

In a complaint filed with the EU regulator, Romania's media watchdog has alleged that TikTok's algorithms amplified Mr. Georgescu's content to the disadvantage of other candidates. Subject to available evidence, the commission could investigate the Chinese social media platform for potential violations under the EU's Digital Services Act (DSA). The law stipulates content moderation obligations on large online platforms to mitigate systemic risks, including the electoral processes and imposes penalties of up to 6% of global annual turnover. TikTok has already been served an order under the DSA to preserve for scrutiny all its data relating to European elections.

What explains Georgescu's appeal?

The TikTok messenger that spectacularly propelled his victory does not detract from the resonance of Mr. Georgescu's ultra-nationalist message among an electorate disenchanted with the dominance of the mainstream Social

Democratic Party and the National Liberal Party since the fall of communism. High inflation, a ballooning fiscal deficit and balance of payments challenges, not to mention rampant corruption in high places and contempt for the rule of law, have been weaponised by populist and extremist groups to peddle propaganda and conspiracy theories.

How widespread are concerns of Russian meddling in the region?

From orchestrating a so-called hybrid warfare of spreading disinformation, cyberattacks and sabotage, to paying off pro-Russian MEPs (Members of the European Parliament), Moscow's controversial role came into sharp focus during the European parliament elections in June.

In response, Belgium and the Czech Republic coordinated investigations that led, among other actions, Prague to impose sanctions on an oligarch close to Mr. Putin for promoting a pro-Russia narrative via Voice of Europe website, which has since been taken down.

While a German MP from the Alternative for Germany (AfD) party is under a probe for receiving money from a pro-Russia campaign, the Belgian government in April passed legislation to criminalise foreign interference in the political process.

In Moldova, the fragile post-Soviet republic, Moscow is accused of plotting to destabilise the pro-EU government, and interference in President Maia Sandu's re-election and the referendum on EU accession in October.

What next?

While a re-run of the presidential contest is expected next year, the Mayor of Bucharest has thrown his hat in the ring. The ultra-nationalist Mr. Georgescu has vowed to challenge the decision in the Supreme Court. Romanian tax authorities have launched financial investigations against the social influencers behind Georgescu's campaign, some of whom have since fled the country.

THE GIST

▼ Romania's presidential elections were annulled amid allegations of Russian interference

▼ Suspicions of foul play were alleged after Calin Georgescu from the political fringe emerged frontrunner, securing 22.9% of the vote, after the first round of polling on November 24

▼ In a complaint filed with the EU regulator, Romania's media watchdog has alleged that TikTok's algorithms amplified Mr. Georgescu's content to the disadvantage of other candidates

Romanian Polls Annulled

रोमानियाई चुनाव रद्द किए गए

On December 6, 2024, Romania's constitutional court unanimously annulled the presidential elections, just two days before the runoff. The annulment was amid allegations of Russian interference.

Website: patrioticias.in

Telegram Channel: <https://t.me/patrioticIAS>





6 दिसंबर 2024 को, रोमानिया के संवैधानिक न्यायालय ने राष्ट्रपति चुनावों को सर्वसम्मति से रद्द कर दिया, केवल दो दिन पहले जब रनऑफ होने वाला था। यह रद्दीकरण रूस की दखलअंदाजी के आरोपों के बीच हुआ।

- The **suspicious of foul play** grew when **Călin Georgescu**, an independent candidate, emerged as the frontrunner, securing 22.9% of the vote after the first round on **November 24, 2024**.

धोखाधड़ी का संदेह तब और बढ़ गया जब कालिन जॉर्जस्कू, एक स्वतंत्र उम्मीदवार, पहले दौर के बाद 22.9% वोट प्राप्त कर अग्रणी के रूप में उभरे, जो 24 नवंबर 2024 को था।

- Călin Georgescu is a **professor of environmental sciences** and an **ex-honorary member** of the far-right **Alliance for the Union of Romanians (AUR)** party.

कालिन जॉर्जस्कू एक पर्यावरण विज्ञान के प्रोफेसर हैं और दूर-दराज के अधिकारवादी पार्टी AUR के एक पूर्व मानद सदस्य हैं।

- He has been **portrayed as an admirer of Russian President Vladimir Putin** and a **critic of NATO and EU membership**.

उन्हें रूसी राष्ट्रपति व्लादिमीर पुतिन के प्रशंसक और नाटो और यूरोपीय संघ सदस्यता के आलोचक के रूप में चित्रित किया गया है।

- The Constitutional Court had initially ordered a **recount** after complaints from two eliminated candidates. The recount confirmed the previous tally, but the court annulled the elections entirely due to **multiple irregularities**.

संविधानिक न्यायालय ने पहले दो हटा दिए गए उम्मीदवारों की शिकायतों के बाद पुनर्गणना का आदेश दिया था। पुनर्गणना ने पिछले परिणाम की पुष्टि की, लेकिन न्यायालय ने कई अनियमितताओं के कारण चुनावों को पूरी तरह से रद्द कर दिया।

- Romania's **National Security Council** declassified documents detailing **Russian cybercrimes, information leaks, and sabotage**. These documents revealed that **800 TikTok accounts** were activated to support Georgescu's campaign.

रोमानिया की राष्ट्रीय सुरक्षा परिषद ने ऐसे दस्तावेज़ सार्वजनिक किए जिनमें रूस की साइबर अपराध, सूचना लीक, और विध्वंस का विवरण था। इन दस्तावेज़ों में खुलासा किया गया कि 800 टिकटोक खाते जॉर्जस्कू के अभियान को समर्थन देने के लिए सक्रिय किए गए थे।

- The **Romanian secret service (SRI)** identified thousands of **cyberattacks originating from Russian platforms** that distorted information.

रोमानियाई गुप्त सेवा (SRI) ने रूसी प्लेटफार्मों से उत्पन्न हजारों साइबर हमलों की पहचान की जो जानकारी को विकृत कर रहे थे।

- **TikTok** has been accused of **amplifying Georgescu's content**, with Romanian authorities alleging preferential treatment.

टिकटोक पर जॉर्जस्कू की सामग्री को प्रसारित करने का आरोप है, और रोमानियाई अधिकारियों का कहना है कि इसे विशेष प्राथमिकता दी गई थी।

- Romania's **media watchdog** filed a complaint with the **EU regulator**, alleging TikTok's algorithms amplified Georgescu's content to the detriment of other candidates.

रोमानिया के मीडिया वॉचडॉग ने EU नियामक के पास शिकायत की, जिसमें आरोप लगाया गया





PATRIOTIC IAS: Near Rajbanshi Hospital, Paidleyganj Road, Gorakhpur

Contact Number: 9971932488

कि टिकटोक के एल्गोरिदम ने जॉर्जेस्कू की सामग्री को अन्य उम्मीदवारों के नुकसान में बढ़ा दिया।

- **TikTok** has been served an order under the **EU's Digital Services Act (DSA)** to preserve all data related to the elections.

टिकटोक को **EU के डिजिटल सेवाएं अधिनियम (DSA)** के तहत आदेश दिया गया है कि वह चुनावों से संबंधित सभी डेटा संरक्षित करे।

Georgescu's Appeal

जॉर्जेस्कू की अपील

- Despite the allegations, Călin Georgescu's **ultra-nationalist message** resonated with a disenchanted electorate facing **high inflation, fiscal deficit, and corruption issues**. आरोपों के बावजूद, कालिन जॉर्जेस्कू का **अत्यधिक राष्ट्रवादी संदेश** एक निराश जनमत से जुड़ा, जो उच्च मुद्रास्फीति, वित्तीय घाटे, और भ्रष्टाचार की समस्याओं का सामना कर रहा था।
- His message found support among voters frustrated with the dominance of the **Social Democratic Party (PSD)** and the **National Liberal Party (PNL)** since the fall of communism.

उसका संदेश उन मतदाताओं में समर्थन पा गया जो **सामाजिक लोकतांत्रिक पार्टी (PSD)** और **राष्ट्रीय लिबरल पार्टी (PNL)** के कम्युनिज़्म के पतन के बाद के प्रभुत्व से निराश थे।

Russian Meddling Concerns

रूस की दखलअंदाजी के बारे में चिंता

- Russia has been accused of **hybrid warfare**, involving **disinformation, cyberattacks, and sabotage**. रूस पर **हाइब्रिड युद्ध** का आरोप है, जिसमें सूचना विकृतियां, साइबर हमले, और विध्वंस शामिल हैं।
- There have been accusations of Russian interference in the **European Parliament elections in June 2024**, leading to investigations in **Belgium and the Czech Republic**. जून 2024 में यूरोपीय संसद चुनावों में रूस की दखलअंदाजी के आरोपों के बाद **बेल्जियम और चेक गणराज्य** में जांच की गई।
- In **Moldova**, Russia is accused of attempting to destabilize the pro-EU government, including interference in the **President Maia Sandu's re-election and referendum on EU accession**.

मोल्दोवा में, रूस पर **प्रो-EU सरकार** को अस्थिर करने की कोशिश करने का आरोप है, जिसमें राष्ट्रपति **माया सैंडू** के पुनः चुनाव और **EU सदस्यता पर जनमत संग्रह** में दखलअंदाजी शामिल है।

Next Steps in Romania

रोमानिया में आगे के कदम

Website: patrioticias.in

Telegram Channel: <https://t.me/patrioticIAS>





- A re-run of the presidential election is expected next year.
अगले साल राष्ट्रपति चुनाव की पुनरावृत्ति की उम्मीद है।
- The Mayor of Bucharest has announced his candidacy.
बुखारेस्ट के मेयर ने अपनी उम्मीदवारी की घोषणा की है।
- Călin Georgescu has vowed to challenge the court's decision in the Supreme Court.
कालिन जॉर्जस्कू ने सुप्रीम कोर्ट में न्यायालय के फैसले को चुनौती देने की कसम खाई है।
- Romanian tax authorities have launched financial investigations into the social influencers involved in Georgescu's campaign.
रोमानियाई कर प्राधिकरणों ने जॉर्जस्कू के अभियान में शामिल सोशल इन्फ्लुएंसर्स के खिलाफ वित्तीय जांचें शुरू की हैं।

What did the U.S. Congressional report on COVID origins find?

How did the U.S. government, in the report, arrive at the conclusion that SARS-CoV-2 emerged from a laboratory leak? What is a furin cleavage site and how does it come into play in this case?

GS Paper II: Super Powers

Priyali Prakash

The story so far:

A U.S. Congressional committee led by Republican Brad Wenstrup has concluded that the COVID-19 pandemic was the result of the spread of a virus that likely leaked from a research facility in Wuhan, China.

The final report of the Select Subcommittee on the Coronavirus Pandemic, established in 2023, was published on December 2, 2024.

The report runs over 500 pages and, according to committee members, will serve as a roadmap for government action during future pandemics.

"A future pandemic requires a whole-of-America response managed by those without personal benefit or bias," Mr. Wenstrup wrote. "We can always do

better, and for the sake of future generations of Americans, we must."

What is the lab-leak theory?

The report stated that SARS-CoV-2, the virus responsible for the COVID-19 pandemic, possibly emerged from a laboratory leak.
It based this conclusion on inferred or circumstantial claims made early during the pandemic.

It quoted an unclassified factsheet from January 2021 published by the U.S. State Department that said: "The U.S. government has reason to believe several researchers inside the WIV [Wuhan Institute of Virology] became sick in autumn 2019, before the first identified case of the outbreak, with symptoms consistent with both COVID-19 and common seasonal illness."

The report itself does not directly

prove the lab-leak theory, however.

The report also quoted statements by molecular biologist Alina Chan in June 2024 in support of the lab-leak hypothesis.

In one statement, Dr. Chan said the virus emerged in Wuhan, which is also home to China's "foremost research lab for SARS-like viruses", and that Shi Zhengli, a senior virologist at WIV, "has been researching SARS-like viruses for over a decade and even initially wondered if the outbreak came from the WIV".

But at a conference in Japan on December 4, Dr. Shi reportedly refuted the claim that the viruses she was studying were ancestors of the SARS-CoV-2 pathogen.

She had earlier promised to sequence the genomes of 56 betacoronaviruses she and her team had collected between 2004 and 2021 and were studying. She

presented the sequencing data and their analyses at the conference. (The latter have yet to be peer-reviewed.)

The Select Subcommittee report also noted an observation by Nicholas Wade, former science editor at *The New York Times*, in January 2024, that SARS-CoV-2 "possesses a furin cleavage site, found in none of the other 871 known members of its viral family, so it cannot have gained such a site through the ordinary evolutionary swaps of genetic material within a family."

A furin cleavage is the process by which the furin enzyme breaks up specific proteins to activate them. The furin cleavage site in SARS-CoV-2 controls how it interacts with human cells to cause the disease.

A letter published in *The Lancet* in August 2023 by researchers from Cornell University refuted Mr. Wade's idea and said the site could have evolved naturally, as opposed to being genetically engineered.

What else does the report say?

The report also said the U.S. National Institutes of Health (NIH) funded gain-of-function research at WIV.

Gain-of-function research refers to studies where researchers genetically alter organisms to give them additional functions, like enhanced transmissibility or infectivity.

THE GIST

▼
The report claims several researchers inside the WIV became sick in autumn 2019 with symptoms consistent with both COVID-19 and common seasonal illness

▼
However, the report itself does not directly prove the lab-leak theory

▼
The report also says the U.S. National Institutes of Health (NIH) funded gain-of-function research at WIV

U.S. Congressional Report on COVID Origins

कोविड के उद्भव पर अमेरिकी कांग्रेस की रिपोर्ट

A U.S. Congressional committee led by Republican Brad Wenstrup concluded that the COVID-19 pandemic was the result of the spread of a virus that likely leaked from a research facility in Wuhan, China. रिपब्लिकन ब्रैड वेंस्ट्रप द्वारा नेतृत्व किए गए एक अमेरिकी कांग्रेस समिति ने निष्कर्ष निकाला कि कोविड-19 महामारी एक वायरस के प्रसार के परिणामस्वरूप थी जो शायद चीन के वुहान स्थित एक अनुसंधान सुविधा से लीक हुआ था।





- The final report of the **Select Subcommittee on the Coronavirus Pandemic**, established in **2023**, was published on **December 2, 2024**.
कोरोनावायरस महामारी पर चयनित उपसमिति की अंतिम रिपोर्ट, जो 2023 में स्थापित की गई थी, 2 दिसंबर 2024 को प्रकाशित की गई।
- The report runs over **500 pages** and will serve as a roadmap for government action during future pandemics.
रिपोर्ट 500 पृष्ठों से अधिक है और भविष्य में महामारी के दौरान सरकारी कार्रवाई के लिए एक रोडमैप के रूप में कार्य करेगा।

What is the lab-leak theory?

लैब-लीक सिद्धांत क्या है?

- The report stated that **SARS-CoV-2**, the virus responsible for the **COVID-19 pandemic**, possibly emerged from a laboratory leak.
रिपोर्ट ने कहा कि **SARS-CoV-2**, जो **COVID-19 महामारी** के लिए जिम्मेदार वायरस है, संभवतः एक लैब लीक से उत्पन्न हुआ।
- It quoted an unclassified factsheet from **January 2021** published by the **U.S. State Department**.
इसने जनवरी 2021 में अमेरिकी राज्य विभाग द्वारा प्रकाशित एक अप्रकाशित तथ्य पत्रिका का हवाला दिया।
- The report mentioned that **several researchers** inside the **Wuhan Institute of Virology (WIV)** became sick in autumn **2019**, before the first identified case of the outbreak.
रिपोर्ट में कहा गया कि **वुहान इंस्टीट्यूट ऑफ वायरोलॉजी (WIV)** के अंदर कई शोधकर्ता 2019 की शरद ऋतु में बीमार हो गए थे, महामारी के पहले पहचाने गए मामले से पहले।

Furin Cleavage Site

फ्यूरिन क्लेवेज साइट

- The report noted an observation by **Nicholas Wade**, former science editor at **The New York Times**, in **January 2024**, about **SARS-CoV-2 possessing a furin cleavage site**.
रिपोर्ट में **निकोलस वेड**, जो **न्यूयॉर्क टाइम्स** के पूर्व विज्ञान संपादक हैं, द्वारा जनवरी 2024 में की गई एक अवलोकन का उल्लेख किया गया है कि **SARS-CoV-2** में एक **फ्यूरिन क्लेवेज साइट** है।
- **Furin cleavage** is the process by which the **furin enzyme** breaks up specific proteins to activate them.
फ्यूरिन क्लेवेज वह प्रक्रिया है जिसके द्वारा **फ्यूरिन एंजाइम** विशिष्ट प्रोटीनों को तोड़ता है ताकि उन्हें सक्रिय किया जा सके।
- A letter published in **The Lancet** in **August 2023** by researchers from **Cornell University** refuted Mr. Wade's idea.
द **लांसेट** में अगस्त 2023 में **कॉर्नेल विश्वविद्यालय** के शोधकर्ताओं द्वारा प्रकाशित एक पत्र ने श्री वेड के विचार को खारिज किया।





What else does the report say?

रिपोर्ट में और क्या कहा गया है?

- The report stated that the **U.S. National Institutes of Health (NIH)** funded **gain-of-function research at WIV**. रिपोर्ट में कहा गया कि अमेरिकी राष्ट्रीय स्वास्थ्य संस्थान (NIH) ने WIV में गेन-ऑफ-फंक्शन शोध को वित्त पोषित किया।
- **Gain-of-function research** refers to studies where researchers genetically alter organisms to give them additional functions, like enhanced transmissibility or infectivity. गेन-ऑफ-फंक्शन शोध उन अध्ययन को संदर्भित करता है जहां शोधकर्ता जीवों को आनुवंशिक रूप से बदलते हैं ताकि उन्हें अतिरिक्त कार्य मिल सकें, जैसे बढ़ी हुई संप्रेषणीयता या संक्रामकता।

Nature whisperers: women's unique connection with the environment

Exploring literature on climate and nature through the perspective of women authors helps to reflect on what it means to live ethically, responsibly and healthily in consonance with nature. The writers exhort stakeholders to listen to women's voices in the larger fight for climate justice

Essay
GS Paper III: Women and Environment
Soma Dasu

Scientists and activists have warned the world about climate crisis for long. Yet, climate commitments fall short of actions needed to avoid disastrous consequences. The annual international climate summit (COP) or the environment-related days (nine in a calendar year) remind us of the challenges we face due to climate change but that effort on climate justice is too little and late.

Do we not care enough or we do not know enough to care for the environment?

Interestingly, Amitav Ghosh argues that nature does not need humans to stand up and defend it and so, instead of seeking out new ideas to address the ecological crisis, we should return to ancient stories the earth has been telling us. "We can confront the crisis not by trying to save the planet but by listening to it," he writes in an essay, *Brutes: Meditations on the Myth of the Voiceless*.

American environmentalist Charles Eisenstein underlines in his 2018 book, *Climate A New Theory*, that much of the climate derangement comes from direct disruption of ecosystems. He says the core of the crisis is ecocide, the killing of the ecosystem, and not warming.

Vital cog in the wheel

The work of writers such as American naturalist Henry David Thoreau or environmental philosopher John Muir have helped to shape the way we view nature. But women too are vital voices who are often missing from the proverbial table.

The relationship between women and the land is difficult to trace due to lack of documentation, though women sow and till fields and shape the way their cultures

relate to the land. Travel writer Suzanne Roberts gives food for thought on the masculinity of wilderness: "I realised I had been relying on a male translation of nature rather than listening to my own voice".

In his novel *Hungry Tide* (2004), Ghosh portrays nature as mother and writes human beings have to take help of nature for a comfortable life. As nurturers, women have a connect with nature and fight climate change through nature-connectedness. But their voices have remained in a minority in climate discourse and nature writing.

Environmental thinker Vandana Shiva is among the few who has to her credit a score of influential books on the subject. She is one who believes women and nature are associated not in passivity but in creativity and in the maintenance of life. In her new book, *The Nature of Nature: The Metabolic Disorder of Climate Change* (2024), she explores the intimate links between food and climate to look deep into the root causes of climate change.

"What we eat, how we grow the food we eat, how we distribute it, will determine whether humanity survives or pushes itself and other species to extinction," writes Shiva, while explaining the incontrovertible connections between a global warming climate and an agricultural system based on techno-optimism. She says food is the currency of life, indivisible from earth and its natural systems, and argues powerfully for a food and climate future based on regeneration or biodiversity, in partnership with the biosphere.

Turning back to nature

Like Ghosh, she writes that in an age of climate catastrophes, we need to turn back to nature and learn once again how

to live sustainably on planet earth, offering alternatives that work according to nature's ecological laws and are the real solutions to rejuvenate and regenerate the planet. Shiva analyses the false promises made by technology – oriented lab-intensive digital agriculture and calls out the fake and ultra-processed food industries that are impacting the world's health and food security.

Another widely published author, Prerna Singh Bindra, lobbies with governments on conservation issues and in her book *The Vanishing – India's Wildlife Crisis* (2017), she exhorts thinking citizens to acknowledge the Indian wildlife crisis due to development projects tearing into their habitats.

'Sixth extinction'

Bindra travels to far-flung forests to put the spotlight on the vanishing natural heritage. India is in the midst of mass 'sixth extinction' is her worry, as she writes, "We are losing species in our backyard." The once ubiquitous sparrows, or the fireflies that lit up the nights have dwindled; in the forests, great Indian bustards are down to a 100; the end of the gharial indicates the poisoning and death of the clear and fast-flowing rivers. She tells readers why extinction matters and how the fate of wildlife is linked to humans. She pushes against this "ecocide."

Arati Kumar Rao journeyed across India's diverse landscapes for more than a decade to study the slow violence inflicted in the fragile environment and how it impacts livelihoods. Her book, *Marginlands – Indian Landscapes on the Brink* (2023) throws light on the subtle tectonic changes taking place across ecosystems in India.

She cites examples of the Thar where miners bulldoze sand dunes that guard

life-sustaining water; the Gangetic dolphin that now struggles for survival as its riverine habitat is fragmented by dams and roiled by incessant shipping; the cataclysmic floods that unleashes fury on Mumbai due to encroachments.

"As the spectre of climate change compounds natural and human-induced disasters, India's most endangered landscapes are pushed to the precipice of destruction," she warns, making her book a haunting read about failed government schemes, exaggerated promises and human follies.

Leadership qualities

There are few other books by women writers that attempt to demystify climate change, explain what the fuss is all about and why it matters to our survival.

Named one of the best books of the year by Smithsonian Magazine, *All We Can Save* (2020) by Ayana Elizabeth and Katherine K. Wilkinson contains essays from women at the forefront of the climate movement and reveals their leadership rooted in compassion, connection, and collaboration. "To change everything, we need everyone," is their message.

A groundbreaking perspective is a rare anthology, *Women on Nature* (2021) by Katharine Norbury which has 100+ voices on place, landscape and the natural world. Another book *Everglades: River of Grass* (1947) by journalist and conservationist Marjory Stoneman Douglas is about her efforts to protect the fragile wetlands of Florida.

Nature may be complicated to write about but a gendered outlook can help to enhance the understanding of how to value biodiversity. These books are both a balm and a guide for knowing what has been done to the world, and how to save our collective future.





Nature whisperers: women's unique connection with the environment

प्रकृति के साथ महिलाओं का अनोखा संबंध

Exploring literature on climate and nature through the perspective of women authors helps to reflect on living ethically, responsibly, and healthily in harmony with nature.

जलवायु और प्रकृति पर महिलाओं के दृष्टिकोण से साहित्य का अन्वेषण हमें नैतिक रूप से, जिम्मेदारी से और प्रकृति के साथ सामंजस्यपूर्ण ढंग से जीने पर विचार करने में मदद करता है।

- **Amitav Ghosh** argues that nature does not need humans to defend it; instead of seeking new ideas, we should return to ancient stories that the earth has been telling us. अमिताव घोश का तर्क है कि प्रकृति को बचाने के लिए मनुष्यों की आवश्यकता नहीं है; नई विचारधाराओं के बजाय, हमें प्राचीन कथाओं की ओर लौटना चाहिए, जो पृथ्वी हमें बताती रही है।
- **Charles Eisenstein** emphasizes that the core of the crisis is **ecocide** (the killing of ecosystems), not just warming.

चार्ल्स आइजन्स्टाइन का कहना है कि संकट का मूल कारण **ईकोसाइड** (पारिस्थितिकी तंत्र की हत्या) है, केवल तापमान वृद्धि नहीं।

- **Henry David Thoreau** and **John Muir** shaped how we view nature, but **women's voices** have often been missing in climate discourse and nature writing.

हेनरी डेविड थोरो और जॉन म्यूर

ने प्रकृति के प्रति हमारे दृष्टिकोण को आकार दिया, लेकिन **महिलाओं की आवाज़ें** अक्सर जलवायु चर्चा और प्रकृति लेखन में अनुपस्थित रही हैं।

- **Suzanne Roberts** reflects on the **masculinity of wilderness**, realizing she relied on a male translation of nature instead of listening to her own voice. सुज़ैन रॉबर्ट्स ने प्राकृतिक इलाकों की पुरुषत्व पर विचार करते हुए महसूस किया कि उन्होंने प्रकृति की पुरुषवादी व्याख्या पर निर्भर किया था, न कि अपनी खुद की आवाज़ सुनने पर।
- In **Amitav Ghosh's novel Hungry Tide (2004)**, nature is portrayed as **mother**, and human beings need nature for a comfortable life.





अमिताव घोश के उपन्यास "हंग्री टाइड (2004)" में प्रकृति को माँ के रूप में चित्रित किया गया है, और मनुष्यों को आरामदायक जीवन के लिए प्रकृति की आवश्यकता है।

- **Vandana Shiva** argues that women and nature are connected not passively but creatively, in the maintenance of life. Her book **The Nature of Nature: The Metabolic Disorder of Climate Change (2024)** explores food and climate connections.
वंदना शिवा का कहना है कि महिलाएँ और प्रकृति केवल निष्क्रिय रूप से जुड़े नहीं हैं, बल्कि जीवन के संरक्षण में रचनात्मक रूप से जुड़ी हैं। उनकी किताब "द नेचर ऑफ नेचर: द मेटाबोलिक डिसऑर्डर ऑफ क्लाइमेट चेंज (2024)" खाद्य और जलवायु के संबंधों की जांच करती है।
- **Vandana Shiva** critiques **technological agriculture** and **processed food industries**, which harm health and food security, urging a focus on **regenerative agriculture** based on **biodiversity**.
वंदना शिवा प्रौद्योगिकी आधारित कृषि और प्रोसेस्ड खाद्य उद्योगों की आलोचना करती हैं, जो स्वास्थ्य और खाद्य सुरक्षा को नुकसान पहुँचाते हैं, और जैव विविधता आधारित पुनर्जनन कृषि पर ध्यान देने का आह्वान करती हैं।
- **Prerna Singh Bindra** writes about the **Indian wildlife crisis** and the "sixth extinction", focusing on species like the **great Indian bustard** and **gharial**.
प्रेरणा सिंह बिंद्रा भारतीय वन्यजीव संकट और "छठी विलुप्ति" पर लिखती हैं, और महान भारतीय बस्टर्ड और घड़ियाल जैसे प्रजातियों पर ध्यान केंद्रित करती हैं।
- **Arati Kumar Rao** highlights the **slow violence** inflicted on ecosystems in India in her book **Marginlands — Indian Landscapes on the Brink (2023)**.
आरती कुमार राव अपने पुस्तक "मार्जिनलैंड्स – इंडियन लैंडस्केप्स ऑन द ब्रिंक (2023)" में भारत में पारिस्थितिकी तंत्र पर लगाए गए धीमे हिंसा को उजागर करती हैं।
- **Ayana Elizabeth** and **Katherine K. Wilkinson's All We Can Save (2020)** includes essays from women leading the **climate movement**, emphasizing leadership based on **compassion, connection, and collaboration**.
आयाना एलिजाबेथ और कैथरीन के. विल्किन्सन की "ऑल वी कैन सेव (2020)" में उन महिलाओं के निबंध हैं जो जलवायु आंदोलन का नेतृत्व कर रही हैं, और करुणा, संपर्क, और सहयोग पर आधारित नेतृत्व पर जोर देती हैं।
- **Katharine Norbury's Women on Nature (2021)** includes over 100 voices on place, landscape, and the natural world.
कैथरीन नॉर्बरी की "विमेन ऑन नेचर (2021)" में स्थान, परिदृश्य और प्राकृतिक दुनिया पर 100 से अधिक आवाजें हैं।
- **Marjory Stoneman Douglas's Everglades: River of Grass (1947)** is about protecting Florida's **fragile wetlands**.
मार्जोरी स्टोनमैन डगलस की "एवरग्लेड्स: रिवर ऑफ ग्रास (1947)" फ्लोरिडा के नाजुक आर्द्रभूमियों की रक्षा पर आधारित है।
- Gendered outlook in nature writing enhances understanding of how to value **biodiversity**.
प्रकृति लेखन में लिंग आधारित दृष्टिकोण जैव विविधता की महत्ता को समझने में मदद करता है।





- These books serve as both a balm and a guide to understanding what has been done to the world and how to save our collective future.
ये किताबें दुनिया के साथ किए गए कार्यों को समझने और हमारे सामूहिक भविष्य को बचाने के लिए एक उपचार और मार्गदर्शक के रूप में कार्य करती हैं।

After India visit, Dissanayake discusses maritime research and development with China

GS Paper II: India_Sri Lanka: Chinese Angle

Meera Srinivasan
COLOMBO

A day after returning from India following a three-day visit, Sri Lankan President Anura Kumara Dissanayake discussed Chinese development partnership, investments and a possible resumption of maritime research with a visiting member of the Chinese People's Political Consultative Conference (CPPCC).

In a meeting with Qin Boyong, vice-chairperson of the National Committee of the CPPCC, held on Wednesday, Mr. Dissanayake expressed "gratitude to the Chinese government for its support during debt restructuring as well as in the face of the economic crisis", his office said.

Mr. Dissanayake "emphasised the continued need for China's support in the future," the Presidential Media Division said in a statement that outlined discussions on unfinished



Anura Kumara Dissanayake

He meets a visiting member of Chinese People's Political Consultative Conference

Chinese projects and potential investments.

Ms. Qin stated that there are "plans to restart maritime research activities, which were temporarily halted for various reasons, along with initiating relevant projects", the President's office said. The statement assumes significance, with Sri Lanka's one-year moratorium on

research vessels – imposed by Colombo after New Delhi raised concern over Chinese research vessels calling at Sri Lankan ports – expiring soon.

During his recent visit, President Dissanayake said he assured Prime Minister Narendra Modi that "Sri Lanka will not permit its territory to be used in any manner inimical to the security of India as well as towards regional stability".

Briefing the media soon after, Foreign Secretary Vikram Misri said Mr. Dissanayake's statement could have a bearing on Sri Lanka's clearance for foreign vessels. Further, speaking at an event in New Delhi, Foreign Minister Vijitha Herath said the Sri Lankan government had appointed a committee to review the moratorium.

Following his first state visit abroad to India, Mr. Dissanayake is scheduled to travel to Beijing next month.

Conference (CPPCC).

भारत की तीन दिवसीय यात्रा के बाद श्रीलंकाई राष्ट्रपति अनुरा कुमार दिस्सानायके ने चीनी विकास साझेदारी, निवेश और समुद्री अनुसंधान को फिर से शुरू करने की

India visit, Dissanayake discusses maritime research and development with China

भारत यात्रा,

दिस्सानायके ने चीन

के साथ समुद्री

अनुसंधान और विकास

पर चर्चा की

Following a three-day visit to India, Sri Lankan President Anura Kumara Dissanayake discussed Chinese development partnership, investments, and the possible resumption of maritime research with a visiting member of the Chinese People's Political Consultative





संभावना पर चर्चा की, जो चीनी जन राजनीति परामर्श समिति (CPPCC) के एक सदस्य के साथ की।

- In a meeting with **Qin Boyong**, vice-chairperson of the **National Committee of the CPPCC**, held on **Wednesday**, Mr. Dissanayake expressed “gratitude to the Chinese government for its support during **debt restructuring** as well as in the face of the **economic crisis**,” his office said.

बुधवार को CPPCC की राष्ट्रीय समिति की उपाध्यक्ष चिन बयॉन्ग के साथ एक बैठक में, श्री दिस्सानायके ने ऋण पुनर्गठन के दौरान और आर्थिक संकट के समय चीनी सरकार के समर्थन के लिए “आभार” व्यक्त किया, जैसा कि उनके कार्यालय ने कहा।

- Mr. Dissanayake “emphasised the continued need for China’s support in the future,” the **Presidential Media Division** said in a statement that outlined discussions on unfinished Chinese projects and potential investments.

श्री दिस्सानायके ने “भविष्य में चीन के समर्थन की निरंतर आवश्यकता” पर जोर दिया, राष्ट्रपति मीडिया विभाग ने एक बयान में कहा जिसमें अप्रचलित चीनी परियोजनाओं और संभावित निवेशों पर चर्चा की गई।

- **Ms. Qin** stated that there are “plans to restart maritime research activities, which were temporarily halted for various reasons, along with initiating relevant projects,” the President’s office said.

सुश्री चिन ने कहा कि “समुद्री अनुसंधान गतिविधियाँ फिर से शुरू करने की योजनाएँ हैं, जिन्हें विभिन्न कारणों से अस्थायी रूप से रोका गया था, साथ ही संबंधित परियोजनाओं की शुरुआत की जाएगी,” जैसा कि राष्ट्रपति के कार्यालय ने कहा।

- The statement assumes significance, with **Sri Lanka’s one-year moratorium on research vessels** — imposed by **Colombo** after **New Delhi raised concern** over Chinese research vessels calling at Sri Lankan ports — expiring soon.

यह बयान महत्वपूर्ण है, क्योंकि श्रीलंका का एक साल का अनुसंधान जहाजों पर स्थगन — जो कोलंबो ने नई दिल्ली द्वारा चिन चिंता उठाए जाने के बाद लागू किया था कि चीनी अनुसंधान जहाज श्रीलंकाई बंदरगाहों पर आए थे — जल्द ही समाप्त होने वाला है।

- During his recent visit, **President Dissanayake** said he assured **Prime Minister Narendra Modi** that “Sri Lanka will not permit its territory to be used in any manner inimical to the security of **India** as well as towards regional stability.”

अपनी हालिया यात्रा के दौरान, राष्ट्रपति दिस्सानायके ने कहा कि उन्होंने प्रधानमंत्री नरेंद्र मोदी को आश्वस्त किया कि “श्रीलंका अपनी भूमि का उपयोग किसी भी तरह से भारत की सुरक्षा या क्षेत्रीय स्थिरता के खिलाफ नहीं करने देगा।”

- Briefing the media soon after, **Foreign Secretary Vikram Misri** said Mr. Dissanayake’s statement could have a bearing on Sri Lanka’s clearance for foreign vessels.

मीडिया को जल्द ही ब्रीफ करते हुए, विदेश सचिव विक्रम मिश्री ने कहा कि श्री दिस्सानायके के बयान का श्रीलंका के विदेशी जहाजों के लिए मंजूरी पर प्रभाव पड़ सकता है।

- Further, speaking at an event in New Delhi, **Foreign Minister Vijitha Herath** said the Sri Lankan government had appointed a committee to review the **moratorium**.





इसके अलावा, नई दिल्ली में एक कार्यक्रम में बोलते हुए, विदेश मंत्री विजिता हेरेथ ने कहा कि श्रीलंकाई सरकार ने स्थगन की समीक्षा करने के लिए एक समिति नियुक्त की है।

- Following his **first state visit** abroad to India, Mr. Dissanayake is scheduled to travel to **Beijing** next month.

अपनी पहली राज्य यात्रा के बाद भारत, श्री दिस्सानायके अगले महीने बीजिंग यात्रा पर जाएंगे।

All 17,130 police stations in the country linked through centralised online platform **CCTNS**

GS Paper III: Internal Security

Vijaita Singh
NEW DELHI

Nearly 15 years after it was launched, all 17,130 police stations in the country have been linked through the Crime and Criminal Tracking Network and Systems (CCTNS), a centralised online platform to file first information reports (FIRs), chargesheets, and investigation reports. The online database can be accessed by law enforcement authorities across the country.

The last of nearly 40 police stations in Manipur, Nagaland, Bihar, Jharkhand, West Bengal, Lakshwadeep, and Odisha have been connected to the system in the past three months, completing 100%



The CCTNS was launched in 2009 with a budget of ₹2,000 crore. MARRI RAMU

CCTNS deployment across 28 States and eight Union Territories in the country, a senior government official said. "Police stations are registering 100% FIRs through CCTNS," the official added.

Launched in 2009 with

a budget of ₹2,000 crore, the CCTNS has become key to the implementation of the three new criminal laws rolled out on July 1.

The system has past and current crime records, including details of an accused, charge-sheeted persons, convicts, habitual offender, proclaimed offender, and others. The police can also search the database for missing persons, unidentified bodies, and stolen vehicles involved in crime incidents.

The platform can generate analytical reports regarding criminal cases, property cases, and crime statistics at the police station level.

The National Crime Records Bureau has made 23

functional modifications in the existing CCTNS application for the three criminal laws – the Bharatiya Nyaya Sanhita that replaces the Indian Penal Code, 1860; the Bharatiya Sakshya Adhinyam that replaces the Indian Evidence Act, 1872; and the Bharatiya Nagarik Suraksha Sanhita that replaces the Code of Criminal Procedure, 1898.

The changes include seeking permission of senior officers before making arrests in certain cases; providing information of arrest to relatives or friends, designated police officer and display of arrest information; serving of summons; provision to send daily diary reports to the magistrate on a fortnightly basis; forensic in-

vestigation in all cases punishable with imprisonment for more than seven years; mandatory videography of the crime scene and forensic evidence collection; biological samples to be collected on request of any police officer; police to inform progress of the investigation to the victim within 90 days; and new timelines under the new laws.

The scope of the CCTNS has been enhanced over the years to integrate the police data with other pillars of the criminal justice system namely courts, prisons, prosecution, forensics and finger prints, and accordingly a new system called the Integrated Criminal Justice System (ICJS) has been developed.

All 17,130 Police Stations in the Country Linked Through Centralised Online Platform CCTNS

देश के सभी 17,130 पुलिस थाने केंद्रीकृत ऑनलाइन प्लेटफार्म CCTNS के माध्यम से जुड़े

- Nearly 15 years after it was launched, all **17,130 police stations** in the country have been linked through the **Crime and Criminal Tracking Network and Systems (CCTNS)**, a centralised online platform to file **first information reports (FIRs)**, **chargesheets**, and **investigation reports**.

लगभग 15 वर्षों बाद, जब इसे लॉन्च किया गया था, देश के सभी 17,130 पुलिस थाने क्राइम एंड क्रिमिनल ट्रैकिंग नेटवर्क एंड सिस्टम्स (CCTNS) के माध्यम से जुड़े गए हैं, जो पहली सूचना रिपोर्ट (FIR), चार्जशीट, और जांच रिपोर्ट फाइल करने के लिए एक केंद्रीकृत ऑनलाइन प्लेटफॉर्म है।





- The online database can be accessed by law enforcement authorities across the country.
ऑनलाइन डेटाबेस को देश भर में कानून प्रवर्तन अधिकारियों द्वारा एक्सेस किया जा सकता है।
- The last of nearly 40 police stations in **Manipur, Nagaland, Bihar, Jharkhand, West Bengal, Lakshwadeep, and Odisha** have been connected to the system in the past three months, completing **100% CCTNS deployment** across **28 States** and **eight Union Territories** in the country, a senior government official said.
मणिपुर, नगालैंड, बिहार, झारखंड, पश्चिम बंगाल, लक्षद्वीप, और ओडिशा के लगभग **40 पुलिस थानों** को पिछले तीन महीनों में सिस्टम से जोड़ा गया है, जिससे देश में **28 राज्य और आठ केंद्र शासित प्रदेशों** में **100% CCTNS तैनाती** पूरी हो गई है, एक वरिष्ठ सरकारी अधिकारी ने कहा।
- "Police stations are registering **100% FIRs** through CCTNS," the official added.
अधिकारी ने कहा, "पुलिस थाने **100% FIRs** CCTNS के माध्यम से दर्ज कर रहे हैं।"
- Launched in **2009** with a budget of **₹2,000 crore**, the CCTNS has become key to the implementation of the three new criminal laws rolled out on **July 1**.
2009 में **₹2,000 करोड़** के बजट से लॉन्च किया गया CCTNS, **1 जुलाई** को लागू किए गए तीन नए आपराधिक कानूनों के क्रियान्वयन के लिए महत्वपूर्ण बन गया है।
- The system has past and current crime records, including details of an accused, charge-sheeted persons, convicts, habitual offenders, proclaimed offenders, and others.
सिस्टम में पिछले और वर्तमान अपराध रिकॉर्ड हैं, जिनमें अभियुक्त, चार्जशीट किए गए व्यक्ति, दोषी, आदतन अपराधी, घोषित अपराधी, और अन्य का विवरण शामिल है।
- The police can also search the database for missing persons, unidentified persons, unidentified bodies, and stolen vehicles involved in crime incidents.
पुलिस अपराध घटनाओं में शामिल **लापता व्यक्तियों, अज्ञात व्यक्तियों, अज्ञात शवों, और चोरी हुई वाहनों** के लिए डेटाबेस में भी खोज कर सकते हैं।
- The platform can generate **analytical reports** regarding criminal cases, property cases, and **crime statistics** at the police station level.
यह प्लेटफॉर्म पुलिस स्टेशन स्तर पर **आपराधिक मामलों, संपत्ति मामलों, और अपराध सांख्यिकी** के बारे में **विश्लेषणात्मक रिपोर्ट** उत्पन्न कर सकता है।
- The **National Crime Records Bureau** has made **23 functional modifications** in the existing CCTNS application for the three criminal laws — the **Bharatiya Nyaya Sanhita** that replaces the **Indian Penal Code, 1860**; the **Bharatiya Sakshya Adhinyam** that replaces the **Indian Evidence Act, 1872**; and the **Bharatiya Nagarik Suraksha Sanhita** that replaces the **Code of Criminal Procedure, 1898**.
राष्ट्रीय अपराध रिकॉर्ड ब्यूरो ने तीन आपराधिक कानूनों के लिए मौजूदा CCTNS आवेदन में **23 कार्यात्मक संशोधन** किए हैं – **भारतीय न्याय संहिता** जो **भारतीय दंड संहिता, 1860** को प्रतिस्थापित करती है; **भारतीय साक्ष्य अधिनियम** जो **भारतीय साक्ष्य अधिनियम, 1872** को प्रतिस्थापित करता है; और **भारतीय नागरिक सुरक्षा संहिता** जो **दंड प्रक्रिया संहिता, 1898** को प्रतिस्थापित करती है।
- The changes include seeking permission of senior officers before making arrests in certain cases; providing information of arrest to relatives or friends, designated police officer and display of arrest information; serving of summons; provision to send **daily diary reports** to the magistrate on a **fortnightly** basis; forensic investigation in all cases punishable with imprisonment for more than **seven years**; mandatory **videography** of the crime scene and forensic evidence collection; biological samples to be collected on



request of any police officer; police to inform progress of the investigation to the victim within **90 days**; and new **timelines** under the new laws.

इन बदलावों में कुछ मामलों में गिरफ्तारी करने से पहले वरिष्ठ अधिकारियों की अनुमति प्राप्त करना; गिरफ्तारी की जानकारी रिश्तेदारों या दोस्तों, नियुक्त पुलिस अधिकारी को प्रदान करना और गिरफ्तारी की जानकारी का प्रदर्शन करना; समन जारी करना; **दैनिक डायरी रिपोर्ट्स को पंद्रह दिन** के आधार पर मजिस्ट्रेट को भेजने का प्रावधान; उन सभी मामलों में फॉरेंसिक जांच करना जिनमें **सात वर्षों** से अधिक सजा दी जाती है; अपराध स्थल की अनिवार्य **वीडियोग्राफी** और फॉरेंसिक साक्ष्य एकत्रित करना; किसी भी पुलिस अधिकारी के अनुरोध पर जैविक नमूने एकत्रित करना; पुलिस को **90 दिनों** के भीतर पीड़ित को जांच की प्रगति से अवगत कराना; और नए कानूनों के तहत नए **समय सीमा**।

- The scope of the CCTNS has been enhanced over the years to integrate the police data with other pillars of the criminal justice system namely courts, prisons, prosecution, forensics, and fingerprints, and accordingly a new system called the **Integrated Criminal Justice System (ICJS)** has been developed.

CCTNS के दायरे को वर्षों में बढ़ाया गया है ताकि पुलिस डेटा को आपराधिक न्याय प्रणाली के अन्य स्तंभों जैसे न्यायालयों, कारागार, अभियोजन, फॉरेंसिक्स और अंगूठे के निशान से जोड़ा जा सके, और इस प्रकार एक नया सिस्टम **इंटीग्रेटेड क्रिमिनल जस्टिस सिस्टम (ICJS)** विकसित किया गया है।

Parliament stalled over Shah's Ambedkar remarks

GS Paper I: Ambedkar

Both Houses failed to function as the Opposition collectively demanded an apology from the Home Minister for his remarks in Rajya Sabha: Congress leads INDIA bloc's protest on the issue

The Hindu Bureau
NEW DELHI

Both Houses of Parliament failed to function on Wednesday amid protests by the Opposition over remarks made by Union Home Minister Amit Shah on B.R. Ambedkar in the Rajya Sabha a day earlier. Parliamentary Affairs Minister Kiren Rijiju said the Opposition was misleading the country by selectively quoting Mr. Shah's comments.

Targeting the Congress, Mr. Shah, in his 90-minute reply to the debate on "Glorious journey of 75 years of the Constitution of India", said it had become a "fashion" for the party to chant Dr. Ambedkar's name. "It has become a fashion to say 'Ambedkar, Ambedkar, Ambedkar, Ambedkar, Ambedkar, Ambedkar, Ambedkar, Ambedkar, Ambedkar, Ambedkar'. If they had taken God's name so many times, they would have got a place in heaven," Mr. Shah had said on Tuesday.

The Congress led a protest of the INDIA bloc parties in the morning. Standing between the new Parliament building and



Loud protests: Opposition MPs protest holding posters of Ambedkar, in New Delhi on Wednesday. ANI

the old one, MPs holding aloft posters of Dr. Ambedkar raised slogans of "Jai Bhim" and demanded an apology from Mr. Shah for insulting the architect of the Constitution. The Trinamool Congress was conspicuous by its absence at the Opposition protest. They [BJP] always said they would change the Constitution. They are against the Constitution, against Ambedkar ji, his ideology. Their entire work is to finish Ambedkar ji's contribution," Mr. Gandhi told presspersons after the protests outside Parliament.

The mood at the protest was carried over to both the Houses.

In the Rajya Sabha, immediately after the customary laying down of papers, the Opposition was on its seats raising slogans.

Chairman Jagdeep Dhankhar said he had the honour and privilege to be a Member of Parliament and the Council of Ministers when Dr. Ambedkar was honoured with Bharat Ratna. His entreaties to bring order in the House went unheeded as the Opposition continued raising "Jai Bhim" slogans forcing adjournment till 2 p.m.

When the House reassembled at 2 p.m., Mr. Rijiju rose to defend Mr. Shah, and accused the Congress of misleading the country

by using only a part of Mr. Shah's remarks. At this, Leader of the Opposition Mallikarjun Kharge repeated Mr. Shah's remark, and said it only showed the Minister's disrespect towards the architect of the Constitution. The Trinamool staged a walkout. The party's Rajya Sabha leader, Derek O'Brien, submitted a privilege notice against Mr. Shah.

Leader of the House J.P. Nadda rejected Mr. Kharge's plea, and alleged it was the Congress that had disrespected Dr. Ambedkar during his lifetime, due to which he had resigned from the Union Cabinet. This led to an uproar as Mr. Kharge again rose to counter Mr. Nadda and Mr. Dhankhar to adjourn the House for the day.

The Lok Sabha was adjourned till 2 p.m. within minutes of its convening amid loud protests from Opposition MPs. Speaker Om Birla's efforts to run the Question Hour did not yield results.

When the House reconvened, similar scenes were witnessed, forcing BJP MP P.C. Mohan to adjourn the House for the day.

Parliament stalled over Shah's Ambedkar remarks

शाह के अंबेडकर पर टिप्पणी के

कारण संसद ठप

Both Houses of Parliament failed to function on Wednesday amid protests by the Opposition over remarks made by Union Home Minister Amit Shah on B.R. Ambedkar in the Rajya Sabha a day earlier.

बुधवार को संसद के दोनों सदनो में विपक्ष द्वारा मंगलवार को राज्यसभा में केंद्रीय गृह मंत्री अमित शाह की बी.आर.





अंबेडकर पर की गई टिप्पणियों के खिलाफ विरोध प्रदर्शनों के कारण कामकाज ठप हो गया।

- **Kiren Rijju** said the Opposition was misleading the country by selectively quoting Mr. Shah's comments.
किरन रिजिजू ने कहा कि विपक्ष श्री शाह की टिप्पणियों को चयनात्मक रूप से उद्धृत करके देश को गुमराह कर रहा था।
- **Mr. Shah**, in his 90-minute reply to the debate on "Glorious journey of 75 years of the Constitution of India", said it had become a "fashion" for the party to chant **Dr. Ambedkar's** name.
शाह ने भारत के संविधान के "75 वर्षों की महिमामंडित यात्रा" पर हुई बहस में अपने 90 मिनट के जवाब में कहा कि पार्टी के लिए डॉ. अंबेडकर का नाम लेना एक "फैशन" बन गया है।
- "Ambedkar, Ambedkar, Ambedkar, Ambedkar, Ambedkar, Ambedkar" saying it had become a fashion.
"अंबेडकर, अंबेडकर, अंबेडकर, अंबेडकर, अंबेडकर, अंबेडकर" कहना एक फैशन बन गया है।
- The **Congress** led a protest of the **INDIA bloc** parties in the morning.
कांग्रेस ने सुबह में इंडिया गठबंधन पार्टियों का विरोध प्रदर्शन नेतृत्व किया।
- **MPs** holding placards of **Dr. Ambedkar** raised slogans of "Jai Bhim" and demanded an apology from Mr. Shah for insulting the architect of the Constitution.
डॉ. अंबेडकर के पोस्टर पकड़े सांसदों ने "जय भीम" के नारे लगाए और संविधान के शिल्पकार का अपमान करने के लिए शाह से माफी की मांग की।
- The **Trinamool Congress** was conspicuous by its absence at the Opposition protest.
विपक्ष के विरोध प्रदर्शन में टीएमसी का अनुपस्थित रहना प्रमुख था।
- **Mr. Gandhi** said the BJP always said they would change the Constitution and were against **Ambedkar's** ideology.
गांधी जी ने कहा कि भाजपा हमेशा कहती थी कि वे संविधान को बदलेंगे और अंबेडकर की विचारधारा के खिलाफ हैं।
- In the **Rajya Sabha**, immediately after the customary laying down of papers, the Opposition was on its seats raising slogans.
राज्यसभा में, कागजात पेश करने के बाद विपक्ष अपने सीटों पर खड़ा होकर नारेबाजी करने लगा।
- Chairman **Jagdeep Dhankhar** said he had the honor and privilege to be a Member of Parliament when **Dr. Ambedkar** was honored with **Bharat Ratna**.
राज्यसभा के अध्यक्ष जगदीप धनखड़ ने कहा कि उन्हें सांसद होने का सम्मान प्राप्त था जब डॉ. अंबेडकर को भारत रत्न से सम्मानित किया गया था।
- The **Opposition** continued raising "Jai Bhim" slogans forcing adjournment till 2 p.m.
विपक्ष ने "जय भीम" के नारे लगाए, जिससे सदन को दोपहर 2 बजे तक स्थगित कर दिया गया।
- When the House reassembled at 2 p.m., **Mr. Rijju** rose to defend Mr. Shah and accused the Congress of misleading the country.
जब सदन दोपहर 2 बजे फिर से इकट्ठा हुआ, तो श्री रिजिजू ने श्री शाह का बचाव किया और कांग्रेस पर देश को गुमराह करने का आरोप लगाया।





- **Mr. Kharge** repeated Mr. Shah's remark and said it only showed the Minister's disrespect towards **Dr. Ambedkar**.
श्री खड़गे ने श्री शाह की टिप्पणी दोहराई और कहा कि इससे मंत्री का डॉ. अंबेडकर के प्रति अपमान ही जाहिर होता है।
- The **Trinamool** staged a walkout.
टीएमसी ने वॉकआउट किया।
- **Derek O'Brien** of **TMC** submitted a privilege notice against Mr. Shah.
टीएमसी के डेरिक ओ'ब्रायन ने श्री शाह के खिलाफ विशेषाधिकार नोटिस प्रस्तुत किया।
- Leader of the House **J.P. Nadda** rejected Mr. Kharge's plea, alleging the Congress had disrespected **Dr. Ambedkar** during his lifetime.
संसद के नेता जे.पी. नड्डा ने श्री खड़गे की याचिका को खारिज किया और आरोप लगाया कि कांग्रेस ने डॉ. अंबेडकर का उनके जीवनकाल में अपमान किया।
- This led to an uproar as **Mr. Kharge** again rose to counter **Mr. Nadda** and **Mr. Dhankhar** to adjourn the House for the day.
इससे हंगामा हुआ क्योंकि श्री खड़गे ने फिर से श्री नड्डा और श्री धनखड़ के खिलाफ खड़ा होकर सदन को दिनभर के लिए स्थगित करने की मांग की।
- The **Lok Sabha** was adjourned till **2 p.m.** within minutes of its convening amid loud protests from Opposition MPs.
लोकसभा को विपक्षी सांसदों के जोरदार विरोध के बीच कुछ ही मिनटों में दोपहर 2 बजे तक स्थगित कर दिया गया।
- Speaker **Om Birla's** efforts to run the Question Hour did not yield results.
स्पीकर ओम बिड़ला के प्रश्नकाल को चलाने के प्रयासों से कोई परिणाम नहीं निकला।
- When the House reconvened, similar scenes were witnessed, forcing **BJP MP P.C. Mohan** to adjourn the House for the day.
जब सदन फिर से इकट्ठा हुआ, तो ऐसे ही दृश्य देखने को मिले, जिससे भाजपा सांसद पी.सी. मोहन को सदन को दिन के लिए स्थगित करने पर मजबूर होना पड़ा।



Formulate policy to manage sacred groves, SC tells govt.

Union Environment Ministry asked to develop plan for nationwide survey of groves, which are traditionally safeguarded by local communities, for its ecological value and cultural significance

GS Paper I: A&C
GS Paper III:
Environment

The Supreme Court on Wednesday directed the Centre to create a comprehensive policy for the management of sacred groves across the country.

Sacred groves are patches of trees traditionally protected by local communities for their religious and cultural significance. They also contribute to the conservation of the local biodiversity. These small forests are commonly found in Tamil Nadu, Kerala, Karnataka and Maharashtra. The recommendation by a Special Bench of Justices B.R. Gavai, S.V.N. Bhatti and Sandeep Mehta was based on a petition highlighting the vanishing groves of Rajasthan.

Significant move

The court's suggestion to the Centre to frame a policy is significant as the Centre has usually maintained that the manage-



Save biodiversity: These small forests are commonly found in Tamil Nadu, Kerala, Karnataka and Maharashtra. THULASI KAKKAT

ment of wildlife and its habitat is primarily the responsibility of the States. The Centre had noted that the Wild Life (Protection) Act, 1972, empowered States for declaration of any private or community land, as a community reserve, for protecting fauna, flora and traditional or cultural conservation values and practices.

However, the judgment aligned the preservation of sacred groves with the cultural and traditional rights of entire communities, while asking the Ministry of Environment, Forest

and Climate Change to spearhead the efforts to protect these precious sources of biodiversity.

The Ministry was asked to develop a plan for a nationwide survey of sacred groves. The court said the survey must identify the area and extent of the groves. It said the boundaries of the groves have to be clearly marked but left flexible to accommodate future growth of the forests. It said the Centre should provide instructions against the reduction of the groves.

Justice Mehta reminded

the Centre that the National Forest Policy of 1988, backed by the top court's interventions through the T.N. Godavarman Thirumulpad batch of cases, encouraged communities with customary rights to improve these forest patches on which they depend for their needs.

Village's efforts

The judgment narrated the story of Piplantri village in Rajasthan, where barren land was transformed to lush green groves due to the efforts of the people. "Piplantri village shows how a community-driven initiative came to effectively address social, ecological and environmental challenges in a cohesive manner," Justice Mehta underscored.

"Sacred groves have immense ecological value. Sacred groves should be identified and protected as community reserves to ensure their preservation against unauthorised land use changes," he observed.

Formulate policy to manage sacred groves, SC tells govt.

पवित्र वन क्षेत्रों के प्रबंधन के लिए नीति बनाने का निर्देश,

सुप्रीम कोर्ट ने सरकार को कहा





The Supreme Court directed the Centre to create a comprehensive policy for the management of sacred groves across the country.

सुप्रीम कोर्ट ने केंद्र को देशभर में पवित्र वन क्षेत्रों के प्रबंधन के लिए एक समग्र नीति बनाने का निर्देश दिया।

- Sacred groves are patches of trees traditionally protected by local communities for their **religious and cultural significance**.

पवित्र वन क्षेत्र वे पेड़-पौधों के समूह होते हैं जिन्हें पारंपरिक रूप से स्थानीय समुदायों द्वारा धार्मिक और सांस्कृतिक महत्व के लिए संरक्षित किया जाता है।

- They also contribute to the conservation of local **biodiversity**.

ये स्थानीय जैव विविधता के संरक्षण में भी योगदान करते हैं।

- Sacred groves are commonly found in **Tamil Nadu, Kerala, Karnataka, and Maharashtra**.

पवित्र वन क्षेत्र आमतौर पर तमिलनाडु, केरल, कर्नाटका और महाराष्ट्र में पाए जाते हैं।

- The **petition** highlighted the **vanishing groves of Rajasthan**.

याचिका में राजस्थान के लुप्त होते पवित्र वन क्षेत्रों को उजागर किया गया।

- The **court's suggestion** to the **Centre** to frame a policy is significant, as the Centre has generally maintained that wildlife management is primarily the responsibility of the States.

सुप्रीम कोर्ट का केंद्र को नीति बनाने का सुझाव महत्वपूर्ण है, क्योंकि केंद्र ने सामान्य रूप से यह कहा है कि वन्यजीव प्रबंधन मुख्य रूप से राज्यों की जिम्मेदारी है।

- The **Wild Life (Protection) Act, 1972** empowers states for declaration of any private or community land as a **community reserve**.

वन्यजीव (संरक्षण) अधिनियम, 1972 राज्यों को किसी भी निजी या सामुदायिक भूमि को सामुदायिक आरक्षित क्षेत्र के रूप में घोषित करने का अधिकार देता है।

- The **Ministry of Environment, Forest and Climate Change** was asked to spearhead efforts to protect sacred groves as sources of biodiversity.

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय को पवित्र वन क्षेत्रों को जैव विविधता के स्रोतों के रूप में संरक्षित करने के प्रयासों का नेतृत्व करने का निर्देश दिया गया।

- The Ministry was also asked to develop a plan for a **nationwide survey** of sacred groves.

मंत्रालय से पवित्र वन क्षेत्रों के राष्ट्रव्यापी सर्वेक्षण के लिए योजना तैयार करने को भी कहा गया।

- The survey must identify the area and extent of the groves.

सर्वेक्षण में पवित्र वन क्षेत्रों का क्षेत्र और आकार पहचानना आवश्यक है।

- Boundaries of the groves must be clearly marked but flexible to accommodate future growth.

पवित्र वन क्षेत्रों की सीमाओं को स्पष्ट रूप से चिह्नित किया जाना चाहिए, लेकिन भविष्य में वन के विकास को समायोजित करने के लिए लचीला होना चाहिए।

- The **Centre** should provide instructions against the reduction of the groves.

केंद्र को पवित्र वन क्षेत्रों के घटने के खिलाफ निर्देश देने चाहिए।





- **Justice Mehta** reminded the **Centre** of the **National Forest Policy of 1988**, which encourages communities to improve forest patches they depend on.
न्यायमूर्ति मेहता ने केंद्र को 1988 के राष्ट्रीय वन नीति की याद दिलाई, जो समुदायों को उन वन क्षेत्रों को सुधारने के लिए प्रेरित करती है जिन पर वे निर्भर करते हैं।
- The judgment narrated the story of **Piplantri village** in **Rajasthan**, where barren land was transformed into lush green groves due to the efforts of the people.
निर्णय में पिपलांत्री गांव की कहानी सुनाई गई, जहां बंजर भूमि को लोगों के प्रयासों से हरे-भरे वन क्षेत्रों में बदला गया।
- **Justice Mehta** highlighted that **Piplantri village** is an example of how community-driven initiatives address social, ecological, and environmental challenges.
न्यायमूर्ति मेहता ने यह बताया कि पिपलांत्री गांव यह दर्शाता है कि कैसे समुदाय-प्रेरित पहल सामाजिक, पारिस्थितिकीय और पर्यावरणीय चुनौतियों का समाधान करती हैं।
- Sacred groves should be identified and protected as **community reserves** to ensure their preservation against unauthorized land use changes.
पवित्र वन क्षेत्रों को सामुदायिक आरक्षित क्षेत्र के रूप में पहचानकर संरक्षित किया जाना चाहिए ताकि उनके अनधिकृत भूमि उपयोग परिवर्तनों से उनकी रक्षा की जा सके।

Bangladesh HC cancels death for ULFA chief

GS Paper III: Internal Security

NEW DELHI

A High Court in Bangladesh on Wednesday granted relief to the United Liberation Front of Asom's self-exiled chief, Paresh Baruah, commuting his death penalty to a life sentence.

The verdict was given by Justices Mustafa Zaman and Nasreen Akhtar of the High Court division of the Bangladesh Supreme Court, in what is known as the "ten trucks arms haul" case of 2004. The ULFA chief was sentenced to death in 2014, at a time when Bangladesh was cracking down on extremism and militancy across the country.

On April 1, 2004, 10 trucks filled with arms and ammunition were apprehended at the State-run jetty of Chittagong Urea Fertilizer Ltd., even as the weapons were being off-loaded from two trawlers. It was alleged that the weapons were meant for insurgent groups active in India's northeastern States.

Bangladesh HC cancels death for ULFA chief बांग्लादेश उच्च न्यायालय ने ULFA प्रमुख की फांसी की सजा को रद्द किया

- A High Court in Bangladesh granted relief to the **United Liberation Front of Asom (ULFA)** self-exiled chief, **Paresh Baruah**, commuting his **death penalty** to a **life sentence**.

बांग्लादेश के उच्च न्यायालय ने यूनाइटेड लिबरेशन फ्रंट ऑफ असम (ULFA) के स्वयं निर्वासित प्रमुख परेश बरुआ को राहत देते हुए उनकी फांसी की सजा को आजीवन कारावास में बदल दिया।

- The verdict was given by **Justices Mustafa Zaman** and **Nasreen Akhtar** of the **High Court division** of the **Bangladesh Supreme Court** in the "**ten trucks arms haul**" case of 2004.

यह निर्णय बांग्लादेश सुप्रीम कोर्ट के उच्च न्यायालय विभाग के न्यायमूर्ति मुस्तफा जमां और नसीरीन अख्तर ने 2004 के "दस ट्रकों में हथियारों की बरामदी" मामले में दिया।

- The **ULFA chief** was sentenced to death in **2014**, when **Bangladesh** was cracking down on extremism and militancy.

ULFA प्रमुख को 2014 में फांसी की सजा दी गई थी, जब बांग्लादेश देशभर में उग्रवाद और उन्माद के खिलाफ सख्त कार्रवाई कर रहा था।

- On **April 1, 2004**, **10 trucks** filled with arms and ammunition were apprehended at the State-run jetty of **Chittagong Urea Fertilizer Ltd.**, while the weapons were being off-loaded from two trawlers.





1 अप्रैल 2004 को, 10 ट्रक जो हथियारों और गोला-बारूद से भरे हुए थे, को राज्य-प्रबंधित चित्तगांव यूरिया उर्वरक लिमिटेड के घाट पर पकड़ा गया था, जब ये हथियार दो ट्रालरों से उतारे जा रहे थे।

- It was alleged that the weapons were meant for insurgent groups active in India's northeastern States.

यह आरोप लगाया गया था कि ये हथियार भारत के उत्तर-पूर्वी राज्यों में सक्रिय उग्रवादी समूहों के लिए थे।

Gagan Gill, Easterine Kire to get Sahitya Akademi awards

PCS

Press Trust of India

NEW DELHI

Hindi poet Gagan Gill and English writer Easterine Kire are among the 21 recipients of the annual Sahitya Akademi Awards, the organisation announced on Wednesday.

Recommended by jury members in 21 languages, the awards recognise works in different categories.

Ms. Gill was selected for her book on poetry *Main Jab Tak Aai Bahar*, Ms. Kire made it to the coveted list for her novel *Spirit Nights*. The winning list includes eight poetry books, three novels, two short stories, three essays, three works of literary criticism, one play and one research.

Sohan Kaul will receive the award for her Kashmiri novel *Psychiatric Ward*, while Paul Kaur has been selected for her Punjabi book on poetry *Sun Gunvanta Sun Budhivanta: Itihaasnama Punjab*.

The recipients of award in poetry include K. Jaya-

Poet Gagan Gill was selected for her book on poetry, Easterine Kire for her novel *Spirit Nights*

kumar (Malayalam), Haobam Satyabati Devi (Manipur), Dileep Jhaveri (Gujarati), Sameer Tanti (Assamese), Mukut Maniraj (Rajasthani) and Dipak Kumar Sharma (Sanskrit).

Aron Raja also made it to the winning list in the novels genre for his fiction book *Swrni Thakhai* in Bodo.

Yuva Baral's *Chhichimira* (Nepali) and Hundraj Balwani's *Purzo* (Sindhi) were the picks in the short stories section.

Mukesh Thali (Konkani), Mahendra Malangia (Maithili) and Baishnab Charan Samai (Odia) will receive the award for their essays, while A.R. Venkatachalapathy (Tamil) was recognised for his research, and Maheshwar Sorn for his play *Seched Sawnta Ren Andha Manmi* (Santali).

Gagan Gill, Easterine Kire to get Sahitya Akademi awards

गगन गिल, ईस्टेराइन काइरे को साहित्य अकादमी पुरस्कार मिलेगा

Hindi poet Gagan Gill and English writer Easterine Kire are among the 21 recipients of the annual Sahitya Akademi Awards, the organisation announced on Wednesday.

हिंदी कवि गगन गिल और अंग्रेजी लेखिका

ईस्टेराइन काइरे को 21 प्राप्तकर्ताओं में शामिल किया गया है, जिन्हें साहित्य अकादमी पुरस्कार प्राप्त होंगे, इस बात की घोषणा बुधवार को की गई।

- The awards were recommended by jury members in 21 languages, recognising works in different categories.

पुरस्कारों की सिफारिश 21 भाषाओं में जूरी सदस्यों ने की, जो विभिन्न श्रेणियों में कार्यों को पहचानते हैं।

- Ms. Gill was selected for her book on poetry *Main Jab Tak Aai Bahar*, Ms. Kire made it to the coveted list for her novel *Spirit Nights*.

Ms. Gill को उनकी कविता पुस्तक *Main Jab Tak Aai Bahar* के लिए चयनित किया गया, और Ms. Kire को उनके उपन्यास *Spirit Nights* के लिए इस प्रतिष्ठित सूची में स्थान मिला।





- The winning list includes **eight poetry books, three novels, two short stories, three essays, three works of literary criticism, one play, and one research.**
विजेता सूची में आठ कविता पुस्तकें, तीन उपन्यास, दो लघु कथाएँ, तीन निबंध, तीन साहित्यिक आलोचना के कार्य, एक नाटक, और एक शोध शामिल हैं।
- **Sohan Kaul** will receive the award for her **Kashmiri novel Psychiatric Ward**, while **Paul Kaur** has been selected for her **Punjabi book on poetry Sun Gunvanta Sun Budhivanta: Itihaasnama Punjab.**
Sohan Kaul को उनके **कश्मीरी उपन्यास Psychiatric Ward** के लिए पुरस्कार मिलेगा, जबकि **Paul Kaur** को उनकी **पंजाबी कविता पुस्तक Sun Gunvanta Sun Budhivanta: Itihaasnama Punjab** के लिए चयनित किया गया है।
- The recipients of award in poetry include **K. Jayakumar** (Malayalam), **Haobam Satyabati Devi** (Manipuri), **Dileep Jhaveri** (Gujarati), **Sameer Tanti** (Assamese), **Mukut Maniraj** (Rajasthani), and **Dipak Kumar Sharma** (Sanskrit).
कविता में पुरस्कार प्राप्तकर्ताओं में **K. Jayakumar** (मलयालम), **Haobam Satyabati Devi** (मणिपुरी), **Dileep Jhaveri** (गुजराती), **Sameer Tanti** (असमिया), **Mukut Maniraj** (राजस्थानी), और **Dipak Kumar Sharma** (संस्कृत) शामिल हैं।
- **Aron Raja** also made it to the winning list in the **novels genre** for his fiction book **Swrni Thakhai** in **Bodo.**
Aron Raja ने भी **उपन्यास श्रेणी** में अपने **कहानी पुस्तक Swrni Thakhai** के लिए विजेता सूची में स्थान पाया है, जो **बोड़ो** में है।
- **Yuva Baral's Chhichimira** (Nepali) and **Hundraj Balwani's Purzo** (Sindhi) were the picks in the **short stories** section.
Yuva Baral की **Chhichimira** (नेपाली) और **Hundraj Balwani** की **Purzo** (सिंधी) लघु कथाएँ श्रेणी में चयनित की गईं।
- **Mukesh Thali** (Konkani), **Mahendra Malangia** (Maithili), and **Baishnab Charan Samai** (Odia) will receive the award for their **essays**, while **A.R. Venkatachalapathy** (Tamil) was recognised for his **research**, and **Maheshwar Sorn** for his **play Seched Sawnta Ren Andha Manmi** (Santali).
Mukesh Thali (कोंकणी), **Mahendra Malangia** (मैथिली), और **Baishnab Charan Samai** (ओड़िया) को उनके **निबंधों** के लिए पुरस्कार मिलेगा, जबकि **A.R. Venkatachalapathy** (तमिल) को उनके **शोध** के लिए पहचाना गया, और **Maheshwar Sorn** को उनके नाटक **Seched Sawnta Ren Andha Manmi** (संताली) के लिए पुरस्कार मिलेगा।





SC mulls tree census with Forest Survey of India's help

GS Paper III:
Environment

NEW DELHI

The Supreme Court on Friday proposed a tree census to be conducted by the Tree Authority in the national capital by employing the Forest Survey of India (FSI).

A Bench of Justices A.S. Oka and Manmohan also highlighted the need for a supervisory authority over Tree Officers under the Delhi Preservation of Trees Act, 1994.

Justice Oka said Tree Officers should not be allowed to give indiscriminate permissions to fell trees.

"There should be an expert committee to vet the felling orders of Tree Officers and to see if the trees can be saved. The committee could also supervise the tree census," Justice Oka observed.

Additional Solicitor-General Aishwarya Bhati said both the FSI and the Forest Research Institute were equipped to conduct the tree census.

SC mulls tree census with Forest Survey of India's help

SC पेड़ गणना पर विचार करता है, वन सर्वेक्षण भारत की मदद से

The Supreme Court on Friday proposed a tree census to be conducted by the Tree Authority in the national capital by employing the Forest Survey of India (FSI).

सुप्रीम कोर्ट ने शुक्रवार को राष्ट्रीय राजधानी में वृक्ष प्राधिकरण द्वारा वन सर्वेक्षण भारत (FSI) की मदद से पेड़ गणना कराने का प्रस्ताव रखा।

- A Bench of Justices A.S. Oka and Manmohan also highlighted the need for a supervisory authority over Tree Officers under the Delhi Preservation of Trees Act, 1994.

न्यायमूर्ति A.S. Oka और न्यायमूर्ति मंहमोहन की बेंच ने दिल्ली वृक्ष संरक्षण अधिनियम, 1994 के तहत वृक्ष अधिकारियों के लिए एक निगरानी प्राधिकरण की आवश्यकता पर भी बल दिया।

- Justice Oka said Tree Officers should not be allowed to give indiscriminate permissions to fell trees.

न्यायमूर्ति ओका ने कहा कि वृक्ष अधिकारियों को पेड़ काटने की बेतरतीब अनुमति देने की अनुमति नहीं दी जानी चाहिए।

- "There should be an expert committee to vet the felling orders of Tree Officers and to see if the trees can be saved. The committee could also supervise the tree census," Justice Oka observed.

"एक विशेषज्ञ समिति होनी चाहिए जो वृक्ष अधिकारियों के काटने के आदेश की जांच करे और यह देखे कि क्या पेड़ों को बचाया जा सकता है। समिति वृक्ष गणना की निगरानी भी कर सकती है," न्यायमूर्ति ओका ने टिप्पणी की।

- Additional Solicitor-General Aishwarya Bhati said both the FSI and the Forest Research Institute were equipped to conduct the tree census.

अतिरिक्त महाधिवक्ता ऐश्वर्या भाटी ने कहा कि FSI और वन अनुसंधान संस्थान दोनों वृक्ष गणना कराने के लिए सक्षम हैं।



Net direct tax collections rise 16.5%

GS Paper III: Taxation

Corporate taxes, after factoring in refunds, grew just 8.6% to ₹7.43 lakh crore while non-corporate taxes rose at a much faster pace of 22.5% to ₹7.97 lakh crore; Securities Transaction Tax receipts jumped a sharp 85.5% to over ₹40,100 crore

Vikas Dhoot
NEW DELHI

With a little over three months left in 2024-25, India's net direct tax collections were up 16.5%, crossing ₹15.82 lakh crore by December 17, with non-corporate taxes leading the growth.

Net corporate tax receipts were up just 8.6% to close to ₹7.43 lakh crore, while net collections from non-corporate taxes rose at almost thrice the pace at 22.5% to ₹7.97 lakh crore, surpassing the corporate receipts. At the same juncture of last year, corporate taxes accounted for more



Back in hand: Refunds rose 42.5% by December 17 to nearly ₹3.39 lakh crore, with corporate tax refunds surging 70.3%. GETTYIMAGES

contributions to the exchequer than non-corporate entities, which include individuals, Hindu Undivided Families or HUFs, and associations of persons, local authorities, and artificial juridical persons.

Data shared by the Central Board of Direct Taxes on Wednesday showed that gross tax receipts had grown 20.3% so far this year to cross ₹19.21 lakh crore, with corporate taxes rising 16.9% and non-cor-

porate receipts up 22%.

With stock market volumes holding up despite some tumult in valuations in recent months, receipts from the Securities Transaction Tax (STT) were up a sharp 85.5% to over ₹40,100 crore.

Refunds were up 42.5% by December 17 to nearly ₹3.39 lakh crore, with corporate tax refunds surging 70.3% and non-corporate taxpayers seeing a relatively lower 19.8% uptick in refunds. Advance tax collections had risen 20.9% to over ₹7.56 lakh crore from ₹6.25 lakh crore a year ago, but a similar pattern emerged on this front with corporate taxes growing

16.7%, less than half the 35% increase in non-corporate receipts. In 2023-24, net direct tax revenues had risen 17.7% to ₹19.58 lakh crore, with Personal Income Tax (PIT) share rising to 53.3% from 50.06% in the previous year. Recently, the government stopped sharing data with the PIT nomenclature, calling the category non-corporate taxes instead.

Other taxes, that include Equalization Levy, Fringe Benefit Tax, Wealth Tax, Banking Cash Transaction Tax, Hotel Receipt Tax, Interest Tax, Expenditure Tax, Estate Duty and Gift Tax, rose a mere 5.9% from a year ago.

Net direct tax collections rise 16.5%

नेट डायरेक्ट टैक्स कलेक्शंस में 16.5% की वृद्धि

With a little over three months left in 2024-25, India's net direct tax collections were up 16.5%, crossing ₹15.82 lakh crore by December 17, with non-corporate taxes leading the growth.

2024-25 के अंत में तीन महीने से थोड़ा अधिक समय शेष रहते हुए, भारत की नेट डायरेक्ट टैक्स कलेक्शंस में 16.5% की वृद्धि हुई, 17 दिसंबर तक ₹15.82 लाख करोड़ को पार किया, जिसमें गैर-कारपोरेट टैक्स ने वृद्धि का नेतृत्व किया।

- Net corporate tax receipts were up just 8.6% to close to ₹7.43 lakh crore, while net collections from non-corporate taxes rose at almost thrice the pace at 22.5% to ₹7.97 lakh crore, surpassing the corporate receipts.

नेट कॉर्पोरेट टैक्स रसीदें सिर्फ 8.6% बढ़कर ₹7.43 लाख करोड़ के करीब पहुंचीं, जबकि गैर-कारपोरेट टैक्स से नेट कलेक्शंस 22.5% की वृद्धि के साथ लगभग तीन गुना गति से बढ़कर ₹7.97 लाख करोड़ हो गए, जो कॉर्पोरेट रसीदों को पार कर गए।





- At the same juncture of last year, **corporate taxes** accounted for more contributions to the **exchequer** than non-corporate entities, which include **individuals, Hindu Undivided Families** or **HUFs**, and **associations of persons, local authorities**, and artificial juridical persons.
पिछले साल के इसी समय पर, **कॉर्पोरेट टैक्स** ने गैर-कारपोरेट संस्थाओं से अधिक योगदान किया था, जिसमें **व्यक्तिगत, हिंदू अविभाजित परिवार (HUF)**, और **व्यक्तियों के संघ, स्थानीय प्राधिकरण**, और कृत्रिम न्यायिक व्यक्तित्व शामिल हैं।
- Data shared by the **Central Board of Direct Taxes** on **Wednesday** showed that **gross tax receipts** had grown **20.3%** so far this year to cross **₹19.21 lakh crore**, with **corporate taxes** rising **16.9%** and **non-corporate receipts** up **22%**.
केंद्रीय प्रत्यक्ष कर बोर्ड द्वारा **बुधवार** को साझा किए गए आंकड़ों से पता चला कि **सकल कर प्राप्तियां** इस साल अब तक **20.3%** बढ़कर **₹19.21 लाख करोड़** को पार कर गई हैं, जिसमें **कॉर्पोरेट टैक्स 16.9%** और **गैर-कारपोरेट प्राप्तियां 22%** बढ़ी हैं।
- With stock market volumes holding up despite some tumult in valuations in recent months, receipts from the **Securities Transaction Tax (STT)** were up a sharp **85.5%** to over **₹40,100 crore**.
हाल ही में **वैल्यूएशन्स** में कुछ उथल-पुथल के बावजूद **स्टॉक मार्केट वॉल्यूम्स** बने रहने के कारण **सिक्योरिटीज ट्रांजैक्शन टैक्स (STT)** से **प्राप्तियां 85.5%** की तेज वृद्धि के साथ **₹40,100 करोड़** से ऊपर हो गईं।
- **Refunds** were up **42.5%** by **December 17** to nearly **₹3.39 lakh crore**, with **corporate tax refunds** surging **70.3%** and **non-corporate taxpayers** seeing a relatively lower **19.8%** uptick in refunds.
रिफंड्स में **17 दिसंबर** तक **42.5%** की वृद्धि हुई और ये **₹3.39 लाख करोड़** के करीब पहुंच गए, जिसमें **कॉर्पोरेट टैक्स रिफंड्स** में **70.3%** की बढ़ोतरी हुई और **गैर-कारपोरेट करदाताओं** को रिफंड्स में **19.8%** का अपेक्षाकृत कम uptick देखने को मिला।
- **Advance tax collections** had risen **20.9%** to over **₹7.56 lakh crore** from **₹6.25 lakh crore** a year ago, but a similar pattern emerged on this front with **corporate taxes** growing **16.7%**, less than half the **35%** increase in **non-corporate receipts**.
एडवांस टैक्स कलेक्शंस में पिछले साल **₹6.25 लाख करोड़** से बढ़कर **₹7.56 लाख करोड़** तक **20.9%** की वृद्धि हुई, लेकिन इस मोर्चे पर भी एक समान पैटर्न सामने आया, जिसमें **कॉर्पोरेट टैक्स** में **16.7%** की वृद्धि हुई, जो **गैर-कारपोरेट प्राप्तियों** में **35%** की वृद्धि का आधा था।
- In **2023-24**, **net direct tax revenues** had risen **17.7%** to **₹19.58 lakh crore**, with **Personal Income Tax (PIT)** share rising to **53.3%** from **50.06%** in the previous year.
2023-24 में, **नेट डायरेक्ट टैक्स राजस्व** में **17.7%** की वृद्धि हुई और यह **₹19.58 लाख करोड़** तक पहुंच गया, जिसमें **व्यक्तिगत आयकर (PIT)** का हिस्सा पिछले साल के **50.06%** से बढ़कर **53.3%** हो गया।
- Recently, the government stopped sharing data with the **PIT nomenclature**, calling the category **non-corporate taxes** instead.
हाल ही में, सरकार ने **PIT नामकरण** के साथ डेटा साझा करना बंद कर दिया, और इस श्रेणी को **गैर-कारपोरेट टैक्स** कहा गया।
- Other taxes, that include **Equalization Levy, Fringe Benefit Tax, Wealth Tax, Banking Cash Transaction Tax, Hotel Receipt Tax, Interest Tax, Expenditure Tax, Estate**



Duty, and Gift Tax, rose a mere 5.9% from a year ago.

अन्य करों में, जो इक्वलाइजेशन लेवी, फ्रिज बेनिफिट टैक्स, वेल्थ टैक्स, बैंकिंग कैश ट्रांजैक्शन टैक्स, होटल रसीद टैक्स, इंटरेस्ट टैक्स, व्यय टैक्स, एस्टेट ड्यूटी, और गिफ्ट टैक्स शामिल हैं, पिछले साल के मुकाबले केवल 5.9% की वृद्धि हुई।

Indians opt for lighter, lower-carat jewellery as gold prices hit the roof

GS Paper III: Basic Science

MUMBAI

Soaring gold prices have led many Indian families to opt for lightweight and lower-carat jewellery to stay within their budgets, industry officials said.

“I wanted to gift my daughter 80 grams of gold, but I was forced to scale it down to 50 grams because of price increase in the past two years,” said Mumbai-based Shubhangi More, choosing a necklace with a traditional design for her daughter’s wedding.

Gold prices have surged



22% so far this year, after rising 15% in 2023.

Most Indian buyers prefer traditional jewellery, but now they want it crafted in lightweight designs to fit their budgets, said Bachraj Bamalwa, partner at jewellery retailer Nemi-

chand Bamalwa & Sons.

“Recognising this preference, we are stocking more lightweight jewellery sets while scaling down our inventory of heavier designs,” Mr. Bamalwa said. Advances in manufacturing technology have enabled jewellery makers to craft traditional designs in lighter weights, said Sachin Jain, CEO of the World Gold Council’s Indian operations.

Buyers are also switching to lower carat jewellery to reduce costs, jewellers said. Guddi Devi, a teacher from Jamalpur in the

northern state of Bihar, bought 18-carat jewellery for her daughter’s wedding instead of 22-carat.

Indians traditionally prefer jewellery made in 22-carat gold, which contains 91.7% pure gold, while 18-carat gold contains 75% pure gold and 25% other metals. The price of 18-carat gold is nearly a fifth lower than that of 22-carat gold. “Lower prices and greater durability are making 18-carat jewellery increasingly popular,” said Surendra Mehta, secretary, India Bullion and Jewellers Association.

Indians opt for lighter, lower-carat jewellery as gold prices hit the roof

सोने की कीमतों में बेतहाशा बढ़ोतरी के कारण भारतीय हल्का और कम कैरेट वाला आभूषण पसंद कर रहे हैं

- Soaring gold prices have led many Indian families to opt for lightweight and lower-carat jewellery to stay within their budgets, industry officials said.

सोने की कीमतों में बेतहाशा बढ़ोतरी के कारण कई भारतीय परिवारों को अपने बजट में रहने के लिए हल्के और कम कैरेट वाले आभूषण चुनने के लिए मजबूर होना पड़ा, उद्योग अधिकारियों ने कहा।





- “I wanted to gift my daughter 80 grams of gold, but I was forced to scale it down to 50 grams because of price increase in the past two years,” said **Mumbai-based Shubhangi More**, choosing a necklace with a traditional design for her daughter’s wedding.
“मैं अपनी बेटी को 80 ग्राम सोना देना चाहती थी, लेकिन पिछले दो वर्षों में कीमतों में वृद्धि के कारण मुझे इसे 50 ग्राम तक कम करना पड़ा,” मुंबई स्थित शुभांगी मोरे ने कहा, जिन्होंने अपनी बेटी की शादी के लिए पारंपरिक डिजाइन का हार चुना।
- **Gold prices** have surged **22%** so far this year, after rising **15%** in **2023**.
सोने की कीमतों में इस साल अब तक 22% की वृद्धि हुई है, जबकि 2023 में यह 15% बढ़ी थी।
- Most Indian buyers prefer **traditional jewellery**, but now they want it crafted in **lightweight designs** to fit their budgets, said **Bachhraj Bamelwa**, partner at jewellery retailer **Nemichand Bamelwa & Sons**.
अधिकांश भारतीय खरीदार पारंपरिक आभूषण पसंद करते हैं, लेकिन अब वे इसे अपने बजट के अनुरूप हल्के डिजाइन में बनवाना चाहते हैं, यह बात आभूषण खुदरा व्यापारी नेमिचंद बामलवा एंड सन्स के भागीदार बच्छराज बामलवा ने कही।
- “Recognising this preference, we are stocking more **lightweight jewellery sets** while scaling down our inventory of heavier designs,” Mr. Bamelwa said.
“इस प्राथमिकता को पहचानते हुए, हम हल्के आभूषण सेट अधिक रख रहे हैं और भारी डिजाइनों का स्टॉक कम कर रहे हैं,” श्री बामलवा ने कहा।
- Advances in **manufacturing technology** have enabled jewellery makers to craft traditional designs in lighter weights, said **Sachin Jain**, CEO of the **World Gold Council’s Indian operations**.
निर्माण प्रौद्योगिकी में उन्नति ने आभूषण निर्माताओं को पारंपरिक डिजाइनों को हल्के वजन में बनाने की क्षमता प्रदान की है, यह बात वर्ल्ड गोल्ड काउंसिल के भारतीय संचालन के सीईओ सचिन जैन ने कही।
- Buyers are also switching to **lower carat jewellery** to reduce costs, jewellers said.
खरीदार लागत को कम करने के लिए कम कैरेट के आभूषण भी खरीद रहे हैं, ज्वेलर्स ने कहा।
- **Guddi Devi**, a teacher from **Jamalpur** in the northern state of **Bihar**, bought **18-carat jewellery** for her daughter’s wedding instead of **22-carat**.
बिहार राज्य के जामलपुर की एक शिक्षिका गुड्डी देवी ने अपनी बेटी की शादी के लिए 22 कैरेट के बजाय 18 कैरेट का आभूषण खरीदा।
- Indians traditionally prefer jewellery made in **22-carat gold**, which contains **91.7% pure gold**, while **18-carat gold** contains **75% pure gold** and **25% other metals**. The price of **18-carat gold** is nearly a fifth lower than that of **22-carat gold**.
भारतीय पारंपरिक रूप से 22 कैरेट सोने से बने आभूषण पसंद करते हैं, जिसमें 91.7% शुद्ध सोना होता है, जबकि 18 कैरेट सोने में 75% शुद्ध सोना और 25% अन्य धातुएं होती हैं। 18 कैरेट सोने की कीमत 22 कैरेट सोने की तुलना में लगभग एक-पांचवीं कम होती है।
- “Lower prices and greater durability are making **18-carat jewellery** increasingly popular,” said **Surendra Mehta**, secretary, **India Bullion and Jewellers Association**.
“कम कीमत और अधिक टिकाऊपन के कारण 18 कैरेट के आभूषण越来越 लोकप्रिय हो रहे हैं,” भारत बुलियन और ज्वेलर्स एसोसिएशन के सचिव सुरेंद्र मेहता ने कहा।



How scientists are exploring what extraterrestrial life could look like

Advanced forms of life on alien planets could be so strange that they are unrecognisable. As astrobiologists try to detect life off earth, they will need to be creative. One strategy is to measure mineral signatures on the rocky surfaces of exoplanets, since mineral diversity tracks biological evolution

GS Paper III: S&T

Chris Impey

We have only one example of biology forming in the universe: life on earth. But what if life can form in other ways? How do you look for alien life when you don't know what alien life might look like?

These questions are preoccupying astrobiologists, who are scientists who look for life beyond earth. Astrobiologists have attempted to come up with universal rules that govern the emergence of complex physical and biological systems both on earth and beyond.

I'm an astronomer who has written extensively about astrobiology. Through my research, I've learned that the most abundant form of extraterrestrial life is likely to be microbial, since single cells can form more readily than large organisms. But just in case there's advanced alien life out there, I'm on the international advisory council for the group designing messages to send to those civilisations.

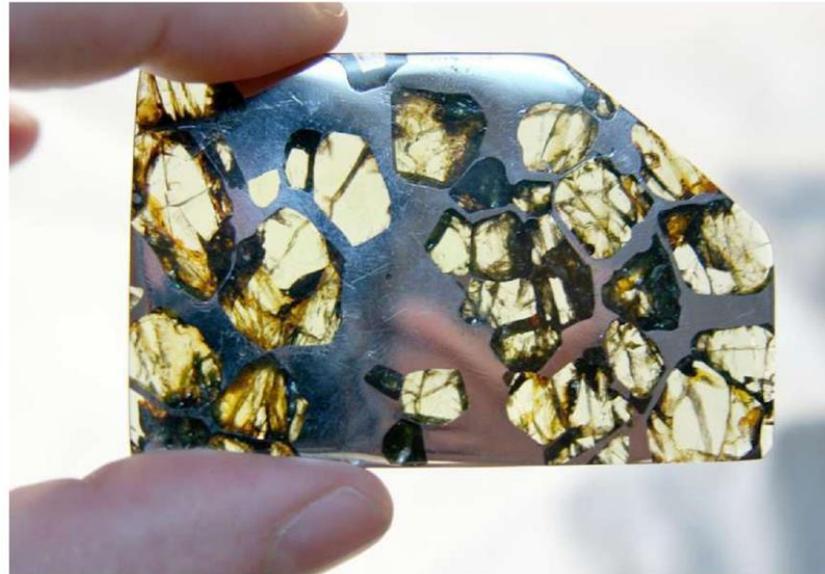
Detecting life beyond earth

Since the first discovery of an exoplanet in 1995, over 5,000 exoplanets, or planets orbiting other stars, have been found. Many of these exoplanets are small and rocky, like earth, and in the habitable zones of their stars. The habitable zone is the range of distances between the surface of a planet and the star it orbits that would allow the planet to have liquid water, and thus support life as we on earth know it.

The sample of exoplanets detected so far projects 300 million potential biological experiments in our galaxy – or 300 million places, including exoplanets and other bodies such as moons, with suitable conditions for biology to arise. The uncertainty for researchers starts with the definition of life. It feels like defining life should be easy, since we know life when we see it, whether it's a flying bird or a microbe moving in a drop of water. But scientists don't agree on a definition, and some think a comprehensive definition might not be possible.

NASA defines life as a "self-sustaining chemical reaction capable of Darwinian evolution." That means organisms with a complex chemical system that evolve by adapting to their environment. Darwinian evolution says that the survival of an organism depends on its fitness in its environment. The evolution of life on earth has progressed over billions of years from single-celled organisms to large animals and other species, including humans. Evolution is the process of change in systems. It can describe how a group of something becomes more complex – or even just different – over time.

Exoplanets are remote and hundreds of millions of times fainter than their parent stars, so studying them is challenging. Astronomers can inspect the atmospheres and surfaces of earth-like exoplanets using a method called spectroscopy to look for chemical signatures of life. Spectroscopy might detect signatures of oxygen in a planet's atmosphere, which microbes called blue-green algae created by photosynthesis on earth several billion years ago, or chlorophyll signatures, which indicate plant life. NASA's



A slice of the Esquel meteorite. This type of meteorite is from the core-mantle boundary of an ancient planetoid that was smashed apart billions of years ago. DOUG BOWMAN

definition of life leads to some important but unanswered questions. Is Darwinian evolution universal? What chemical reactions can lead to biology off earth?

Evolution and complexity

All life on earth, from a fungal spore to a blue whale, evolved from a microbial last common ancestor about 4 billion years ago. The same chemical processes are seen in all living organisms on earth, and those processes might be universal. They also may be radically different elsewhere. In October 2024, a diverse group of scientists gathered to think outside the box on evolution. They wanted to step back and explore what sort of processes created order in the universe – biological or not – to figure out how to study the emergence of life totally unlike life on earth. Two researchers present argued that complex systems of chemicals or minerals, when in environments that allow some configurations to persist better than others, evolve to store larger amounts of information. As time goes by, the system will grow more diverse and complex, gaining the functions needed for survival through a kind of natural selection.

They speculated that there might be a law to describe the evolution of a wide variety of physical systems. Biological evolution through natural selection would be just one example of this broader law. In biology, information refers to the instructions stored in the sequence of nucleotides on a DNA molecule, which collectively make up an organism's genome and dictate what the organism looks like and how it functions. If you define complexity in terms of information theory, natural selection will cause a genome to grow more complex as it stores more information about its environment.

Complexity might be useful in

All life on earth, from a fungal spore to a whale, evolved from a microbial last common ancestor about 4 billion years ago. The same chemical processes are seen in all living organisms on earth, and those processes might be universal

measuring the boundary between life and nonlife. However, it's wrong to conclude that animals are more complex than microbes. Biological information increases with genome size, but evolutionary information density drops. Evolutionary information density is the fraction of functional genes within the genome, or the fraction of the total genetic material that expresses fitness for the environment. Organisms that people think of as primitive, such as bacteria, have genomes with high information density and so appear better designed than the genomes of plants or animals. A universal theory of life is still elusive. Such a theory would include the concepts of complexity and information storage, but it would not be tied to DNA or the particular kinds of cells we find in terrestrial biology.

Implications for search for life

Researchers have explored alternatives to terrestrial biochemistry. All known living organisms, from bacteria to humans, contain water, and it is a solvent that is essential for life on earth. A solvent is a liquid medium that facilitates chemical reactions from which life could emerge. But life could potentially emerge from other solvents, too. Astrobiologists William Bains and Sara Seager have explored thousands of molecules that might be associated with life. Plausible solvents include sulfuric acid, ammonia,

liquid carbon dioxide, and even liquid sulphur. Alien life might not be based on carbon, which forms the backbone of all life's essential molecules – at least here on Earth. It might not even need a planet to survive.

Advanced forms of life on alien planets could be so strange that they're unrecognisable. As astrobiologists try to detect life off earth, they'll need to be creative. One strategy is to measure mineral signatures on the rocky surfaces of exoplanets, since mineral diversity tracks terrestrial biological evolution. As life evolved on earth, it used and created minerals for exoskeletons and habitats. The hundred minerals present when life first formed have grown to about 5,000 today. For example, zircons are simple silicate crystals that date back to the time before life started. A zircon found in Australia is the oldest known piece of earth's crust. But other minerals, such as apatite, a complex calcium phosphate mineral, are created by biology. Apatite is a primary ingredient in bones, teeth, and fish scales.

Another strategy to finding life unlike that on earth is to detect evidence of a civilisation, such as artificial lights or the industrial pollutant nitrogen dioxide in the atmosphere. These are examples of traces of intelligent life called technosignatures. It's unclear how and when a first detection of life beyond earth will happen. It might be within the solar system, or by sniffing exoplanet atmospheres, or by detecting artificial radio signals from a distant civilisation. The search is a twisting road, not a straightforward path. And that's for life as we know it – for life as we don't know it, all bets are off.

(Chris Impey is University Distinguished Professor of Astronomy, University of Arizona. This article is republished from The Conversation.)





Exploring Extraterrestrial Life परग्रही जीवन का अन्वेषण

Advanced forms of life on alien planets could be unrecognizable.
परग्रही ग्रहों पर जीवन के उन्नत रूप पहचान में न आने योग्य हो सकते हैं।

- Strategy: Measure **mineral signatures** on rocky exoplanet surfaces.
रणनीति: चट्टानी एक्सोप्लैनेट सतहों पर **खनिज संकेतकों** को मापना।
- **Astrobiologists** define universal rules for life beyond Earth.
एस्ट्रोबायोलॉजिस्ट पृथ्वी के बाहर जीवन के लिए सार्वभौमिक नियमों की परिभाषा देते हैं।
- The most common form of extraterrestrial life: **microbial**.
परग्रही जीवन का सबसे सामान्य रूप: **सूक्ष्मजीवात्मक**।
- Since the **first exoplanet discovery in 1995**, over **5,000 exoplanets** have been found.
1995 में पहली एक्सोप्लैनेट की खोज के बाद, 5,000 से अधिक एक्सोप्लैनेट्स पाए गए हैं।
- **300 million** potential biological experiments across exoplanets and moons.
300 मिलियन संभावित जैविक प्रयोग, एक्सोप्लैनेट्स और चंद्रमाओं में।
- **NASA** defines life as "self-sustaining chemical reaction capable of Darwinian evolution."
नासा जीवन को "स्व-संवर्धित रासायनिक प्रतिक्रिया capable of डार्विनियन विकास" के रूप में परिभाषित करता है।
- **Spectroscopy** detects chemical signatures of life on Earth-like exoplanets.
स्पेक्ट्रोस्कोपी पृथ्वी जैसे एक्सोप्लैनेट्स पर जीवन के रासायनिक संकेतों का पता लगाती है।
- In **October 2024**, scientists discussed processes creating order in the universe.
अक्टूबर 2024 में, वैज्ञानिकों ने ब्रह्मांड में व्यवस्था उत्पन्न करने वाली प्रक्रियाओं पर चर्चा की।
- Speculation: Complex systems evolve to store more information.
अनुमान: जटिल प्रणालियाँ अधिक जानकारी स्टोर करने के लिए विकसित होती हैं।
- A universal theory of life, involving **complexity** and **information storage**, remains elusive.
जीवन का एक सार्वभौमिक सिद्धांत, जिसमें **जटिलता और जानकारी भंडारण** शामिल हैं, अभी तक अस्पष्ट है।

Implications for search for life जीवन की खोज के लिए निहितार्थ

- Researchers have explored **alternatives to terrestrial biochemistry**.
शोधकर्ताओं ने **पृथ्वी के जैव रसायन** के वैकल्पिक रूपों का अन्वेषण किया है।
- All known living organisms, from **bacteria to humans**, contain **water**, a solvent essential for life.





सभी ज्ञात जीवित जीवों, बैक्टीरिया से लेकर मनुष्यों तक, में पानी होता है, जो जीवन के लिए आवश्यक एक विलायक है।

- Life could potentially emerge from other solvents like **sulfuric acid, ammonia, liquid carbon dioxide**, and even **liquid sulphur**.

जीवन अन्य विलायकों से उत्पन्न हो सकता है जैसे **सल्फ्यूरिक एसिड, ऐमोनिया, तरल कार्बन डाइऑक्साइड**, और यहां तक कि **तरल सल्फर**।

- Alien life might not be based on **carbon**, the backbone of essential molecules on Earth. परग्रही जीवन **कार्बन** पर आधारित नहीं हो सकता, जो पृथ्वी पर जीवन के आवश्यक अणुओं की रीढ़ है।

- Life might not even need a **planet** to survive.

जीवन को जीवित रहने के लिए **ग्रह** की भी आवश्यकता नहीं हो सकती है।

- **Advanced forms of life** on alien planets could be unrecognizable.

परग्रही ग्रहों पर **उन्नत जीवन रूप** पहचान में न आ सकते हैं।

- Astrobiologists will need to be **creative** in detecting life on Earth.

एस्ट्रोबायोलॉजिस्टों को पृथ्वी पर जीवन का पता लगाने में **रचनात्मक** होने की आवश्यकता होगी।

- One strategy: measure **mineral signatures** on the rocky surfaces of **exoplanets**.

एक रणनीति: **एक्सोप्लैनेट्स** की चट्टानी सतहों पर **खनिज संकेतों** को मापना।

- The minerals formed when life first appeared have grown to about **5,000** today.

जीवन के पहले उभरने पर बने खनिजों की संख्या आज लगभग **5,000** हो गई है।

- **Zircons** found in Australia are the oldest known pieces of Earth's crust.

ज़िरकॉन्स जो ऑस्ट्रेलिया में पाए गए थे, पृथ्वी की पपड़ी के सबसे पुराने ज्ञात टुकड़े हैं।

- **Apatite**, a complex calcium phosphate mineral, is created by **biology**.

एपेटाइट, एक जटिल कैल्शियम फॉस्फेट खनिज, **जैविकी** द्वारा निर्मित होता है।

- **Apatite** is a primary ingredient in **bones, teeth, and fish scales**.

एपेटाइट हड्डियों, दांतों, और मछलियों की त्वचा में एक प्रमुख घटक है।

- Another strategy: detect **technosignatures**, such as artificial lights or industrial pollutants like **nitrogen dioxide**.

एक और रणनीति: **टेक्नोसिग्नेचर्स** का पता लगाना, जैसे कृत्रिम रोशनी या औद्योगिक प्रदूषक जैसे **नाइट्रोजन डाइऑक्साइड**।

- **Technosignatures** are traces of intelligent life.

टेक्नोसिग्नेचर्स बुद्धिमान जीवन के निशान होते हैं।

- It's unclear how and when the first detection of life beyond Earth will happen.

यह अस्पष्ट है कि पृथ्वी के बाहर जीवन की पहली पहचान कब और कैसे होगी।

- The search could be within the **solar system**, or through **exoplanet atmospheres**, or by detecting artificial **radio signals** from a distant civilization.

खोज **सौरमंडल** के भीतर, या **एक्सोप्लैनेट वातावरण** के माध्यम से, या एक दूरस्थ सभ्यता से कृत्रिम **रेडियो संकेतों** का पता लगाने के द्वारा हो सकती है।

- The search is a **twisting road**, not a straightforward path.

खोज एक **घुमावदार रास्ता** है, सीधा मार्ग नहीं।





- And that's for life as we know it — for life as we don't know it, **all bets are off.**
और यह उस जीवन के लिए है जैसा हम जानते हैं - जिस जीवन को हम नहीं जानते, उसके लिए सभी दावे निरस्त हैं।

Japan space startup aborts second launch minutes after liftoff

PCS
Associated Press

A Japanese space startup said its second attempt to launch a rocket carrying satellites into orbit had been aborted minutes after liftoff Wednesday and destroyed itself, nine months after the company's first launch attempt ended in an explosion.

Space One's Kairos No. 2 rocket lifted off from a coastal site in the mountainous prefecture of Wakayama in central Japan.

The company said it had aborted the flight after concluding that it was unlikely to complete its mission.

"We are very sorry that we could not achieve as far as a final stage of the mission," Space One President Masakazu Toyoda told a news conference Wednesday. "We don't consider this a failure because we are getting valuable data that will help our pursuit toward a next challenge."

He said he hoped to find the cause to address the problems as soon as possible to achieve success next time.

Company executive and space engineer Mamoru Endo said the abnormality in the first-stage engine nozzle or its control system is likely to have caused an unstable flight of the rocket, which started spiraling in midflight and eventually destroyed itself about three minutes after liftoff, using its autonomous safety mechanism.

The rocket, which rose higher than 100 kilometers above ground, entered space

Issues with the first-stage engine nozzle are likely to have caused unstable flight, and the rocket started to spiral. It eventually destroyed itself about three minutes after liftoff

before it was destroyed, officials said.

Space One aims to be Japan's first company to put a satellite into orbit, hoping to boost Japan's lagging space industry with a small rocket for an affordable space transport business.

Wednesday's flight, postponed twice from Saturday because of strong winds, came nine months after a failed debut flight in March, when the rocket was intentionally exploded five seconds after takeoff. The flight was carrying a government satellite that was intended to monitor North Korea's missile launches and other military activities.

Kairos No. 2 rocket was carrying five small satellites, including one from the Taiwanese space agency and several from Japanese startups.

Space One said it had fixed the cause of the debut flight failure, which stemmed from a miscalculation of the rocket's first-stage propulsion.

Japan hopes the company can pave the way for a domestic space industry that competes with the United States.

Tokyo-based Space One was set up in 2018 with investments from major Japanese companies, including Canon Electronics, IHI, Shimizu, and major banks, to commercialise space delivery services at lower costs and regular flights as many as 20 times a year, compared to six currently planned by the government-led space program.

Japan's space development programmes are led by Japan Aerospace Exploration Agency, or JAXA, and industry leaders such as Mitsubishi Heavy Industries and IHI, as they develop two main flagship rockets, the large H3 rocket and the much smaller Epsilon, to cater to the growing satellite transport business.



Japan space startup aborts second launch minutes after liftoff

जापान के अंतरिक्ष स्टार्टअप ने प्रक्षेपण के कुछ ही मिनटों बाद दूसरी लॉन्च को रद्द किया

- **Space One**, a Japanese space startup, aborted its second rocket launch minutes after liftoff on **Wednesday**. The rocket, carrying satellites into orbit, destroyed itself.
स्पेस वन, एक जापानी अंतरिक्ष स्टार्टअप, ने बुधवार को प्रक्षेपण के कुछ ही मिनटों बाद अपनी दूसरी रॉकेट लॉन्च को रद्द कर दिया। रॉकेट, जो उपग्रहों को कक्षा में भेज रहा था, ने खुद को नष्ट कर लिया।
- This incident occurred **nine months** after the company's first launch attempt in **March** ended in an explosion.
यह घटना कंपनी के पहले प्रक्षेपण प्रयास के नौ महीने बाद हुई, जब वह मार्च में विस्फोट में समाप्त हो गया था।
- **Kairos No. 2** rocket lifted off from a coastal site in **Wakayama**, central Japan.
कायरोस नं. 2 रॉकेट जापान के मध्य में स्थित वाकायामा के एक तटीय स्थल से प्रक्षेपित हुआ।
- The company aborted the flight after concluding that it was unlikely to complete its mission.
कंपनी ने उड़ान को रद्द कर दिया क्योंकि उसने यह निष्कर्ष निकाला कि मिशन को पूरा करना असंभव था।
- **Masakazu Toyoda**, Space One President, expressed regret and emphasized that the data gathered would help in future challenges.
मासाकाजु टोयोडा, स्पेस वन के अध्यक्ष ने खेद व्यक्त किया और यह बताया कि एकत्रित डेटा भविष्य की चुनौतियों में मदद करेगा।
- **Mamoru Endo**, an executive and space engineer, suggested the rocket's unstable flight was likely due to an issue with the first-stage engine nozzle or its control system.
कंपनी के कार्यकारी और अंतरिक्ष इंजीनियर ममोरु एंडो ने सुझाव दिया कि रॉकेट की अस्थिर उड़ान पहले चरण के इंजन नोजल या उसके नियंत्रण प्रणाली में समस्या के कारण हुई।
- The rocket was destroyed using its autonomous safety mechanism **three minutes** after liftoff.



Space One President Masakazu Toyoda announces the failure of the second attempt to launch the Kairos No. 2 rocket on Wednesday. AP





रॉकेट ने प्रक्षेपण के **तीन मिनट** बाद अपनी स्वायत्त सुरक्षा प्रणाली का उपयोग करके नष्ट कर लिया।

- The rocket reached over **100 kilometers** above ground, entering space before being destroyed.

रॉकेट ने पृथ्वी से **100 किलोमीटर** से अधिक ऊंचाई तक पहुंचा, और अंतरिक्ष में प्रवेश किया इससे पहले कि यह नष्ट हो गया।

- Space One aims to be Japan's first company to put a satellite into orbit and boost the country's space industry with affordable space transport.

स्पेस वन का लक्ष्य जापान की पहली कंपनी बनना है जो उपग्रह को कक्षा में डालेगी और किफायती अंतरिक्ष परिवहन के साथ देश के अंतरिक्ष उद्योग को बढ़ावा देगी।

- **Wednesday's** flight was delayed twice due to strong winds, nine months after the failed debut flight in **March**.

बुधवार की उड़ान को मजबूत हवाओं के कारण दो बार स्थगित किया गया, जो **मार्च** में असफल पहले उड़ान के नौ महीने बाद थी।

- The **March** launch, carrying a government satellite to monitor North Korea's missile launches, ended in an intentional explosion five seconds after takeoff.

मार्च में प्रक्षेपित किया गया लॉन्च, जिसमें एक सरकारी उपग्रह था जो उत्तर कोरिया के मिसाइल प्रक्षेपणों की निगरानी के लिए था, प्रक्षेपण के पांच सेकंड बाद जानबूझकर विस्फोट में समाप्त हो गया।

- The **Kairos No. 2** rocket was carrying five small satellites, including one from **Taiwan's space agency** and several from **Japanese startups**.

कायरोस नं. 2 रॉकेट पांच छोटे उपग्रहों को ले जा रहा था, जिनमें **ताइवान के अंतरिक्ष एजेंसी** से एक और **जापानी स्टार्टअप्स** से कुछ उपग्रह शामिल थे।

- Space One stated it had resolved the cause of the previous flight failure, which stemmed from a miscalculation of the rocket's first-stage propulsion.

स्पेस वन ने कहा कि उसने पिछले उड़ान विफलता के कारण को हल कर लिया है, जो रॉकेट के पहले चरण के प्रणोदन की गलत गणना से उत्पन्न हुआ था।

- **Japan** hopes Space One can lead the way for a competitive domestic space industry.

जापान आशा करता है कि स्पेस वन एक प्रतिस्पर्धी घरेलू अंतरिक्ष उद्योग के लिए रास्ता खोलेगा।

- **Space One**, established in **2018**, received investments from major companies like **Canon Electronics, IHI, Shimizu**, and major banks.

स्पेस वन, जो **2018** में स्थापित हुआ था, ने प्रमुख कंपनियों जैसे **कैनन इलेक्ट्रॉनिक्स, IHI, शिमिजू**, और प्रमुख बैंकों से निवेश प्राप्त किया।

- The company aims to commercialize space delivery services with regular, low-cost flights, hoping to launch up to **20 times a year** compared to the government-led space program's **six** launches.

कंपनी का लक्ष्य अंतरिक्ष डिलीवरी सेवाओं को नियमित, कम लागत वाली उड़ानों के साथ वाणिज्यिक बनाना है, और वह हर साल **20 बार लॉन्च** करने की उम्मीद करती है, जबकि सरकारी अंतरिक्ष कार्यक्रम में **छह लॉन्च** होते हैं।





PATRIOTIC IAS: Near Rajbanshi Hospital, Paidleyganj Road, Gorakhpur

Contact Number: 9971932488

- Japan's space development programs are led by **Japan Aerospace Exploration Agency (JAXA)** and industry leaders like **Mitsubishi Heavy Industries** and **IHI**.
जापान के अंतरिक्ष विकास कार्यक्रम **जापान एयरोस्पेस एक्सप्लोरेशन एजेंसी (JAXA)** और उद्योग नेताओं जैसे **मित्सुबिशी हेवी इंडस्ट्रीज** और **IHI** द्वारा नेतृत्वित हैं।
- **JAXA** and industry leaders are developing two flagship rockets: the large **H3** rocket and the smaller **Epsilon** rocket for satellite transport.
JAXA और उद्योग नेता दो प्रमुख रॉकेट विकसित कर रहे हैं: बड़ा **H3** रॉकेट और छोटा **एप्सिलोन** रॉकेट उपग्रह परिवहन के लिए।

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