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17_01_2025 DAILY CURRENT AFFAIRS

TOPICS COVERED

1. **ISRO docks two satellites, puts India in elite league / इसरो ने दो उपग्रहों को अंतरिक्ष में भेजा, भारत को शीर्ष श्रेणी में पहुंचाया (GS Paper-III: S&T)**
2. **Hindenburg Research winds up operations / हिंडेनबर्ग रिसर्च ने अपना परिचालन बंद कर दिया (GS Paper-II: Stock Manipulation)**
3. **PM approves constitution of Eighth Pay Commission / प्रधानमंत्री ने आठवें वेतन आयोग के गठन को मंजूरी दी (GS Paper-II)**
4. **T.N.'s 'drone didis' spray fields in a jiffy / टी.एन. की 'ड्रोन दीदी' खेतों में छिड़काव कर रही हैं (GS Paper-III: S&T)**
5. **Parties asked to disclose, label AI content used in poll campaigns / पार्टियों से चुनाव अभियानों में इस्तेमाल की गई AI सामग्री का खुलासा करने और लेबल लगाने को कहा गया (GS Paper-III: S&T)**
6. **Six die in jallikattu and other bull-related sports in T.N. / तमिलनाडु में जल्लीकट्टू और अन्य बैल संबंधी खेलों में छह लोगों की मौत (GS Paper-I: A&C)**

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7. **Great anniversaries of peace initiatives, a role for India /**
शांति पहल की महान वर्षगांठ, भारत की भूमिका (GS Paper-IV)
8. **An alliance of democracies with India at its core / भारत**
को केंद्र में रखकर लोकतांत्रिक देशों का गठबंधन (GS Paper-II:
India-West)
9. **Gates in the sky / आकाश में द्वार (GS Paper-III: S&T)**
10. **Open Era / ओपन एरा (PCS)**
11. **Impacts of Rupee Weakening / रुपये की कमजोरी के**
प्रभाव (GS Paper-III: National Currency)
12. **Singapore to help India's semiconductor industry /**
सिंगापुर भारत के सेमीकंडक्टर उद्योग की मदद करेगा (GS
Paper-II: India-Singapore)
13. **Centre announces constitution of Eighth Pay**
Commission / केंद्र ने आठवें वेतन आयोग के गठन की घोषणा
की (GS Paper-II)
14. **Indonesian President to be Chief Guest on Republic**
Day / गणतंत्र दिवस पर मुख्य अतिथि होंगे इंडोनेशियाई राष्ट्रपति
(GS Paper-II: India-Indonesian)
15. **Triservice tableau to roll down Kartavya Path on**
Republic Day / त्रिसेवा झांकी गणतंत्र दिवस पर कर्तव्य पथ पर
उतरेगी (PCS)
16. **V.K. Singh sworn in as Governor of Mizoram / वी.के.**
सिंह ने मिजोरम के राज्यपाल के रूप में शपथ ली (PCS)

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17. **Dalai Lama Charitable Trust gets FCRA nod / दलाई लामा चैरिटेबल ट्रस्ट को एफसीआरए की मंजूरी मिली (GS Paper-III: Money Laundering)**
18. **RBI announces steps to boost cross-border transactions in rupee / आरबीआई ने रुपये में क्रॉस-बॉर्डर लेन-देन को बढ़ावा देने के लिए कदम उठाए (GS Paper-III: External Sector)**
19. **Bezos's Blue Origin launches rocket on maiden test flight / बेजोस की ब्लू ओरिजिन ने पहले परीक्षण उड़ान में रॉकेट लॉन्च किया (PCS)**
20. **Manu, Vinesh and Avani nominated for BBC award / मनु, विनेश और अवनी को बीबीसी पुरस्कार के लिए नामांकित किया गया (PCS)**
21. **Long overdue, short-term regimen for TB set to be a game changer / टीबी के लिए लंबे समय से प्रतीक्षित, अल्पकालिक उपचार एक गेम चेंजर साबित हो सकता है (GS Paper-III: Tuberculosis)**
22. **Costly HPV vaccine needs to be part of national immunisation programme / महंगे एचपीवी टीके को राष्ट्रीय टीकाकरण कार्यक्रम का हिस्सा बनाया जाना चाहिए (GS Paper-II: Government Scheme)**



ISRO docks two satellites, puts India in elite league

ISRO docks two satellites, puts India in elite league

SpaDeX mission gained control of them as a single object; ISRO to follow up manoeuvre with undocking and power transfers; India joins the ranks of U.S., Russia and China with this feat

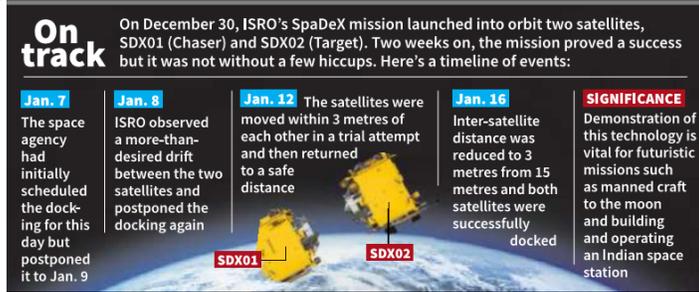
GS Paper III: S&T

Hemanth C.S.
BENGALURU

The Indian Space Research Organisation (ISRO) successfully executed a satellite docking experiment in the early hours of Thursday, "making India the fourth country" after the U.S., Russia and China to achieve this historic feat.

The two satellites – SDX01 (Chaser) and SDX02 (Target) – launched by the PSLV C60 on December 30 successfully docked as officials from the Mission Operations Complex (MOX) at the ISRO Telemetry, Tracking, and Command Network (ISTRAC) oversaw the complex procedure.

"Docking Success Spacecraft docking successfully completed! A historic moment. Let's walk



through the SpaDeX docking process: Manoeuvre from 15m to 3m hold point completed. Docking initiated with precision, leading to successful spacecraft capture. Retraction completed smoothly, followed by rigidisation for stability. Docking successfully completed. India became the 4th country to achieve successful Space Docking.

Congratulations to the entire team! Congratulations to India!" ISRO said on X.

Post-docking, the agency took control of the two satellites as a single object. "Undocking and power transfer checks to follow in coming days," it added.

The SpaDeX mission is an important project designed to develop and demonstrate the technology

needed for spacecraft manoeuvres. The demonstration of this technology is vital for futuristic missions such as sending an Indian astronaut to the moon, and building and operating an Indian space station.

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GATES IN THE SKY
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इसरो ने दो उपग्रहों को अंतरिक्ष में भेजा, भारत को शीर्ष श्रेणी में पहुंचाया

SpaDeX mission gained control of them as a single object; ISRO to follow up manoeuvre with undocking and power transfers; India joins the ranks of U.S., Russia and China with this feat

स्पैडेक्स मिशन ने एक ही वस्तु

के रूप में उन पर नियंत्रण प्राप्त कर लिया; इसरो अनडॉकिंग और पावर ट्रांसफर के साथ युद्धाभ्यास का पालन करेगा; भारत इस उपलब्धि के साथ अमेरिका, रूस और चीन की श्रेणी में शामिल हो गया

ISRO's Historic Satellite Docking Achievement

ISRO का ऐतिहासिक उपग्रह डॉकिंग सफलता

- The Indian Space Research Organisation (ISRO) successfully executed a **satellite docking experiment** in the early hours of **Thursday**, "making India the fourth country after the **U.S.**, **Russia**, and **China** to achieve this historic feat.

भारतीय अंतरिक्ष अनुसंधान संगठन (ISRO) ने गुरुवार की भोर में उपग्रह डॉकिंग प्रयोग

सफलतापूर्वक किया, जिससे भारत अमेरिका, रूस, और चीन के बाद चौथा देश बन गया, जिसने यह ऐतिहासिक उपलब्धि हासिल की।

- The two satellites — **SDX01 (Chaser)** and **SDX02 (Target)** — launched by the **PSLV C60 on December 30** successfully docked as officials from the **Mission Operations Complex (MOX)** at the **ISRO Telemetry, Tracking, and Command Network (ISTRAC)** oversaw the complex procedure.

दो उपग्रह – SDX01 (चेज़र) और SDX02 (टार्गेट) — जिन्हें PSLV C60 द्वारा 30 दिसंबर को लॉन्च



किया गया था, सफलतापूर्वक डॉक किए गए, जबकि ISRO टेलीमेट्री, ट्रैकिंग और कमांड नेटवर्क (ISTRAC) के मिशन ऑपरेशंस कॉम्प्लेक्स (MOX) से अधिकारियों ने इस जटिल प्रक्रिया की निगरानी की।

- **“Docking Success: Spacecraft docking successfully completed! A historic moment. Let’s walk through the SpaDeX docking process:**

- **Manoeuvre from 15m to 3m hold point completed.**
- **Docking initiated with precision, leading to successful spacecraft capture.**
- **Retraction completed smoothly, followed by rigidisation for stability.**
- **Docking successfully completed.**
- **India became the 4th country to achieve successful Space Docking.**
- **Congratulations to the entire team! Congratulations to India!**

"डॉकिंग सफलता: उपग्रह डॉकिंग सफलतापूर्वक पूर्ण हुई! एक ऐतिहासिक क्षण। आइए हम SpaDeX डॉकिंग प्रक्रिया को समझें:

- 15 मीटर से 3 मीटर होल्ड प्वाइंट तक की प्रक्रिया पूरी हुई।
 - सटीकता के साथ डॉकिंग शुरू की गई, जिसके परिणामस्वरूप सफल उपग्रह पकड़ बनी।
 - रीट्रैक्शन सुचारु रूप से पूर्ण हुआ, इसके बाद स्थिरता के लिए कठोरता सुनिश्चित की गई।
 - डॉकिंग सफलतापूर्वक पूर्ण हुई।
 - भारत चौथा देश बना जिसने सफल स्पेस डॉकिंग की।
 - पूरी टीम को बधाई! भारत को बधाई!
- Post-docking, the agency took control of the two satellites as a **single object**. डॉकिंग के बाद, एजेंसी ने दो उपग्रहों को एक एकल वस्तु के रूप में नियंत्रित किया।
 - **"Undocking and power transfer checks to follow in coming days,"** it added. "आगे आने वाले दिनों में अडॉकिंग और पावर ट्रांसफर जांच की जाएगी," इसने जोड़ा।
 - The **SpaDeX mission** is an important project designed to develop and demonstrate the **technology needed for spacecraft manoeuvres**. SpaDeX मिशन एक महत्वपूर्ण परियोजना है जिसे उपग्रह संचालन के लिए आवश्यक तकनीकी विकास और प्रदर्शन के लिए डिज़ाइन किया गया है।
 - The demonstration of this technology is vital for **futuristic missions** such as **sending an Indian astronaut to the moon, and building and operating an Indian space station**. इस तकनीक का प्रदर्शन भविष्य की मिशनों के लिए महत्वपूर्ण है जैसे कि एक भारतीय अंतरिक्ष यान को चाँद पर भेजना, और भारतीय अंतरिक्ष स्टेशन का निर्माण और संचालन करना।

Space Docking

- **Space docking** is the process of joining two spacecraft together in orbit so that they can function as a single unit.
- This capability is vital for several space missions, including assembling space stations, refueling spacecraft, transferring supplies, or performing repairs in space.



अंतरिक्ष अन्वेषण: यह कक्षा में बड़े अंतरिक्ष यानों या अंतरिक्ष स्टेशनों के निर्माण की अनुमति देता है।

- **Refueling:** Docking enables spacecraft to refuel mid-mission, extending their operational life.
ईंधन भरना: डॉकिंग अंतरिक्ष यानों को मिशन के बीच में ईंधन भरने में सक्षम बनाता है, जिससे उनका संचालन जीवन बढ़ता है।
- **Crew and Cargo Transfer:** Astronauts and supplies can move between spacecraft or stations.
चालक दल और सामग्री स्थानांतरण: अंतरिक्ष यात्री और सामग्री अंतरिक्ष यानों या स्टेशनों के बीच स्थानांतरित हो सकते हैं।
- **Scientific Research:** It facilitates collaborative research missions by connecting modules from different countries.
वैज्ञानिक अनुसंधान: यह विभिन्न देशों के मॉड्यूल को जोड़कर सहयोगात्मक अनुसंधान मिशनों को सक्षम बनाता है।

Hindenburg Research winds up operations

GS Paper II: Stock Manipulation

WASHINGTON/NEW DELHI

U.S.-based shortseller Hindenburg Research will be disbanded, its founder Nathan Anderson has said, adding that the firm has completed the projects it was handling.

"The plan has been to wind up after we finished the pipeline of ideas we were working on," Mr. Anderson said late on Wednesday. The announcement comes just days before Donald Trump's inauguration as the new President of the United States.

Hindenburg, in January 2023, made waves when it published a report accusing the Adani Group of

"pulling the largest con in corporate history", wiping out over \$150 billion in value of the group's shares at their lowest point.

The Adani Group had vehemently denied all the allegations, including that of being "engaged in a brazen stock manipulation and accounting fraud scheme over the course of decades" and improper use of offshore tax havens to shore up group share prices.

Hindenburg's report against Adani Group led to a political storm in India.

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'NOT A CLEAN CHIT'

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Hindenburg Research winds up operations

हिंडेनबर्ग रिसर्च ने अपना परिचालन बंद कर दिया

- **U.S.-based shortseller Hindenburg Research** will be **disbanded**, its founder **Nathan Anderson** has said, adding that the firm has completed the projects it was handling.

अमेरिका स्थित शॉर्टसेलर हिंडेनबर्ग रिसर्च का समापन किया जाएगा, इसके संस्थापक **नाथन एंडरसन** ने कहा, साथ ही यह भी जोड़ा कि फर्म ने जिन परियोजनाओं पर काम किया था, उन्हें पूरा कर लिया है।

- "The plan has been to **wind up** after we finished the **pipeline of ideas** we were working on," Mr. Anderson said late on **Wednesday**.

"योजना यह थी कि हम उन **आइडिया की पाइपलाइन** को पूरा करने के बाद **समाप्ति** करें, जिन पर हम काम कर रहे थे," श्री एंडरसन ने **बुधवार** की रात कहा।

- The announcement comes just days before **Donald**

Trump's inauguration as the new **President of the United States**.



यह घोषणा डोनाल्ड ट्रम्प के शपथ ग्रहण से कुछ दिन पहले की गई है, जो संयुक्त राज्य अमेरिका के नए राष्ट्रपति के रूप में हो रहा था।

- Hindenburg, in **January 2023**, made waves when it published a report accusing the **Adani Group** of “pulling the largest con in corporate history”, wiping out over **\$150 billion** in value of the group’s shares at their lowest point.

जनवरी 2023 में, हिन्डनबर्ग ने जब एक रिपोर्ट प्रकाशित की, जिसमें अडानी ग्रुप पर “कॉर्पोरेट इतिहास में सबसे बड़ा धोखा” करने का आरोप लगाया गया, तो इससे **\$150 बिलियन** से अधिक के समूह के शेयरों का मूल्य उनके सबसे निचले स्तर पर गिर गया।

- The **Adani Group** had vehemently denied all the allegations, including that of being “engaged in a brazen **stock manipulation and accounting fraud scheme** over the course of decades” and improper use of **offshore tax havens** to shore up group share prices.

अडानी ग्रुप ने सभी आरोपों का जोरदार खंडन किया था, जिसमें “सावधानीपूर्वक स्टॉक मैनिपुलेशन और लेखांकन धोखाधड़ी योजना में दशकों तक शामिल होने” और समूह के शेयरों की कीमत को बढ़ाने के लिए ऑफशोर टैक्स हेवन्स का गलत उपयोग करने का आरोप था।

- Hindenburg’s report against **Adani Group** led to a **political storm in India**.

हिन्डनबर्ग की रिपोर्ट ने अडानी ग्रुप के खिलाफ भारत में राजनीतिक तूफान खड़ा कर दिया।

PM approves constitution of Eighth Pay Commission

PM approves constitution of Eighth Pay Commission

प्रधानमंत्री ने आठवें वेतन आयोग के गठन को मंजूरी दी

Establishment of the Eighth Pay Commission

आठवें वेतन आयोग की स्थापना

- **Days ahead of the Delhi Assembly election**, the **Union government** approved the establishment of the **Eighth Pay Commission** here on **Thursday**, accepting a demand of the **central trade unions** and **employees’ organisations**.

दिल्ली विधानसभा चुनाव से कुछ दिन पहले, केंद्र सरकार ने गुरुवार को आठवें वेतन आयोग की स्थापना को मंजूरी दी, जो केंद्रीय ट्रेड यूनियनों और कर्मचारी संगठनों की मांग पर आधारित था।

- The commission’s outcome will benefit about **50 lakh Union government employees** and **65 lakh pensioners**.

आयोग के परिणाम से लगभग **50 लाख केंद्रीय सरकार कर्मचारियों** और **65 लाख पेंशनरों** को लाभ होगा।

- **Union Minister Ashwini Vaishnaw** said the **Chairperson** and **two members** of the commission would be appointed soon.

केंद्रीय मंत्री अश्विनी वैष्णव ने कहा कि आयोग के अध्यक्ष और दो सदस्य जल्द ही नियुक्त किए जाएंगे।

GS Paper II:

The Hindu Bureau

NEW DELHI

Days ahead of the Delhi Assembly election, the Union government approved the establishment of the Eighth Pay Commission here on Thursday, accepting a demand of the central trade unions and employees’ organisations.

The commission’s outcome will benefit about 50 lakh Union government employees and 65 lakh pensioners.

Union Minister Ashwini Vaishnaw said the Chairperson and two members of the commission would be appointed soon.

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T.N.'s 'drone didis' spray fields in a jiffy

The State's first batch of women trained under the Central scheme has been deployed to help farmers spray fertilizer and pesticide, water fields in minutes; drone's heavy weight is a challenge

GS Paper III: S&T

S. Prasad

KALLAKURICHI

Nandhini Sugumar, 27, a postgraduate in mathematics, has always had a fascination for drones. Having only seen the gadget whirring overhead at weddings, she now holds the controls as a drone pilot trained to assist Kallakurichi farmers.

A fortnight before Pongal, residents of Devapandalam, a nondescript village near Sankarapuram, watched in awe as Ms. Sugumar's drone hovered above a sugarcane field spraying fertilizer from its payload. The typical sortie covered the entire sugar cane field



At the helm: Saranya operating a drone on a paddy field at Kommasamuthiram in Kallakurichi district. S.S. KUMAR

in just seven minutes before returning to ground amid loud cheers from the villagers.

Ms. Sugumar is among the first batch of Tamil Nadu's women self-help group members selected

under the Centre's Nammo Drone Didi scheme, aimed at empowering rural women by training them to be drone pilots and making them integral stakeholders of the local farming supply chain.

She underwent a five-day hands-on training workshop on the operation and maintenance of drones held by Garuda Aerospace Private Ltd. in Chennai. After completing the Remote Pilot Training Classes, she was given a drone worth ₹7 lakh free, equipped with two tanks and a battery set.

Having graduated as a skilled drone pilot, Ms. Sugumar is excited to embrace the technology to meet a wide range of farmers' requirements, to spray fertilisers and pesticides, and water the fields.

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T.N.'s 'drone didis' spray fields in a jiffy

टी.एन. की 'ड्रोन दीदी' खेतों में छिड़काव कर रही हैं

- The **State's first batch of women trained under the Central scheme** has been deployed to help farmers spray fertilizer and pesticide, water fields in minutes; drone's heavy weight is a challenge
- **केंद्रीय योजना के तहत प्रशिक्षित महिलाओं के राज्य के पहले बैच को किसानों को मिनटों में खाद और कीटनाशक का छिड़काव करने और खेतों में पानी देने में मदद करने के लिए तैनात किया गया है; ड्रोन का भारी वजन एक चुनौती है**
- **Nandhini Sugumar, 27, a postgraduate in mathematics, has always had a fascination for drones.**
नंधिनी सुगुमार, 27, जो गणित में पोस्टग्रेजुएट हैं, हमेशा ड्रोन के प्रति आकर्षित रही हैं।
- Having only seen the gadget whirring overhead at **weddings**, she now holds the controls as a **drone pilot** trained to assist **Kallakurichi farmers**.



पहले केवल शादियों में उपग्रह को ऊपर उड़ते हुए देखा था, अब वह एक ड्रोन पायलट के रूप में कल्लाकुरिची किसानों की सहायता के लिए प्रशिक्षित होकर नियंत्रक हाथ में रखती हैं।

- A fortnight before **Pongal**, residents of **Devapandalam**, a nondescript village near **Sankarapuram**, watched in awe as Ms. Sugumar's drone hovered above a **sugarcane field** spraying **fertilizer** from its payload.

पोंगल से दो सप्ताह पहले, देवपांडालम गांव के निवासी, जो सांकरापुरम के पास एक सामान्य सा गांव है, सुगुरकेन के खेत में ड्रोन से खाद छिड़कते हुए सुगुमार के ड्रोन को हैरान होकर देख रहे थे।

- The typical sortie covered the entire **sugar cane field** in just **seven minutes** before returning to ground amid loud cheers from the villagers.

सामान्य उड़ान ने पूरे गन्ने के खेत को केवल सात मिनटों में कवर किया और फिर गांववालों की जोशीली तालियों के बीच जमीन पर लौट आया।

- Ms. Sugumar is among the first batch of **Tamil Nadu's women self-help group members** selected under the **Centre's Nammo Drone Didi scheme**, aimed at **empowering rural women by training them to be drone pilots and making them integral stakeholders of the local farming supply chain**.

सुगुमार तमिलनाडु की महिला स्व-रोजगार समूह सदस्य की पहली बैच में हैं, जिन्हें केंद्र की नमो ड्रोन दीदी योजना के तहत चुना गया, जिसका उद्देश्य ग्रामीण महिलाओं को ड्रोन पायलट के रूप में प्रशिक्षित कर उन्हें स्थानीय कृषि आपूर्ति श्रृंखला का अहम हिस्सा बनाना है।

- She underwent a five-day **hands-on training workshop** on the operation and maintenance of **drones** held by **Garuda Aerospace Private Ltd.** in **Chennai**.

उन्होंने चेन्नई में गरुड़ा एयरोस्पेस प्राइवेट लिमिटेड द्वारा आयोजित ड्रोन के संचालन और रख-रखाव पर पाँच दिन की **पैक्टिकल प्रशिक्षण कार्यशाला** में भाग लिया।

- After completing the **Remote Pilot Training Classes**, she was given a **drone worth ₹7 lakh** free, equipped with **two tanks** and a **battery set**.

रिमोट पायलट प्रशिक्षण कक्षाएं पूरी करने के बाद, उन्हें **₹7 लाख** कीमत का एक ड्रोन निःशुल्क दिया गया, जिसमें दो टैंक और बैटरी सेट थे।

- Having graduated as a skilled **drone pilot**, Ms. Sugumar is excited to embrace the technology to meet a wide range of farmers' requirements, to **spray fertilisers, pesticides, and water the fields**.

एक कुशल ड्रोन पायलट के रूप में स्नातक होने के बाद, सुगुमार इस तकनीक को अपनाने के लिए उत्साहित हैं ताकि वह किसानों की विभिन्न आवश्यकताओं को पूरा कर सकें, जैसे खाद, कीटनाशक छिड़कना और खेतों की सिंचाई करना।



Parties asked to disclose, label AI content used in poll campaigns

GS Paper III: S&T

The Hindu Bureau

NEW DELHI

Ahead of the Delhi Assembly poll, the Election Commission on Thursday issued a fresh advisory to political parties, asking them to ensure responsible and transparent use of Artificial Intelligence-generated content in their campaigns.

The move comes days after a first information report (FIR) was lodged against the Aam Aadmi Party for allegedly posting AI-generated photos and videos of Prime Minister Narendra Modi and Union Home Minister Amit Shah on the party's official 'X' handle.

Just before the Lok Sabha election last year, the electoral body had issued guidelines to curb potential use of 'deepfakes' and AI-

EC advisory comes after FIR against AAP for allegedly posting AI-generated photos and videos of PM

generated distorted content by political parties and their representatives to disturb the level playing field.

The advisory issued on Thursday introduces labelling and disclosure norms as far as use of AI-generated content is concerned. This requires parties to label any material generated by AI with notations such as "AI-Generated", "Digitally Enhanced" or "Synthetic Content".

"...Considering the deepening influence of AI-generated/synthetic content in shaping public opinion, the

Election Commission of India advises all political parties and their leaders, candidates and star campaigners to also take necessary measures for prominent labelling of AI-generated/synthetic content, if any, being shared for campaigning through their social media platforms and other media platforms," the guidelines said.

At a press meet to announce the date for the Delhi poll to be held on February 5, Chief Election Commissioner Rajiv Kumar had cautioned against potential misuse of AI and directed the administration to be vigilant and act swiftly to counter attempts to spread misinformation, especially when it had the potential to erode trust in electoral processes.

Parties asked to disclose, label AI content used in poll campaigns

पार्टियों से चुनाव अभियानों में इस्तेमाल की गई AI सामग्री का खुलासा करने और लेबल लगाने को कहा गया

- Ahead of the **Delhi Assembly poll**, the **Election Commission on Thursday** issued a fresh advisory to **political parties**, asking them to ensure responsible and transparent use of **Artificial Intelligence-generated content** in their campaigns.

दिल्ली विधानसभा चुनाव से पहले,

चुनाव आयोग ने गुरुवार को राजनीतिक दलों के लिए एक नई सलाह जारी की, जिसमें उन्हें अपने अभियानों में कृत्रिम बुद्धिमत्ता-जनरेटेड कंटेंट का जिम्मेदार और पारदर्शी उपयोग सुनिश्चित करने को कहा गया।

- The move comes days after a **first information report (FIR)** was lodged against the **Aam Aadmi Party** for allegedly posting **AI-generated photos and videos of Prime Minister Narendra Modi and Union Home Minister Amit Shah** on the party's official **'X' handle**.

यह कदम कुछ दिन बाद उठाया गया, जब आम आदमी पार्टी के खिलाफ प्रथम सूचना रिपोर्ट (FIR) दर्ज की गई, जिसमें आरोप लगाया गया कि पार्टी ने प्रधानमंत्री नरेंद्र मोदी और केंद्रीय गृह मंत्री अमित शाह के एआई-जनरेटेड फोटो और वीडियो अपनी आधिकारिक 'X' हैंडल पर पोस्ट किए थे।

- Just before the **Lok Sabha election** last year, the electoral body had issued guidelines to curb potential use of **'deepfakes' and AI-generated distorted content** by political parties and their representatives to disturb the level playing field.

पिछले साल लोकसभा चुनाव से ठीक पहले, चुनाव आयोग ने राजनीतिक दलों और उनके



प्रतिनिधियों द्वारा 'डीपफेक्स' और एआई-जनरेटेड विकृत कंटेंट के संभावित उपयोग को रोकने के लिए दिशा-निर्देश जारी किए थे, ताकि समान खेल क्षेत्र को न बिगाड़ा जाए।

- The advisory issued on **Thursday** introduces **labelling and disclosure norms** as far as use of **AI-generated content** is concerned. This requires parties to label any material generated by AI with notations such as **"AI-Generated," "Digitally Enhanced," or "Synthetic Content."**

गुरुवार को जारी की गई सलाह में एआई-जनरेटेड कंटेंट के उपयोग के संबंध में लेबलिंग और प्रकटीकरण मानदंड शामिल किए गए हैं। इसके तहत दलों को किसी भी एआई द्वारा जनित सामग्री पर "AI-Generated," "Digitally Enhanced," या "Synthetic Content" जैसे संकेतों के साथ लेबल करना आवश्यक होगा।

- "...Considering the deepening influence of **AI-generated/synthetic content** in shaping **public opinion**, the **Election Commission of India** advises all **political parties and their leaders, candidates, and star campaigners** to also take necessary measures for prominent labelling of **AI-generated/synthetic content**, if any, being shared for campaigning through their **social media platforms** and other **media platforms**," the guidelines said.

"... **AI-जनरेटेड/सिंथेटिक कंटेंट** के सार्वजनिक राय को आकार देने में बढ़ते प्रभाव को देखते हुए, भारत के चुनाव आयोग सभी राजनीतिक दलों और उनके नेताओं, उम्मीदवारों, और स्टार प्रचारकों से भी यह सलाह देता है कि वे अपने सोशल मीडिया प्लेटफॉर्म और अन्य मीडिया प्लेटफॉर्म के माध्यम से प्रचार के लिए साझा किए जाने वाले **AI-जनरेटेड/सिंथेटिक कंटेंट** को प्रमुख रूप से लेबल करने के लिए आवश्यक कदम उठाएं," दिशा-निर्देश में कहा गया।

- At a press meet to announce the date for the **Delhi poll to be held on February 5**, **Chief Election Commissioner Rajiv Kumar** had cautioned against potential misuse of AI and directed the administration to be vigilant and act swiftly to counter attempts to spread **misinformation**, especially when it had the potential to erode **trust in electoral processes**.

दिल्ली चुनाव की तारीख 5 फरवरी को घोषित करने के लिए आयोजित एक प्रेस मीट में, मुख्य चुनाव आयुक्त राजीव कुमार ने एआई के संभावित दुरुपयोग के खिलाफ चेतावनी दी और प्रशासन को सतर्क रहने और गलत सूचना फैलाने के प्रयासों को त्वरित रूप से काउंटर करने का निर्देश दिया, खासकर जब इसका चुनावी प्रक्रियाओं में विश्वास को कमजोर करने की क्षमता हो।



Six die in jallikattu and other bull-related sports in T.N.

The Hindu Bureau

TIRUCHI/MADURAI
GS Paper I: A&C

Six persons were killed in jallikattu and other bull sport such as eruthattam and manjuvirattu in Tamil Nadu on Thursday.

Three spectators, including two elderly citizens, were killed in the jallikattu organised at Alanganallur in Madurai district, Rachandar Thirumalai in Karur district, and Mangadevanpatti in Pudukottai district. Two persons were killed at a manjuvirattu in Sivaganga district and one person in eruthattam in Salem district. Several people were also injured in jallikattu events held in villages in Madurai, Tiruchi and Pudukottai districts.

N. Kuzhandaivelu, 65, of Samuthiram at Srirangam taluk in Tiruchi district, was gored by a bull at the event in Rachandar Thiru-



Action-packed: Participants trying to tame a bull at the jallikattu in Rachandar Thirumalai on Thursday. SPECIAL ARRANGEMENT

malai. Police sources said he began to bleed from his nose and mouth, and was referred to the Mahatma Gandhi Memorial Government Hospital after administration of first aid. He died at the hospital.

At the Mangadevanpatti event, C. Perumal, 70, of Vilavayal in Kulathur taluk, was killed after being hit by a bull. He died at the Pudukottai Government Medical College Hospital.

Police sources said 734

bulls were released into the arena during the event at Rachandar Thirumalai, and 372 bull-tamers took the field in batches. A total of 62 persons were injured, of whom 55 were treated at the venue. Over 600 bulls were released into the arena at the Mangadevanpatti event, and 300 tamers took part in the event. Eleven persons were injured.

A total of 56 persons were injured in the Avarangadu jallikattu.

Six die in jallikattu and other bull-related sports in T.N.

तमिलनाडु में जल्लीकट्टू और अन्य बैल संबंधी खेलों में छह लोगों की मौत

•Six persons were killed in jallikattu and other bull sports such as eruthattam and manjuvirattu in Tamil Nadu on Thursday.

गुरुवार को तमिलनाडु में जल्लीकट्टू और अन्य बैल खेलों जैसे एरुत्तम और मनजुविरत्तू में छह लोगों की मौत हो गई।

•Three spectators, including two elderly citizens, were killed in the jallikattu organised at Alanganallur in Madurai district, Rachandar Thirumalai in Karur district, and Mangadevanpatti in Pudukottai district.

तीन दर्शक, जिनमें दो वरिष्ठ नागरिक शामिल हैं, मदुरै जिले के आलंगनल्लूर,

करूर जिले के रचनंदर तिरुमलई और पुडुकोटाई जिले के मंगादेवनपाट्टी में आयोजित जल्लीकट्टू में मारे गए।

- Two persons were killed at a manjuvirattu in Sivaganga district and one person in eruthattam in Salem district.

दो लोग सिवगंगा जिले में मनजुविरत्तू और एक व्यक्ति सालम जिले में एरुत्तम में मारे गए।

- Several people were also injured in jallikattu events held in villages in Madurai, Tiruchi, and Pudukottai districts.

कई लोग भी मदुरै, तिरुची, और पुडुकोटाई जिलों के गांवों में आयोजित जल्लीकट्टू आयोजनों में घायल हुए।

- N. Kuzhandaivelu, 65, of Samuthiram at Srirangam taluk in Tiruchi district, was gored by a bull at the event in Rachandar Thirumalai.



एन. कूज़ुंढैवेलू, 65, तिरुची जिले के सिरंगम तालुक के समुथिरम के निवासी, रचनंदर तिरुमलई में आयोजन में बैल द्वारा मारे गए।

- Police sources said he began to bleed from his nose and mouth and was referred to the **Mahatma Gandhi Memorial Government Hospital** after administration of first aid. He died at the hospital.

पुलिस सूत्रों ने कहा कि वह अपने नाक और मुँह से रक्त बहाने लगे और प्राथमिक उपचार के बाद उन्हें महात्मा गांधी मेमोरियल सरकारी अस्पताल भेजा गया। अस्पताल में उनकी मौत हो गई।

- At the **Mangadevanpatti event**, **C. Perumal, 70**, of **Vilavayal** in **Kulathur taluk**, was killed after being hit by a bull. He died at the **Pudukottai Government Medical College Hospital**.

मंगादेवनपाट्टी आयोजन में सी. परुमल, 70, कुलथुर तालुक के विलावायल के निवासी, बैल से टकराने के बाद मारे गए। वह पुडुकोटाई सरकारी मेडिकल कॉलेज अस्पताल में भर्ती होने के बाद मारे गए।

- Police sources said **734 bulls** were released into the arena during the event at **Rachandar Thirumalai**, and **372 bull-tamers** took the field in batches. A total of **62 persons** were injured, of whom **55** were treated at the venue.

पुलिस सूत्रों ने कहा कि 734 बैल को रचनंदर तिरुमलई में आयोजन के दौरान अखाड़े में छोड़ा गया, और 372 बैल-तामेर बारी-बारी से मैदान में उतरे। कुल 62 लोग घायल हुए, जिनमें से 55 को स्थल पर उपचार मिला।

- Over **600 bulls** were released into the arena at the **Mangadevanpatti event**, and **300 tamers** took part in the event. **Eleven persons** were injured.

600 से अधिक बैल को मंगादेवनपाट्टी आयोजन में अखाड़े में छोड़ा गया, और 300 तामेर ने आयोजन में भाग लिया। ग्यारह लोग घायल हुए।

- A total of **56 persons** were injured in the **Avarangadu jallikattu**.

अवरंगाडू जल्लीकट्टू में कुल 56 लोग घायल हुए।

Jallikattu

- **Jallikattu Overview**

Jallikattu, also known as **Eru Thazhuvuthal** and **Manju Virattu**, is a traditional Tamil sport where a zebu bull (such as the Pulikulam or Kangayam breeds) is released into a crowd. Participants attempt to grab the bull's hump and either hold on to it or try to bring the bull to a stop.

जल्लीकट्टू, जिसे एरु तजुवुथल और मंजु विरट्टु के नाम से भी जाना जाता है, तमिलनाडु का एक पारंपरिक खेल है, जिसमें एक जेबू बैल (जैसे पुलिकुलम या कंगायम नस्ल) को भीड़ के बीच छोड़ा जाता है। प्रतिभागी बैल के कूबड़ को पकड़ने या उसे रोकने का प्रयास करते हैं।

- **Cultural Significance**

Jallikattu is traditionally associated with **Pongal celebrations**, particularly on **Mattu**



Pongal day in January. The event reflects bravery, strength, and cultural pride in rural Tamil Nadu.

जल्लिकट्टू को पारंपरिक रूप से **पोंगल उत्सवों**, विशेषकर **मट्टू पोंगल** के दिन जनवरी में मनाया जाता है। यह आयोजन ग्रामीण तमिलनाडु में साहस, शक्ति और सांस्कृतिक गौरव का प्रतीक है।

- **Animal Rights Concerns and Legal Developments**

Due to injuries and fatalities to both humans and animals during the sport, animal rights organizations have opposed it. The **Supreme Court of India** banned Jallikattu several times, citing cruelty to animals. However, following public protests, a **2017 ordinance** was enacted, allowing the sport to continue with certain regulations.

खेल के दौरान मनुष्यों और जानवरों दोनों को चोट लगने और मृत्यु के मामलों के कारण, पशु अधिकार संगठनों ने इसका विरोध किया। **भारतीय सर्वोच्च न्यायालय** ने इसे पशु क्रूरता का हवाला देते हुए कई बार प्रतिबंधित किया। लेकिन जनविरोध के बाद, **2017 का एक अध्यादेश** पारित किया गया, जिससे खेल को कुछ नियमों के तहत जारी रखने की अनुमति मिली।

Etymology

- **Ancient Roots**

Ancient Tamil texts referred to Jallikattu as **Eru Thazhuvuthal**, meaning “bull embracing.” The term **Jallikattu** is derived from **Salli** (coins) and **Kattu** (package), referring to a prize tied to the bull’s horns.

प्राचीन तमिल ग्रंथों में इसे **एरु तजुवुथल** कहा गया है, जिसका अर्थ है "बैल को गले लगाना"। **जल्लिकट्टू** शब्द **सल्लि** (सिक्के) और **कट्टु** (पैकेज) से लिया गया है, जो बैल के सींगों से बंधे पुरस्कार को संदर्भित करता है।

Historical Background

- **Origins**

Jallikattu is believed to date back to the **Tamil classical period (400–100 BCE)** and was initially a cultural ritual among the **Ayar tribal people** of the Mullai region in ancient Tamil Nadu.

जल्लिकट्टू को **तमिल शास्त्रीय काल (400-100 ई.पू.)** का माना जाता है और यह प्राचीन तमिलनाडु के **अय्यर जनजातीय लोगों** के बीच एक सांस्कृतिक अनुष्ठान था।

- **Indus Valley Connection**

A seal from the **Indus Valley Civilization** depicting bull-taming is preserved in the **National Museum, New Delhi**.

सिंधु घाटी सभ्यता की एक मुहर, जिसमें बैल को काबू करते हुए दिखाया गया है, **राष्ट्रीय संग्रहालय, नई दिल्ली** में संरक्षित है।

- **Archaeological Evidence**



- A **cave painting near Madurai** depicts a man taming a bull, estimated to be 1,500 years old.
- A **third-century BCE tin coin** found in Tamil Nadu also provides evidence of the sport.
- मदुरै के पास की एक गुफा चित्रकारी, जिसमें बैल को वश में करने वाले व्यक्ति को दिखाया गया है, लगभग 1500 साल पुरानी मानी जाती है।
- तमिलनाडु में मिली तीसरी शताब्दी ईसा पूर्व की टिन मुद्रा भी इस खेल के प्रमाण प्रदान करती है।

Regional Practices

- **Geographic Distribution**

Jallikattu is prominent in areas like **Thanjavur, Tiruchirappalli, Tirunelveli, and Ramanathapuram**, with the **Mukkulathor castes** being key participants.

जल्लीकट्टू मुख्य रूप से तंजावुर, तिरुचिरापल्ली, तिरुनेलवेली, और रामनाथपुरम में प्रचलित है, जहां मुक्कुलाथोर जातियां मुख्य भागीदार हैं।

- **Religious Association**

In regions like **Pudukkottai**, Jallikattu is tied to religious rituals and often conducted after Pongal to honor village deities.

जैसे **पुडुकोट्टई** में, जल्लीकट्टू धार्मिक अनुष्ठानों से जुड़ा हुआ है और अक्सर पोंगल के बाद गांव की देवी-देवताओं को सम्मानित करने के लिए आयोजित किया जाता है।



Great anniversaries of peace initiatives, a role for India

GS Paper IV: Ethics

In the minutes before the deadliest tsunami in India's memory tore through its south-eastern shores on December 26, 2004, people living in those parts were just being themselves – laughing, crying, quarrelling, making love, lamenting or celebrating their destinies.

Seconds before wildfires gutted a huge swathe of Los Angeles' beautiful landscape earlier this very month, people there were in different states of exhilaration – with the sheer loveliness of their surroundings, the blue of the sky, the reflection of that in the azure of the sea, shopping, discussing the future of their country under Trump and Musk, wringing their hands or raising them in celebration.

'We could never have imagined...' is how those affected put it. The calamities were put down to the caprice of nature which cannot be predicted or prevented.

But we can imagine; in fact more than imagine, we can see with the clarity with which the high-end scientific team in Los Alamos saw the first detonation of a nuclear weapon, conducted by the United States under the instructions of U.S. President Harry S. Truman at 5:29 a.m. on July 16, 1945, as part of the Manhattan Project. The sight was piercingly sharp. General Thomas Farrell, who was a witness, said in his official report: "The lighting effects beggared description... It lighted every peak, crevasse and ridge of the nearby mountain range with a clarity and beauty that cannot be described but must be seen to be imagined...." If Farrell saw the fury as beauty, the physicist Kenneth Bainbridge who planned and executed the test exclaimed 'We are all sons of ...now'. I leave the elided word to the reader's imagination.

'Perish or use common sense'

This year, 2025, is the 80th year of that test, the world's first nuclear weapon test. It is also the 80th year of the first use of the bomb that had been tested over the Japanese cities of Hiroshima and Nagasaki less than one month later, killing between 1,50,000 and 2,46,000 people, mostly civilians, leading the Director of the project, J. Robert Oppenheimer, to cite the Bhagavad Gita's stunning imagery of Death by the light and heat of a thousand suns. On the very day that the bomb fell on Nagasaki, Bertrand Russell began drafting a statement that said: "The prospect for the human race is sombre beyond all precedent. Mankind are faced with a clear-cut alternative: either we shall all perish, or we shall have to acquire some slight degree of common sense. A great deal of new political thinking will be necessary if utter disaster is to be averted."



Gopalkrishna Gandhi

is a former Governor

Ten years later, in 1955, Russell and Albert Einstein led nine other scientists to issue an appeal to the leaders of governments to avert nuclear disaster. Joseph Rotblat, the only scientist to have left the Manhattan Project on moral grounds convened a press conference at which the Manifesto was released. The manifesto called for "a conference where scientists would assess the dangers posed to the survival of humanity by weapons of mass destruction". One particular phrase from the Manifesto has become lore: Remember your humanity, and forget the rest.

This is the 70th year of the Russell-Einstein Manifesto, the platinum anniversary of that expression of faith and hope for humanity. But in the intervening years, 'humanity' has been forgotten, 'the rest' has been pursued relentlessly. Glimmers of hope for humanity have risen through breakthrough arms control agreements and partial test bans, which have brought the world's arsenal of nuclear weapons down, but the genii keep escaping from the vat of controls.

Today, the danger of a nuclear conflagration is more real than ever. Much more real and immediate than the 'caprice' of nature is the finger that can press a nuclear button annihilating all life on planet earth. The fingertip is dangerously close to that little surface and before we can say 'Stop!', we may be cinder. Or worse, may be becoming cinder. This is not fantasy. This is not science fiction. And we are all doing exactly what we were when calamity struck us in 2004, and struck California earlier this year. We are in dangerous denial.

The Avadi resolution

This year, 2025, is also the platinum anniversary of another event in India that is scarcely remembered now but was sensorially important at the time. On January 17, 1955 (70 years ago to the date today), the Indian National Congress met in plenary at Avadi, in what was then Madras State, and with Jawaharlal Nehru and C. Rajagopalachari present, passed important resolutions among which was one that anticipated the Russell-Einstein Manifesto. It said: "The ominous development in respect of atomic and hydrogen bombs are a menace not only to world peace but to civilisation itself. The total prohibition of the manufacture and use of atomic and hydrogen and other weapons of mass destruction as well as conventional atomic weapons such as atomic artillery is imperative if civilisation is to be saved from destruction."

The Avadi resolution then called for the matter to be taken up by the Disarmament Commission of the United Nations 'so that the public of all

nations might become fully aware of the grave menace of war today'.

With Russia having revised its nuclear doctrine and officially declared arms control as 'a thing of the past', and North Atlantic Treaty Organization (NATO)-made and NATO-provided missiles being sent deep into Russian space, the stage is all but set for Moscow to implement what it has declared to be its option. The Israel-Palestine theatre wobbles on the nuclear tight rope. These 'state players' apart, non-state entities acquiring access through cyber and Artificial Intelligence pathways to nuclear weapons of the subsidiary type that the Avadi resolution mentioned is not just a possibility but a high probability.

There are no Russells, Einsteins and Rotblats among our science leaders to warn the world and India – now a nuclear weapons state in itself – of what can happen to us. Deterrence is now the esoteric shibboleth of specialists who have made of negotiations for arms control and test bans a self-perpetuating ritual. The world may well negotiate itself to an upstart annihilation or a carefully designed Armageddon ignited by delusions of avenging grandeur. Nine countries are said to be 'nuclear weapons countries', India being one of them. And, by a broad reckoning, as of 2024, the world has some 12,100 nuclear warheads. This number is staggering and unbelievable to any sane mind. But let us note that it is lower than the roughly 60,000 weapons that existed during the Cold War. There is reason to not lose hope.

There may well have been scientific inputs that went into the Avadi resolution, but the propulsion came from the leadership of the day. More recently, Rajiv Gandhi's 'Action Plan for a Nuclear Weapons Free and Non-Violent World Order' of 1988, showed that India 'remembered humanity' in the Russellian and Nehruvian way as of 37 years ago. Mani Shankar Aiyar's book (just out), *A Maverick in Politics*, vivifies that initiative and the cause of humanity as few books have in recent times.

India must lead

It is high time India did something for peace, beyond what it has to impress upon Moscow and Kiev the importance of negotiation. As the Avadi resolution put it, the issue is not just about the need to halt belligerence but the need to save humanity. That 'something' has to be at the very least a conference on preventing mass annihilation, leading to a new Action Plan, which includes action by India as well. This year of great anniversaries of peace initiatives can, given a stunning new initiative, save the world from inviting Bainbridge's self-mocking lament.

It is high time India did something for peace as there are no Russells, Einsteins and Rotblats to warn the world anymore

Great anniversaries of peace initiatives, a role for India

शांति पहल की महान वर्षगांठ, भारत की भूमिका



The Destructive Power of Nature and Nuclear Weapon Tests प्रकृति की विनाशकारी शक्ति और परमाणु हथियार परीक्षण

- In the minutes before the deadliest **tsunami** in **India's memory** tore through its **south-eastern shores** on **December 26, 2004**, people were just being themselves, laughing, crying, quarrelling, making love, lamenting, or celebrating their destinies.
26 दिसंबर 2004 को **भारत की यादों** में सबसे विनाशकारी **सुनामी** ने **दक्षिण-पूर्वी तटों** को तबाह किया, इससे पहले लोग बस अपने आप में थे – हंसना, रोना, लड़ना, प्यार करना, अफसोस करना या अपने भाग्य का जश्न मनाना।
- **Seconds before** wildfires gutted a huge swathe of **Los Angeles' beautiful landscape** earlier this month, people were in different states of exhilaration, shopping, discussing the future of their country under **Trump** and **Musk**, or raising their hands in celebration. **इस महीने पहले लॉस एंजिल्स के सुंदर दृश्य** में जंगल की आग लगने से पहले, लोग विभिन्न प्रकार की उत्तेजना में थे – शॉपिंग करना, अपने देश के भविष्य पर **ट्रंप** और **मस्क** के तहत चर्चा करना, या जश्न मनाने के लिए हाथ उठाना।
- **'We could never have imagined...'** is how those affected put it. The calamities were put down to the caprice of nature, which cannot be predicted or prevented.
'हमने कभी कल्पना नहीं की थी...' इस तरह प्रभावित लोगों ने इसे बताया। प्राकृतिक आपदाओं को प्रकृति की मूर्खता के रूप में पेश किया गया, जिसे न तो पूर्वानुमानित किया जा सकता है और न ही रोका जा सकता है।
- But we can imagine; in fact more than imagine, we can see with the clarity with which the high-end scientific team in **Los Alamos saw the first detonation of a nuclear weapon** on **July 16, 1945**, under **U.S. President Harry S. Truman**.
लेकिन हम कल्पना कर सकते हैं; बल्कि कल्पना से भी अधिक, हम उस स्पष्टता से देख सकते हैं, जिस स्पष्टता से **लॉस एलामोस** की उच्चतम वैज्ञानिक टीम ने **16 जुलाई 1945** को **अमेरिकी राष्ट्रपति हैरी एस. ट्रूमन** के तहत पहला **परमाणु परीक्षण** देखा।
- The sight was piercingly sharp. General **Thomas Farrell**, a witness, described the event: "The lighting effects beggared description... It lit every peak, crevasse, and ridge of the nearby mountain range with a clarity and beauty that cannot be described but must be seen to be imagined..."
दृश्य बेहद तीव्र था। गवाह **जनरल थॉमस फारेल** ने घटना का वर्णन किया: "प्रकाश प्रभावों का वर्णन करना असंभव था... इसने पास के पर्वत श्रृंखला के हर शिखर, गहरी दरार और कगार को ऐसी स्पष्टता और सुंदरता से रोशन किया, जिसे शब्दों में नहीं बताया जा सकता, लेकिन इसे देखने के बाद ही कल्पना की जा सकती है..."
- If Farrell saw the fury as beauty, **physicist Kenneth Bainbridge**, who planned and executed the test, exclaimed, **'We are all sons of ...now.'**
अगर फारेल ने क्रोध को सुंदरता के रूप में देखा, तो **भौतिक विज्ञानी केनेथ बैनब्रिज**, जिन्होंने परीक्षण की योजना बनाई और उसे अंजाम दिया, ने कहा, **'हम सभी अब ... के पुत्र हैं।'**
- This year, **2025**, marks the **80th year** of that test, the world's first **nuclear weapon test**. It is also the **80th year** of the first use of the bomb over **Hiroshima and Nagasaki**, killing



between **1,50,000** and **2,46,000 people**, mostly civilians.

इस वर्ष, **2025**, उस परीक्षण की **80वीं वर्षगांठ** है, जो दुनिया का पहला परमाणु हथियार परीक्षण था। यह **80वीं वर्षगांठ** है हिरोशिमा और नागासाकी पर बम के पहले उपयोग की, जिसमें **1,50,000** से **2,46,000 लोग** मारे गए, ज्यादातर नागरिक।

- The bombings led the **Director of the project, J. Robert Oppenheimer**, to cite the **Bhagavad Gita's** imagery of **Death by the light and heat of a thousand suns**.
इन बमबारीयों के कारण प्रोजेक्ट के निदेशक, जे. रॉबर्ट ओपेनहाइमर ने भगवद गीता के उस दृश्य का हवाला दिया, जिसमें **हजार सूर्यों की रोशनी और गर्मी से मृत्यु** का वर्णन है।
- On the very day the bomb fell on **Nagasaki**, **Bertrand Russell** began drafting a statement: "**The prospect for the human race** is sombre beyond all precedent."
जिस दिन बम नागासाकी पर गिरा, **बर्ट्रैंड रसेल** ने एक बयान तैयार करना शुरू किया: "**मानवता के लिए भविष्य अब तक के किसी भी उदाहरण से कहीं अधिक गंभीर है।**"
- The statement said: "**Either we shall all perish, or we shall have to acquire some slight degree of common sense.**"
बयान में कहा गया: "**या तो हम सभी नष्ट हो जाएंगे, या हमें थोड़ी सी सामान्य समझ प्राप्त करनी होगी।**"
- In **1955**, **Russell and Einstein**, along with other scientists, issued an appeal to **government leaders** to avert nuclear disaster.
1955 में, **रसेल और आइंस्टीन**, अन्य वैज्ञानिकों के साथ मिलकर, **सरकारी नेताओं** से परमाणु आपदा को टालने का आह्वान किया।
- The **Manifesto** called for "a conference where scientists would assess the dangers posed to the survival of humanity by weapons of mass destruction".
मैनिफेस्टो ने "एक सम्मेलन का आह्वान किया, जहां वैज्ञानिक मानवता के अस्तित्व के लिए **नाशकारी हथियारों से उत्पन्न खतरों का मूल्यांकन करेंगे।**"
- One particular phrase from the **Manifesto** has become lore: "**Remember your humanity, and forget the rest.**"
मैनिफेस्टो का एक विशेष वाक्यांश लोककथा बन गया है: "**अपनी मानवता को याद रखो, और बाकी सब कुछ भूल जाओ।**"
- This is the **70th year** of the **Russell-Einstein Manifesto**, the **platinum anniversary** of that expression of faith and hope for humanity.
यह **रसेल-आइंस्टीन मैनिफेस्टो** का **70वां वर्ष** है, उस मानवता के लिए विश्वास और उम्मीद के उस अभिव्यक्ति की **प्लैटिनम वर्षगांठ** है।
- But in the intervening years, 'humanity' has been forgotten, and 'the rest' has been pursued relentlessly.
लेकिन इन बीच के वर्षों में, 'मानवता' को भुला दिया गया, और 'बाकी सब' को निरंतर पीछा किया गया।
- Glimmers of hope for humanity have risen through breakthrough arms control agreements and partial test bans, which have brought the world's arsenal of **nuclear weapons** down.



- मानवता के लिए उम्मीद की किरणें हथियार नियंत्रण समझौतों और आंशिक परीक्षण प्रतिबंधों के माध्यम से उभरी हैं, जिन्होंने दुनिया के परमाणु हथियारों के भंडार को कम किया है।
- However, the **genii** continue to escape from the vat of controls.
हालांकि, जिन्न नियंत्रण के कटोरे से बाहर निकलते रहते हैं।

The Danger of Nuclear Conflagration

परमाणु युद्ध का खतरा

- Today, the danger of a **nuclear conflagration** is more real than ever. Much more real and immediate than the '**caprice**' of nature is the **finger** that can press a **nuclear button**, annihilating all life on planet Earth.
आज, **परमाणु युद्ध का खतरा** पहले से कहीं अधिक वास्तविक है। प्रकृति की '**मूर्खता**' से कहीं अधिक वास्तविक और तात्कालिक है वह **अंगुली** जो **परमाणु बटन** दबा सकती है, जिससे पृथ्वी पर सभी जीवन का नाश हो सकता है।
- The **fangertip** is dangerously close to that little surface, and before we can say 'Stop!', we may be **cinder**. Or worse, may be becoming cinder. This is not fantasy. This is not science fiction.
अंगूठे की नोक उस छोटे से सतह के करीब है, और हम कहने से पहले 'रोकें!' हम **चूरा** बन सकते हैं। या इससे भी बुरा, हम **चूरा** बन रहे हो सकते हैं। यह काल्पनिक नहीं है। यह **विज्ञान कथा** नहीं है।
- We are all doing exactly what we were doing when **calamity struck us** in **2004**, and struck **California earlier this year**. We are in dangerous **denial**.
हम सभी वही कर रहे हैं जो हम कर रहे थे जब **2004 में आपदा ने हम पर हमला किया**, और इस साल पहले **कैलिफोर्निया में हमला हुआ**। हम **खतरनाक इनकार** में हैं।

The Avadi Resolution

अवदी प्रस्ताव

- This year, **2025**, marks the **platinum anniversary** of an important event in **India**. On **January 17, 1955 (70 years ago today)**, the **Indian National Congress** passed a **resolution at Avadi**, in what was then **Madras State**.
इस वर्ष, **2025**, भारत में एक महत्वपूर्ण घटना की **प्लैटिनम वर्षगांठ** है। **17 जनवरी 1955** को (आज से 70 साल पहले), **भारतीय राष्ट्रीय कांग्रेस** ने **अवदी** में एक प्रस्ताव पारित किया, जो तब **मद्रास राज्य** था।
- The resolution anticipated the **Russell-Einstein Manifesto** and called for the **prohibition of atomic and hydrogen bombs**, as well as other **weapons of mass destruction**.
प्रस्ताव ने **रसेल-आइंस्टीन मैनिफेस्टो** की कल्पना की थी और **परमाणु और हाइड्रोजन बमों** के साथ-साथ अन्य **नाशकारी हथियारों** की प्रतिबंध की मांग की थी।
- The resolution said: "The **ominous development** in respect of atomic and hydrogen bombs are a menace not only to world peace but to civilisation itself."



प्रस्ताव में कहा गया था: "परमाणु और हाइड्रोजन बमों के संदर्भ में यह भयंकर विकास न केवल विश्व शांति के लिए बल्कि सभ्यता के लिए भी एक खतरा है।"

- It also called for the **Disarmament Commission** of the **United Nations** to take up the matter.

इसने संयुक्त राष्ट्र के विघटन आयोग से इस मामले को उठाने की भी मांग की थी।

- With **Russia** revising its nuclear doctrine and declaring arms control as 'a thing of the past', and **NATO** missiles being sent into **Russian space**, the stage is set for Moscow to implement its declared option.

रूस ने अपनी परमाणु नीति को संशोधित करते हुए हथियार नियंत्रण को 'भूतकाल की चीज' घोषित किया है, और नाटो मिसाइलों को रूसी क्षेत्र में भेजा जा रहा है, इससे मॉस्को द्वारा घोषित विकल्प को लागू करने का मंच तैयार हो गया है।

- The **Israel-Palestine** situation is also teetering on the **nuclear tightrope**.

इजराइल-फलस्तीन स्थिति भी परमाणु तंग रेखा पर लटकी हुई है।

- **Non-state entities** are gaining access to **nuclear weapons** through **cyber and Artificial Intelligence** pathways, a high probability, not just a possibility.

गैर-राज्य संस्थाएं साइबर और कृत्रिम बुद्धिमत्ता मार्गों से परमाणु हथियारों तक पहुंच प्राप्त कर रही हैं, यह केवल एक संभावना नहीं, बल्कि एक उच्च संभावना है।

- There are no **Russells**, **Einsteins**, or **Rotblats** among our science leaders to warn the world and India, now a **nuclear weapons state**, of what can happen.

हमारे वैज्ञानिक नेताओं में कोई रसेल, आइंस्टीन, या रॉटब्लाट नहीं है जो दुनिया और भारत को, जो अब एक परमाणु हथियार राज्य बन चुका है, चेतावनी दे सकें कि हमारे साथ क्या हो सकता है।

- **Deterrence** has become the esoteric mantra of specialists who have made arms control and test bans a **self-perpetuating ritual**.

निवारक अब विशेषज्ञों का गूढ़ मंत्र बन चुका है जिन्होंने हथियार नियंत्रण और परीक्षण प्रतिबंधों को एक स्व-प्रेरित अनुष्ठान बना दिया है।

- **Nine countries** are said to be '**nuclear weapons countries**', including **India**, with approximately **12,100 nuclear warheads** in total as of 2024.

कहा जाता है कि नौ देश 'परमाणु हथियार वाले देश' हैं, जिसमें भारत भी शामिल है, और 2024 तक दुनिया के पास कुल मिलाकर 12,100 परमाणु वारहेड्स हैं।

- This number is staggering and unbelievable to any sane mind, but it is lower than the **60,000 weapons** that existed during the **Cold War**.

यह संख्या किसी भी स्वस्थ मस्तिष्क के लिए चौंकाने वाली और अविश्वसनीय है, लेकिन यह कोल्ड वार के दौरान मौजूद 60,000 हथियारों से कम है।

- **Rajiv Gandhi's 'Action Plan for a Nuclear Weapons Free and Non-Violent World Order'** of 1988, showed that India remembered humanity.

राजीव गांधी का 'परमाणु हथियार मुक्त और अहिंसक विश्व व्यवस्था के लिए कार्य योजना' 1988 में यह दिखाती है कि भारत ने मानवता को याद रखा।

- **Mani Shankar Aiyar's** book, '**A Maverick in Politics**', highlights the initiative and the cause of humanity.



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मणि शंकर अय्यर की पुस्तक 'राजनीति में एक मावेरिक' इस पहल और मानवता के कारण को उजागर करती है।

India Must Lead

भारत को नेतृत्व करना चाहिए

- It is time for **India** to do something for **peace**, beyond just impressing **Moscow** and **Kiev** on the importance of negotiation.
भारत के लिए अब शांति के लिए कुछ करना जरूरी है, सिर्फ मॉस्को और कीव को वार्ता के महत्व के बारे में प्रभावित करने से आगे बढ़कर।
- The **Avadi resolution** stated that the issue is not just about halting belligerence but also about **saving humanity**.
अवदी प्रस्ताव ने कहा कि यह मुद्दा केवल युद्धविराम को रोकने का नहीं है बल्कि मानवता को बचाने का भी है।
- **India** should organize a **conference on preventing mass annihilation**, leading to a new **Action Plan** that includes actions by **India**.
भारत को सार्वभौमिक विनाश को रोकने पर एक सम्मेलन आयोजित करना चाहिए, जो एक नए कार्य योजना की ओर ले जाए, जिसमें भारत द्वारा उठाए गए कदम शामिल हों।
- This year, with great anniversaries of peace initiatives, can save the world if **India** takes the lead with a stunning new initiative.
इस वर्ष, शांति पहलों की महान वर्षगांठों के साथ, यदि भारत एक नए और प्रभावशाली पहल के साथ नेतृत्व करता है तो दुनिया को बचाया जा सकता है।

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An alliance of democracies with India at its core

GS Paper II: India and West

The year 2024 was the super-election year around the world, and 2025 must be the year when the world's democracies regroup and find new ways to support each other. Nowhere is this truer than in the relationship between Europe and India, a partnership that, for too long, has been big on strategies, but small on delivery. For nearly 17 years, European Union (EU)-India relations were seen through the prism of on/off Free Trade Agreement negotiations. As a free trader, I believe that the benefits of the world's biggest democracy and its largest trading bloc coming together to buck protectionist headwinds would be an economic and geopolitical game-changer.

Look at the bigger picture

However, we cannot be naive to the hurdles ahead. If a big-bang trade deal eludes us in the short term, we should develop another track away from the negotiators and bureaucrats. Fixed firmly at the highest political levels, it would focus on bigger picture geostrategic issues such as economic security, defence cooperation and a common agenda for space, emerging technology, and critical industry sectors such as pharmaceuticals.

On the geopolitical level, Europe was undoubtedly frustrated with India's response to Russia's invasion of Ukraine and continued close ties. These ties are historic. Conversely, India has broad rivalry with China, despite cooperation through the BRICS group and a substantial trading partnership. As a growing economy I can understand why India would not want to be sucked into power competition as the world divides into democratic and autocratic blocs. However, fundamentally, India is a democracy and its entanglement with Moscow and Beijing is unnatural. In the same vein, India's accusations of double standards from Europe are not without



Anders Fogh Rasmussen

served as North Atlantic Treaty Organization (NATO) Secretary General from 2009-14 and was the Prime Minister of Denmark from 2001-09

Europe and India need a more practical relationship; together, Europe, India and the United States can be unstoppable

substance. We cannot demand that India severs all ties with Russia without also addressing our own economic dependence on China.

A restart in relations should, therefore, start with a common assessment that Russia and China – with their 'No Limits' partnership – are both a threat to the global democratic world which includes India, Europe and the United States. What happens in the Atlantic affects the Indo-Pacific and vice versa.

On this basis we should focus on a series of practical measures to break down barriers to trade and investment piecemeal while strengthening our joint security, including economic security. This will include reducing dependencies on China in areas such as critical raw materials and developing new supply chains, with Europe seeing India as a 'Trusted Partner'.

Defence and trade

In defence, India and the U.S. already enjoy strong defence cooperation, with India being America's 'Major Defence Partner' and a member of the 'Quad' – sometimes referred to as the 'Asia-Pacific NATO'. Europe should support the continued development of this security alliance to give India more security guarantees.

EU-India defence discussions have increased but should accelerate to a high political level as Europe looks to bring much-needed investment into our industries, which can also offer India better weapons than Russia. The EU's new dedicated Defence Commissioner should visit India at the earliest opportunity and develop more collaboration, in defence and in space where both the EU and India have ambitious plans.

India and the EU have in place a Trade and Technology Council (TTC) to mirror a similar council with the Biden administration. Whether the EU-U.S. TTC survives President Donald

Trump is unclear, but the EU-India Council has not reached its potential, especially in coordinating a technology agenda. Here, we can also draw inspiration from India's ties with the U.S., where the U.S.-India initiative on Critical and Emerging Technology (iCET); iCET is promoting collaboration at the National Security Adviser level.

The Australian Strategic Policy Institute illustrates the scale of the challenge. It tracks the top 64 emerging technologies. In 57 of them, China is winning the global race. The U.S. is hot on its heels. However, India is also emerging as a key centre of global research innovation, with many other European countries also still in the running. Individually, we are doing okay in this existential race, but by combining forces, the free world can jump ahead to lead the world in all emerging technology, from quantum computing to advanced biotech. We must not hand victory to China.

In perspective

Europe and India should focus on a far more practical relationship built on tangible connections, including stronger people-to-people ties. For Europe, the benefits are obvious: India will become the world's third largest economy in the next decade, at a time when European global GDP share continues to fall. But there is a wider prize: forming an alliance of democracies that has India at its core.

If Europe wants to anchor India in that alliance, we need to change our approach to the subcontinent. That does not mean brushing differences or difficulties under the table. India has many challenges to its democracy, but so does Europe. We should seek to address them together. Europe, India and the United States are individually powerful, but, together, we are unstoppable against the united autocrats.

An alliance of democracies with India at its core

भारत को केंद्र में रखकर लोकतांत्रिक देशों का गठबंधन

- The year **2024** was a **super-election year** around the world, and **2025** must be the year when the world's **democracies regroup** and find new ways to support each other. **2024** विश्व भर में एक **सुपर-चुनावी वर्ष** था, और **2025** वह वर्ष होना चाहिए जब दुनिया के **लोकतंत्र** एकजुट हो जाएं और एक-दूसरे का समर्थन करने के नए तरीके खोजें।
- Nowhere is this truer than in the relationship between **Europe** and **India**, a partnership that has been big on strategies, but small on delivery. यह बात कहीं अधिक सही है, **यूरोप** और **भारत** के रिश्ते में, एक साझेदारी जो रणनीतियों में बड़ी रही है, लेकिन **प्रदर्शन** में छोटी रही है।
- For nearly **17 years**, **EU-India relations** were seen through the prism of on/off **Free Trade Agreement** negotiations.



लगभग 17 वर्षों तक, ईयू-भारत संबंध को मुफ्त व्यापार समझौते की बातचीत के संदर्भ में देखा गया था।

- As a **free trader**, I believe that the benefits of the world's biggest democracy and its largest trading bloc coming together to buck protectionist headwinds would be an **economic and geopolitical game-changer**.

एक मुक्त व्यापारी के रूप में, मुझे विश्वास है कि दुनिया की सबसे बड़ी लोकतंत्र और इसके सबसे बड़े व्यापारिक ब्लॉक का एक साथ आकर संरक्षणवादी विरोधी हवाओं का सामना करना एक आर्थिक और भू-राजनीतिक बदलाव साबित होगा।

Look at the Bigger Picture

बड़े चित्र को देखें

- However, we cannot be naive to the **hurdles ahead**. If a **big-bang trade deal** eludes us in the short term, we should develop another track away from the negotiators and bureaucrats.
हालांकि, हमें आगे की बाधाओं को नज़रअंदाज़ नहीं करना चाहिए। यदि बड़ा व्यापार समझौता हमें संक्षिप्त अवधि में नहीं मिलता है, तो हमें वार्ताकारों और नौकरशाहों से अलग एक और रास्ता विकसित करना चाहिए।
- Fixed firmly at the highest **political levels**, it would focus on bigger picture **geostrategic issues** such as **economic security**, **defence cooperation**, and a **common agenda for space**, emerging **technology**, and critical industry sectors such as **pharmaceuticals**.
राजनीतिक उच्चतम स्तरों पर दृढ़ रूप से स्थापित, यह आर्थिक सुरक्षा, रक्षा सहयोग, और अंतरिक्ष, उभरती प्रौद्योगिकियां, और महत्वपूर्ण उद्योग क्षेत्रों जैसे दवाइयों के लिए सामान्य एजेंडे पर ध्यान केंद्रित करेगा।

Geopolitical Realities

भू-राजनीतिक वास्तविकताएँ

- On the **geopolitical level**, Europe was frustrated with India's response to **Russia's invasion of Ukraine** and its continued close ties with **Russia**.
भू-राजनीतिक स्तर पर, यूरोप को भारत की रूस के यूक्रेन पर आक्रमण पर प्रतिक्रिया और रूस के साथ इसके निरंतर घनिष्ठ संबंधों से निराशा थी।
- These ties are **historic**. Conversely, India has broad **rivalry with China**, despite cooperation through the **BRICS group** and a substantial trading partnership.
ये संबंध ऐतिहासिक हैं। इसके विपरीत, भारत का चीन के साथ व्यापक प्रतिद्वंद्विता है, हालांकि ब्रिक्स समूह और एक महत्वपूर्ण व्यापारिक साझेदारी के माध्यम से सहयोग है।
- As a growing economy, I can understand why India would not want to be sucked into power competition as the world divides into democratic and autocratic blocs.
एक बढ़ती हुई अर्थव्यवस्था के रूप में, मैं समझ सकता हूँ कि क्यों भारत लोकतांत्रिक और



अधिन्यायकवादी ब्लॉकों में दुनिया के विभाजन के रूप में शक्ति प्रतियोगिता में शामिल नहीं होना चाहता।

- However, fundamentally, India is a **democracy**, and its entanglement with **Moscow and Beijing** is unnatural.

हालांकि, मूल रूप से, भारत एक लोकतंत्र है, और इसका माँस्को और बीजिंग के साथ उलझाव अप्राकृतिक है।

- In the same vein, India's accusations of **double standards** from Europe are not without substance.

इसी संदर्भ में, भारत द्वारा यूरोप से दोहरा मानक लगाए जाने के आरोपों में कोई संदेह नहीं है।

- We cannot demand that India severs all ties with **Russia** without also addressing our own **economic dependence on China**.

हम भारत से यह नहीं मांग सकते कि वह रूस के साथ सभी संबंध तोड़े बिना, साथ ही अपने चीन पर आर्थिक निर्भरता का भी समाधान करे।

A Restart in Relations

संबंधों में फिर से शुरुआत

- A restart in relations should start with a common assessment that **Russia and China** — with their '**No Limits**' partnership — are both a **threat to the global democratic world**, which includes **India, Europe**, and the **United States**.

संबंधों में फिर से शुरुआत एक सामान्य मूल्यांकन से होनी चाहिए कि रूस और चीन — अपनी 'बिना सीमा वाली' साझेदारी के साथ — वैश्विक लोकतांत्रिक दुनिया के लिए एक खतरा हैं, जिसमें भारत, यूरोप, और संयुक्त राज्य अमेरिका शामिल हैं।

- What happens in the **Atlantic** affects the **Indo-Pacific** and vice versa. **अटलांटिक** में जो कुछ भी होता है, वह **इंडो-पैसिफिक** को प्रभावित करता है और इसके विपरीत भी।
- On this basis, we should focus on a series of practical measures to break down barriers to **trade and investment**, while strengthening our joint **security**, including **economic security**.

इस आधार पर, हमें व्यापार और निवेश की बाधाओं को तोड़ने के लिए कुछ व्यावहारिक उपायों पर ध्यान केंद्रित करना चाहिए, जबकि हमारी संयुक्त सुरक्षा को मजबूत करना चाहिए, जिसमें आर्थिक सुरक्षा भी शामिल है।

- This will include reducing **dependencies on China** in areas such as **critical raw materials** and developing new **supply chains**, with Europe seeing **India as a Trusted Partner**.

इसमें चीन पर निर्भरता को कम करना शामिल होगा, जैसे कि महत्वपूर्ण कच्चे माल और नई आपूर्ति श्रृंखलाओं का विकास, जिसमें यूरोप भारत को एक विश्वसनीय साझेदार के रूप में देखेगा।

Defence and Trade

रक्षा और व्यापार



- In **defence**, India and the **U.S.** already enjoy strong defence cooperation, with India being America's '**Major Defence Partner**' and a member of the '**Quad**' — sometimes referred to as the '**Asia-Pacific NATO**'.

रक्षा में, भारत और यू.एस. पहले से ही मजबूत रक्षा सहयोग का आनंद ले रहे हैं, जिसमें भारत अमेरिका का '**प्रमुख रक्षा साझेदार**' है और '**क्वाड**' का सदस्य है – जिसे कभी-कभी 'एशिया-प्रशांत नाटो' कहा जाता है।

- **Europe** should support the continued development of this security alliance to give India more **security guarantees**.

यूरोप को इस सुरक्षा गठबंधन के निरंतर विकास का समर्थन करना चाहिए ताकि भारत को अधिक सुरक्षा गारंटी मिल सके।

- **EU-India defence discussions** have increased but should accelerate to a **high political level** as Europe looks to bring much-needed **investment** into our industries, which can also offer India better **weapons** than Russia.

ईयू-भारत रक्षा वार्ताएँ बढ़ी हैं, लेकिन इन्हें राजनीतिक उच्चतम स्तर तक बढ़ाना चाहिए क्योंकि यूरोप हमारी उद्योगों में आवश्यक निवेश लाने की कोशिश कर रहा है, जो भारत को रूस से बेहतर हथियार भी प्रदान कर सकती हैं।

- The EU's new dedicated **Defence Commissioner** should visit India at the earliest opportunity and develop more collaboration, in defence and in **space**, where both the **EU** and **India** have ambitious plans.

ईयू के नए समर्पित रक्षा आयुक्त को भारत का दौरा करना चाहिए और रक्षा और अंतरिक्ष में अधिक सहयोग विकसित करना चाहिए, जहाँ ईयू और भारत दोनों के पास महत्वाकांक्षी योजनाएँ हैं।

EU-India Trade and Technology Council (TTC)

ईयू-भारत व्यापार और प्रौद्योगिकी परिषद (टीटीसी)

- **India** and the **EU** have in place a **Trade and Technology Council (TTC)** to mirror a similar council with the **Biden administration**.

भारत और ईयू के पास एक व्यापार और प्रौद्योगिकी परिषद (टीटीसी) है, जो बाइडन प्रशासन के समान परिषद का प्रतिरूप है।

- Whether the **EU-U.S. TTC** survives President **Donald Trump** is unclear, but the **EU-India Council** has not reached its potential, especially in coordinating a **technology agenda**.

यह अस्पष्ट है कि ईयू-यू.एस. टीटीसी राष्ट्रपति डोनाल्ड ट्रम्प के बाद जीवित रहता है या नहीं, लेकिन ईयू-भारत परिषद अपनी क्षमता तक नहीं पहुँच पाई है, विशेष रूप से प्रौद्योगिकी एजेंडा का समन्वय करने में।

- Here, we can also draw inspiration from **India's ties with the U.S.**, where the **U.S.-India initiative on Critical and Emerging Technology (iCET)**; iCET is promoting collaboration at the **National Security Adviser level**.

यहाँ, हम भारत के अमेरिका से संबंधों से प्रेरणा ले सकते हैं, जहाँ यू.एस.-भारत की महत्वपूर्ण और



उभरती प्रौद्योगिकी (iCET) पहल है; iCET राष्ट्रीय सुरक्षा सलाहकार स्तर पर सहयोग को बढ़ावा दे रहा है।

Emerging Technology Challenge

उभरती प्रौद्योगिकी की चुनौती

- The **Australian Strategic Policy Institute** illustrates the scale of the challenge. It tracks the top **64 emerging technologies**. In **57** of them, **China** is winning the global race. The **U.S.** is hot on its heels.
ऑस्ट्रेलियाई रणनीतिक नीति संस्थान चुनौती के स्तर को स्पष्ट करता है। यह शीर्ष **64 उभरती प्रौद्योगिकियों** का पालन करता है। उनमें से **57** में, **चीन** वैश्विक दौड़ में जीत रहा है। **यू.एस.** उसकी नज़र में है।
- However, **India** is also emerging as a key centre of **global research innovation**, with many other **European countries** also still in the running.
हालांकि, **भारत** भी वैश्विक शोध नवाचार का एक महत्वपूर्ण केंद्र बनकर उभर रहा है, और कई अन्य **यूरोपीय देश** भी अभी भी दौड़ में हैं।
- Individually, we are doing okay in this **existential race**, but by combining forces, the **free world** can jump ahead to lead the world in all emerging technology, from **quantum computing** to **advanced biotech**.
व्यक्तिगत रूप से, हम इस **आस्तित्विक दौड़** में ठीक कर रहे हैं, लेकिन बलों को मिलाकर, **मुक्त दुनिया** सभी उभरती प्रौद्योगिकी में दुनिया का नेतृत्व करने के लिए आगे बढ़ सकती है, **क्वांटम कंप्यूटिंग** से लेकर **उन्नत बायोटेक** तक।
- We must not hand victory to **China**.
हमें **चीन** को विजय नहीं सौंपनी चाहिए।

In Perspective

परिप्रेक्ष्य में

- **Europe** and **India** should focus on a far more practical relationship built on tangible connections, including stronger **people-to-people ties**.
यूरोप और **भारत** को एक अधिक **व्यावहारिक संबंध** पर ध्यान केंद्रित करना चाहिए, जो **ठोस जनता से जनता** के संबंधों पर आधारित हो।
- For **Europe**, the benefits are obvious: **India** will become the world's third largest **economy** in the next decade, at a time when **European global GDP share** continues to fall.
यूरोप के लिए, लाभ स्पष्ट हैं: **भारत** अगले दशक में दुनिया की तीसरी सबसे बड़ी **अर्थव्यवस्था** बन जाएगा, जबकि **यूरोपीय वैश्विक जीडीपी शेयर** गिरता जा रहा है।
- But there is a wider prize: forming an **alliance of democracies** that has **India** at its core.
लेकिन एक और बड़ा पुरस्कार है: एक **लोकतंत्रों का गठबंधन** बनाना जिसमें **भारत** उसके केंद्र में हो।



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- If **Europe** wants to anchor **India** in that alliance, we need to change our approach to the **subcontinent**.

यदि **यूरोप** उस गठबंधन में **भारत** को स्थिर करना चाहता है, तो हमें **उपमहाद्वीप** के प्रति अपने दृष्टिकोण में बदलाव करना होगा।

- That does not mean brushing differences or difficulties under the table. **India** has many challenges to its **democracy**, but so does **Europe**.

इसका मतलब यह नहीं है कि हम भेदभाव या कठिनाइयों को छिपा दें। **भारत** के लोकतंत्र को कई चुनौतियाँ हैं, लेकिन **यूरोप** के पास भी हैं।

- We should seek to address them together. **Europe**, **India**, and the **United States** are individually powerful, but, together, we are unstoppable against the united **autocrats**.

हमें इन समस्याओं को एक साथ हल करने की कोशिश करनी चाहिए। **यूरोप**, **भारत**, और **संयुक्त राज्य अमेरिका** व्यक्तिगत रूप से शक्तिशाली हैं, लेकिन, एक साथ, हम **संयुक्त तानाशाहों** के खिलाफ अजेय हैं।

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GS Paper III: S&T

Gates in the sky

Docking technology allows ISRO to think of longer space flights

In December 30, 2024, the Indian Space Research Organisation (ISRO) launched its PSLV-C60 mission. Its primary payload was a pair of satellites for the Space Docking Experiment, or SpaDeX, to demonstrate orbital rendezvous and docking. The ability to execute it in orbit is an essential stepping stone to more complex missions. The launch was also hailed as ISRO ending the year on a high, but SpaDeX reminded us that sophisticated spaceflight missions care little for arbitrary deadlines. The satellites successfully docked on January 16 after a few abortive attempts. They were expected to dock on January 7, which ISRO postponed to January 9, then brought them close without docking on January 12 in an apparent data-taking effort. It nixed the January 9 attempt after the satellites were found to have drifted more than expected, prompting measures to arrest the displacement and reinitialise the experiment. Once docked, ISRO began tests to verify if the satellites could exchange electric power, then undock and separate, followed by testing their own payloads that would be spread over two years. The C60 mission also launched the fourth stage of the rocket as an orbital platform. It carried 24 payloads from various ISRO centres and private enterprises testing various technologies. The Vikram Sarabhai Space Centre's Compact Research module for Orbital Plant Studies was able to have cowpea seeds germinate in orbit, capturing the popular imagination.

Docking allows spacefaring components to be launched separately and assembled in space to form a larger module. This allows a space agency to plan interplanetary missions whose spacecraft are heavier than what the heaviest rockets can launch. Docking is thus a symbolic gateway to new opportunities, with the Chandrayaan-4 lunar sample return mission being a good example. In anticipation, ISRO loaded the SpaDeX satellites with enough fuel for multiple tries and also continuously collected data. Its own nervousness became evident, too: after the first two attempts, it backed down from its promise to live-stream the successful one. Docking technology has become desirable thanks to the perceived inevitability of long-duration spaceflight. The pressure to lower costs imposed by, say, crewed missions to Mars or space-mining operations has rendered ideas such as in-space satellite servicing and orbital resupply platforms, both of which require docking, more lucrative. ISRO plans to start launching the 'Bharatiya Antariksh Station' (BAS) later this decade. As it embarks on a new phase of operations, with V. Narayanan as its new chairman, ISRO should also describe a coherent vision for the ex ante utility expected of BAS. Without this context, the larger pieces of the Indian space programme and their purpose relative to other countries' plans seem adrift.

Gates in the sky

आकाश में द्वार

On December 30, 2024, the Indian Space Research Organisation (ISRO) launched its PSLV-C60 mission, with its primary payload being two satellites for the Space Docking Experiment (SpaDeX) to demonstrate orbital rendezvous and docking.

30 दिसंबर 2024 को भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) ने अपना PSLV-C60 मिशन लॉन्च किया, जिसका मुख्य पेलोड स्पेस डॉकिंग एक्सपेरिमेंट (SpaDeX) के लिए दो सैटेलाइट्स थे, जो ऑर्बिटल रेंडेज़वस और डॉकिंग का प्रदर्शन करने के लिए था।

- The satellites successfully docked on **January 16** after a few abortive attempts.

सैटेलाइट्स ने कुछ असफल प्रयासों के बाद **16 जनवरी** को सफलतापूर्वक डॉकिंग की।

- Initially, the docking was expected on **January 7**, but it was postponed to **January 9**, followed by a close approach without docking on **January 12** for data collection.

डॉकिंग की शुरुआत में तारीख **7 जनवरी** तय की गई थी, लेकिन इसे **9 जनवरी** तक स्थगित किया गया, और **12 जनवरी** को बिना डॉकिंग के डेटा संग्रह के लिए करीब लाया गया।

- ISRO nixed the **January 9** attempt after detecting more-than-expected drift between the satellites, prompting measures to arrest displacement and reinitialize the experiment.

9 जनवरी के प्रयास को इसरो ने सैटेलाइट्स के बीच अपेक्षा से अधिक ड्रिफ्ट का पता चलने के बाद रद्द कर दिया, जिसके बाद विस्थापन को रोकने और प्रयोग को फिर से शुरू करने के उपाय किए गए।

- Post docking, ISRO began tests to verify **electric power exchange**, undocking, and payload separation. These tests will extend over **two years**.



- डॉकिंग के बाद, इसरो ने इलेक्ट्रिक पावर एक्सचेंज, अनडॉकिंग, और पेलोड के पृथक्करण को सत्यापित करने के लिए परीक्षण शुरू किए। ये परीक्षण दो वर्षों तक जारी रहेंगे।
- The **PSLV-C60 mission** also launched the **fourth stage of the rocket** as an orbital platform carrying **24 payloads** from ISRO centers and private enterprises. **PSLV-C60 मिशन** ने रॉकेट के चौथे चरण को एक ऑर्बिटल प्लेटफॉर्म के रूप में भी लॉन्च किया, जिसमें **24 पेलोड** इसरो केंद्रों और निजी उद्यमों के थे।
 - Among the payloads, the **Vikram Sarabhai Space Centre's Compact Research Module** facilitated the germination of **cowpea seeds** in orbit, capturing public attention. पेलोड्स में, **विक्रम साराभाई अंतरिक्ष केंद्र का कॉम्पैक्ट रिसर्च मॉड्यूल** ने कक्षा में कौपी बीजों का अंकुरण किया, जिससे जनता का ध्यान आकर्षित हुआ।

Significance of Docking Technology

डॉकिंग तकनीक का महत्व

- Docking allows spacefaring components to be launched separately and assembled in space to form a **larger module**, enabling heavier interplanetary missions beyond the capacity of the heaviest rockets. डॉकिंग से अंतरिक्ष यान के घटकों को अलग से लॉन्च किया जा सकता है और अंतरिक्ष में बड़े मॉड्यूल बनाने के लिए असेंबल किया जा सकता है, जिससे सबसे भारी रॉकेट की क्षमता से परे भारी इंटरप्लानेटरी मिशन संभव हो पाते हैं।
- It is a **symbolic gateway** to new opportunities, such as the **Chandrayaan-4 lunar sample return mission**. यह नए अवसरों का प्रतीकात्मक द्वार है, जैसे कि चंद्रयान-4 लूनर सैंपल रिटर्न मिशन।
- ISRO plans to start launching the **Bharatiya Antariksh Station (BAS)** later this decade. इसरो इस दशक के अंत में **भारतीय अंतरिक्ष स्टेशन (BAS)** लॉन्च करने की योजना बना रहा है।
- Docking technology has become essential for **long-duration spaceflight**, addressing the pressure to lower costs for missions such as **crewed Mars expeditions** and **space-mining operations**. डॉकिंग तकनीक लंबी अवधि के अंतरिक्ष यान के लिए आवश्यक हो गई है, जैसे कि मानवयुक्त मंगल अभियानों और स्पेस-माइनिंग ऑपरेशन्स की लागत को कम करने का दबाव।
- The **SpaDeX satellites** were equipped with enough fuel for multiple tries, and ISRO continuously collected data, underscoring its commitment to learning and adaptation. **SpaDeX सैटेलाइट्स** को कई प्रयासों के लिए पर्याप्त ईंधन से लैस किया गया था, और इसरो ने लगातार डेटा एकत्र किया, जो इसकी सीखने और अनुकूलन की प्रतिबद्धता को दर्शाता है।

Future Directions for ISRO

इसरो के लिए भविष्य की दिशा

- With **V. Narayanan** as its new chairman, ISRO is entering a new operational phase and should articulate a **coherent vision** for the utility of BAS.



वी. नारायणन के नए अध्यक्ष के रूप में, इसरो एक नए परिचालन चरण में प्रवेश कर रहा है और उसे BAS की उपयोगिता के लिए स्पष्ट दृष्टि व्यक्त करनी चाहिए।

- Without such context, the larger pieces of the Indian space program and their purpose relative to other countries' plans may seem **adrift**.

बिना इस संदर्भ के, भारतीय अंतरिक्ष कार्यक्रम के बड़े हिस्से और अन्य देशों की योजनाओं के सापेक्ष उनका उद्देश्य अस्पष्ट लग सकता है।

Open era

The Australian Open this year marks more than the start of a new season

Coming as it does at the beginning of a brand new tennis season, the Australian Open is never short of fresh and intriguing storylines. The 2025 edition, which started on Sunday, is no exception. Of interest will be Novak Djokovic's quest for a record-breaking 25th Major, Jannik Sinner's title defence amidst a doping cloud, Carlos Alcaraz's search for a maiden trophy in Melbourne and Aryna Sabalenka's desire to make it a hat-trick Down Under. With his greatest rivals Roger Federer and Rafael Nadal retired, Djokovic is the lone representative from the Big Three era. The 37-year-old, a record 10-time champion in Australia, has not won an ATP Tour-level title since November 2023 and will be looking to three-time Slam winner Andy Murray, who is now his coach, for some fresh solutions as he enters the last leg of his career. Sinner, who had an otherwise impeccable 2024, awaits an April hearing at the Court of Arbitration for Sport (CAS) after the World Anti-Doping Agency appealed his acquittal by the International Tennis Integrity Agency (ITIA) over two failed dope tests. Alcaraz, at 21, can become the youngest man to win a career Grand Slam (acquiring all four Majors at least once) while Sabalenka, with her fourth Slam, can cement her position as the best hard-court player in the world.

With Sinner and Alcaraz having split 2024's Majors equally, the onus was on Alexander Zverev and Daniil Medvedev to ensure that their generation – sandwiched between the times of the Big Three and the Sinner-Alcaraz duopoly – is not squeezed out in tennis' all-new era. But Medvedev lost on Thursday, leaving Zverev with the responsibility of maintaining their position at the high table. Though the rungs are not as clear cut among women, there is intense jostling at the top among the trinity of Sabalenka, Iga Swiatek and Coco Gauff. Swiatek is a five-time Slam champion but has gone past the fourth round at Melbourne Park just once (2022, semifinal). The 23-year-old also has her aura dimmed after accepting a month's ban in November for a positive dope test. For the United States' Gauff, a lack of consistency has been her bane. But if she can carry her strong recent form – WTA Finals crown in November 2024 and United Cup triumph earlier this January – she will be a real force. Unfortunately, Indians are never part of these conversations. Sumit Nagal is already out, losing in the first round, and so are men's doubles practitioners Rohan Bopanna – who at the 2024 Australian Open became the oldest man to be No.1 and win a Major – and Yuki Bhambri.

Open Era

ओपन एरा

- The **Australian Open 2025** began on **Sunday**, marking the start of a new tennis season with intriguing storylines.

ऑस्ट्रेलियन ओपन 2025 की शुरुआत **रविवार** को हुई, जो एक नए टेनिस सीजन की शुरुआत के साथ आकर्षक कहानियाँ लेकर आया।

- **Novak Djokovic** is chasing a **record-breaking 25th Major**, while **Jannik Sinner** defends his title amidst a **doping cloud**.

नोवाक जोकोविच अपने **रिकॉर्ड-तोड़ 25वें मेजर** का पीछा कर रहे हैं, जबकि **जेनिक सिनर** डोपिंग विवाद के बीच अपने खिताब की रक्षा कर रहे हैं।

- **Carlos Alcaraz**, at **21**, aims for his first **Melbourne** trophy, and **Aryna Sabalenka** seeks a **third consecutive Australian Open title**.

कार्लोस अल्कराज, **21 वर्ष** की उम्र में, अपने पहले **मेलबर्न ट्रॉफी** की तलाश में हैं, और **आर्यना सबालेन्का** लगातार तीसरी **ऑस्ट्रेलियन ओपन खिताब** जीतना चाहती हैं।

- With **Roger Federer** and **Rafael Nadal** retired, Djokovic stands as the last of the **Big Three**.

रोजर फेडरर और **राफेल नडाल** के रिटायर होने के बाद, जोकोविच **बिग थ्री** के अंतिम खिलाड़ी के रूप में खड़े हैं।

- **Djokovic**, a **10-time Australian Open champion**, last won an ATP title in **November 2023** and now has **Andy Murray** as his coach.

जोकोविच, जो **10 बार** के **ऑस्ट्रेलियन ओपन चैंपियन** हैं, **नवंबर 2023** में अपना आखिरी एटीपी खिताब जीता था और अब उनके कोच **एंडी मरे** हैं।

- **Jannik Sinner**, with an impeccable **2024**, faces an **April hearing** at the **Court of Arbitration for Sport (CAS)** over doping allegations.

जेनिक सिनर, जिनका **2024** शानदार रहा, डोपिंग आरोपों को लेकर **कोर्ट ऑफ आर्बिट्रेशन फॉर स्पोर्ट्स (CAS)** में **अप्रैल सुनवाई** का सामना करेंगे।

- **Carlos Alcaraz** could become the **youngest man** to win a **career Grand Slam**.

कार्लोस अल्कराज करियर **ग्रेंड स्लैम** जीतने वाले सबसे **युवा खिलाड़ी** बन सकते हैं।



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- **Aryna Sabalenka**, aiming for her **fourth Slam**, seeks to establish herself as the **best hard-court player**.
आर्यना सबालेंका, अपने चौथे स्लैम की ओर बढ़ते हुए, खुद को सर्वश्रेष्ठ हार्ड-कोर्ट खिलाड़ी के रूप में स्थापित करना चाहती हैं।
- **Sinner and Alcaraz** shared **2024's Majors**, while **Daniil Medvedev** lost early in **2025**, leaving **Alexander Zverev** to represent their generation.
सिनर और अल्कराज ने **2024 के मेजर्स** को साझा किया, जबकि **डेनियल मेदवेदेव** ने **2025** में जल्दी हार का सामना किया, और उनकी पीढ़ी का प्रतिनिधित्व करने की जिम्मेदारी **अलेक्जेंडर ज़वेरेव** पर है।
- In women's tennis, **Sabalenka, Iga Swiatek**, and **Coco Gauff** compete fiercely.
महिलाओं के टेनिस में, **सबालेंका, इगा स्विएटेक**, और **कोको गॉफ** के बीच कड़ी प्रतिस्पर्धा है।
- **Iga Swiatek**, a **five-time Slam champion**, accepted a **one-month ban** in **November 2024** due to a doping violation.
इगा स्विएटेक, जो पांच बार की स्लैम चैंपियन हैं, ने नवंबर 2024 में डोपिंग उल्लंघन के कारण एक महीने के प्रतिबंध को स्वीकार किया।
- **Coco Gauff**, with her **WTA Finals victory (November 2024)** and **United Cup win (January 2025)**, looks strong but struggles with consistency.
कोको गॉफ, जिन्होंने **डब्ल्यूटीए फाइनल्स (नवंबर 2024)** और **यूनाइटेड कप (जनवरी 2025)** जीता, मजबूत दिख रही हैं लेकिन निरंतरता की कमी से जूझ रही हैं।
- For **Indian tennis**, **Sumit Nagal** exited in the **first round**, while **Rohan Bopanna** and **Yuki Bhambri** are also out.
भारतीय टेनिस में, **सुमित नागल** पहले दौर में बाहर हो गए, जबकि **रोहन बोपन्ना** और **युकी भांबरी** भी बाहर हो गए।
- **Rohan Bopanna**, at the **2024 Australian Open**, became the **oldest man** to be **No.1** and win a **Major** in men's doubles.
रोहन बोपन्ना ने **2024 ऑस्ट्रेलियन ओपन** में पुरुष युगल में नंबर 1 और मेजर जीतने वाले सबसे उमदराज व्यक्ति का रिकॉर्ड बनाया।

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The impacts of rupee weakening

The sharp devaluation of the Indian rupee is driven by capital outflows, higher import costs, and a policy shift by the RBI; structural issues such as rising domestic prices and real exchange rate appreciation further complicate the recovery of net exports

GS Paper III: National Currency
 ECONOMIC NOTES

Zico Dasgupta

The Indian rupee recently registered a sharp devaluation with respect to the dollar after remaining stable for over two years or so. What explains such a phenomenon? What are the implications? This article aims to address these issues by discussing India's exchange rate policy and highlighting a few structural constraints in the Indian economy in the recent period.

Exchange rate regimes

The nominal exchange rate is the price of buying one unit of foreign currency in terms of domestic currency. The way in which the nominal exchange rate changes depends both on the demand-supply conditions of the foreign exchange market and the exchange rate policy of the central bank.

The real exchange rate is the relative price of foreign goods in terms of the domestic currency with respect to the prices of the domestic goods. It describes how cheap or costly domestic goods are concerning the foreign goods.

The demand and supply conditions of the foreign exchange market depend on the flows of the current account and capital account. The demand for foreign currency would rise if the sum of net current account and capital account flows falls, whereas the supply of foreign currency would rise if the sum increases. The net current account flows are largely influenced by the net exports, whereas net capital account flows are influenced by the net flows of foreign investments. The lower the net exports and greater the capital outflow, the greater would be demand for foreign currency and vice-versa.

Depending on how the central bank responds to the demand and supply conditions in the foreign exchange market, there can be broadly three kinds of exchange rate policy frameworks – fixed exchange rate, floating exchange rate, and managed-floating exchange rate regimes.

In the fixed exchange rate regime, the central bank responds to the higher demand for foreign currency entirely by selling (decumulating) foreign exchange reserves (and vice versa), while keeping the nominal exchange rate fixed at a predetermined level.

In the floating exchange rate regime, the central bank responds to higher demand of foreign currency entirely by devaluing the domestic foreign currency (making foreign currency costlier in terms of domestic currency) and vice versa, while keeping the level of foreign exchange reserves unchanged.

In the managed-floating exchange rate regime, the central bank responds to higher demand for foreign currency both by selling foreign currency as well as devaluing the domestic foreign currency.

Barring a few brief episodes, India has largely pursued a managed float exchange rate regime in the last three decades. The last decade has been characterised by the Reserve Bank of India (RBI) pursuing a particular variant of managed float exchange rate regime, where its response under excess demand conditions in the foreign exchange market has been qualitatively different from excess supply conditions. Under excess demand conditions in the foreign exchange market, the RBI has simultaneously devalued the domestic currency and decumulated its foreign exchange reserves. However, under excess supply conditions, the RBI accumulated foreign

exchange reserves while largely resisting appreciation of the nominal exchange rate to avoid appreciation of the real exchange rate or the worsening of export competitiveness. By implication, while episodes of net capital outflow were associated with depreciation of the nominal exchange rate, the episodes of net capital inflow did not involve appreciation of the exchange rate to the same extent. This asymmetry in the behaviour of the nominal exchange rate led to an overall devaluation of the rupee throughout the 2010s decade as reflected in **Figure 1**.

In the post-COVID period, particularly between the latter half of 2022 and November 2024, the RBI momentarily shifted its policy stance to a regime that closely resembles the fixed exchange rate regime. This is reflected by the flat segment of the dollar exchange rate in **Figure 1** during the relevant period. Deterioration of the current account deficit and capital outflow during this period were met by selling foreign exchange reserves while holding the nominal exchange rate more or less at the same level. The sharp devaluation of the rupee in the last month or so hints towards RBI returning to its earlier regime of the managed float exchange rate that it followed during the 2010s. Responding to greater capital outflow and a rise in imports amid higher crude oil prices, the RBI allowed the rupee to depreciate with the objective of putting less strain on the foreign exchange reserves.

Implications of devaluation

Depreciation of the nominal exchange rate can have at least two macroeconomic implications – positive and adverse. The first route involves the real exchange rate channel, whereas the second route involves the prices of domestic goods.

Cheapening domestic goods opens up the possibility of increasing net exports. For example, if the nominal dollar exchange rate is \$85, the dollar price of foreign goods is \$100 and the rupee price of domestic goods is ₹1,000, then the prices of foreign goods in terms of the domestic currency would be 0.85 and the real exchange rate would be 0.85.

First, a depreciation in the nominal exchange rate can positively influence net exports and output if two conditions hold simultaneously: (i) the net exports respond positively to the real exchange rate and (ii) depreciation in the nominal exchange rate is associated with depreciation in the real exchange rate. A rise in domestic prices at a given nominal exchange rate would lead to an appreciation of the real exchange rate by making domestic goods costlier, whereas a depreciation of the nominal exchange rate at unchanged domestic prices would lead to a depreciation of the real exchange rate by making domestic goods cheaper with respect to foreign goods.

Second, a depreciation in the nominal exchange rate can increase domestic prices by increasing the variable cost of firms and putting a greater squeeze on real income. In oligopolistic markets, firms typically set their prices by setting a markup over their variable cost. Since the variable cost of firms typically includes the cost of imported raw materials, nominal exchange rate depreciation would increase the variable cost of firms by increasing their effective cost of imported raw materials. The consequent rise in variable costs leads to higher prices when the firms pass on the burden of higher raw material costs to the final consumers.

The central constraint that emerged in the Indian economy since the latter half of the 2010s, however, was that the condition for the positive effect of

The falling rupee

The recent sharp devaluation of the Indian rupee, after a period of stability, raises important questions about the country's exchange rate policy and its broader economic implications

Chart 1: Chart shows the dollar exchange rate in India (in ₹)



Chart 2: Chart shows the index values for the nominal effective exchange rate (NEER) and the real effective exchange rate (REER)

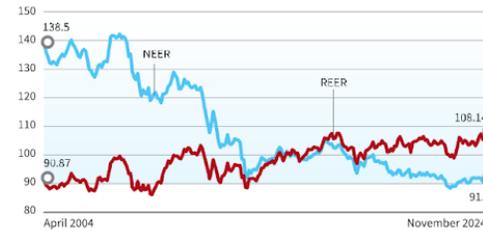


Chart 3: Chart shows the countrywise difference in NEER and REER indices in November 2024 compared to January 2019

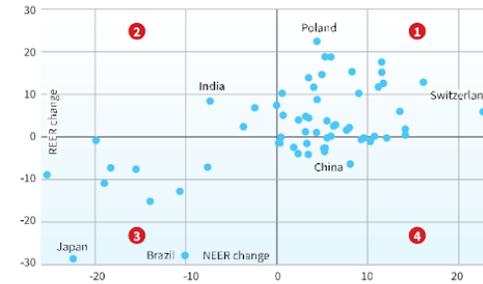


Chart 4: Chart shows the ratio of nominal sales value to that of nominal variable cost for non-financial corporate firms



Source: RBI, CME, BIS

nominal exchange rate depreciation ceased to hold.

The recent constraint

The period since the mid-2010s, particularly 2019 has been characterised by the growing divergence between the nominal and the real exchange rate. **Figure 2** shows this divergence by plotting the trend in the nominal effective exchange rate (NEER) and the real effective exchange rate (REER). These indices reflect the weighted average

exchange rate of India with respect to its multiple trade partners. The way in which these indices are defined, any increase or positive change of these indicators implies appreciation, and any decrease or negative change implies depreciation. After moving in the same direction till the mid-2010s, they started moving in opposite directions with the real exchange rate registering an appreciation despite a depreciation in the nominal exchange rate. Such a phenomenon distinguishes India from the bulk of the

other countries. **Figure 3** shows this by depicting the exchange rate movements of 62 countries using data from the Bank of International Settlements (BIS). The horizontal and the vertical axis respectively measure the change in the indices of NEER and REER between January 2019 and November 2024. The vertical zero-line marks no change in the NEER, while the horizontal zero-line marks no change in the REER.

Depending on how both NEER and REER changed during this period, **Figure 3** can be divided into four boxes or categories. Category 1 includes countries where both nominal and real exchange rates registered appreciation. Category 2 includes countries where the real exchange rate appreciated despite the depreciation in the nominal exchange rate. Category 3 countries are those which registered depreciation in both nominal and real exchange rates. Category 4 countries are those which registered depreciation in the real exchange rate despite the appreciation in the nominal exchange rate.

The figure shows at least two important features of the global economy during this period. First, the majority of countries have been located in categories 1 and 3, indicating that the nominal and real exchange rates have moved in the same direction for most countries. Second, India parted company with most countries since 2019, as it is located in category 2.

Such appreciation of the real exchange rate in India despite a depreciation of the nominal exchange rate indicates that the latter has been associated with countervailing rise in domestic prices. One explanation for such a rise in domestic prices can be located in the recent increase in the markup of non-financial firms as shown in **Figure 4**.

The markup can be estimated as the ratio between the output price and the variable cost per unit of output or the ratio between the nominal value of sales and the total variable cost. **Figure 4** shows the trend in the markup for 1908 sample firms in the Centre for Monitoring Indian Economy (CMIE) Prowess database which has provided information on their variable cost in all the years in the sample period. The variable costs in this estimation include the expenses on raw materials, packaging, power, and fuel, compensation to employees, indirect taxes, distribution, and outsourcing. After registering a decline till the mid-2010s, the markup reversed its trend and started rising. Since prices are formed by a markup over variable costs, any rise in markup would push up domestic prices at any given level of variable costs and nominal exchange rate.

The policy question

While the weakening of the rupee puts pressure on the prices, the delinking of the real exchange rate from the nominal exchange rate has posed additional constraints on the recovery of net exports and the balance of payments adjustment mechanism. This leads to the larger questions for the exchange rate policy – should India return to the earlier strategy of the 2010s, or does it require a new and explicit exchange rate policy framework? What should the exchange rate policy aim to achieve?

The response of the RBI in the post-COVID period has appeared somewhat arbitrary, as it has frequently shuffled its policy stance without providing adequate explanation. The recent challenges bring forth the need to address these questions in a more systematic way.

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Impacts of Rupee Weakening

रुपये की कमजोरी के प्रभाव

The sharp devaluation of the Indian rupee is driven by capital outflows, higher import costs, and a policy shift by the RBI. Structural issues such as rising domestic prices and real exchange rate appreciation further complicate the recovery of net exports.

भारतीय रुपये का तेज अवमूल्यन पूंजी प्रवाह, उच्च आयात लागत, और आरबीआई की नीतिगत बदलाव से प्रेरित है। घरेलू कीमतों में वृद्धि और वास्तविक विनिमय दर में प्रशंसा जैसे संरचनात्मक मुद्दे नेट निर्यात की वसूली को और जटिल बनाते हैं।

Exchange Rate Regimes

विनिमय दर व्यवस्थाएं

- The **nominal exchange rate** is the price of buying one unit of foreign currency in terms of domestic currency.
सांकेतिक विनिमय दर वह कीमत है, जिसमें घरेलू मुद्रा के संदर्भ में एक विदेशी मुद्रा इकाई खरीदी जाती है।
- The **real exchange rate** describes how cheap or costly domestic goods are concerning foreign goods.
वास्तविक विनिमय दर यह बताती है कि घरेलू वस्तुएं विदेशी वस्तुओं की तुलना में कितनी सस्ती या महंगी हैं।
- **Demand and supply** in the foreign exchange market depend on flows in the **current account** and **capital account**.
विदेशी मुद्रा बाजार में मांग और आपूर्ति, चालू खाता और पूंजी खाता के प्रवाह पर निर्भर करती है।
- India has largely pursued a **managed-floating exchange rate regime** in the last three decades.
भारत ने पिछले तीन दशकों में मुख्यतः प्रबंधित-तैरती विनिमय दर व्यवस्था अपनाई है।

Policy Shifts by RBI

आरबीआई द्वारा नीतिगत बदलाव

- During periods of **excess demand**, the RBI has allowed the rupee to **devalue** and **sell** foreign exchange reserves.
अधिक मांग की अवधि में, आरबीआई ने रुपये को मूल्यहासित होने दिया और विदेशी मुद्रा भंडार बेचा।



- In the **post-COVID period**, particularly between **2022 and November 2024**, the RBI shifted momentarily to a regime resembling a **fixed exchange rate**.

पोस्ट-कोविड अवधि, विशेषकर 2022 से नवंबर 2024 के बीच, आरबीआई ने स्थिर विनिमय दर जैसी व्यवस्था को अपनाया।

Implications of Devaluation

मूल्यहास के प्रभाव

- A **nominal exchange rate depreciation** can positively influence **net exports** if (i) net exports respond positively to the **real exchange rate** and (ii) domestic prices remain stable.
यदि (i) नेट निर्यात, वास्तविक विनिमय दर पर सकारात्मक प्रतिक्रिया करता है और (ii) घरेलू कीमतें स्थिर रहती हैं, तो सांकेतिक विनिमय दर में कमी का नेट निर्यात पर सकारात्मक प्रभाव हो सकता है।
- Depreciation can also increase **domestic prices** due to rising **import costs**, squeezing **real income**.
मूल्यहास, आयात लागत में वृद्धि के कारण घरेलू कीमतों को बढ़ा सकता है, जिससे वास्तविक आय कम हो जाती है।
- Firms in **oligopolistic markets** pass on the increased cost of imported raw materials to consumers, raising prices.
अल्पाधिकार बाजारों में कंपनियां आयातित कच्चे माल की बढ़ी हुई लागत को उपभोक्ताओं पर डाल देती हैं, जिससे कीमतें बढ़ जाती हैं।
- Since the latter half of the **2010s**, conditions for the **positive effects** of nominal depreciation have ceased to hold in the Indian economy.
2010 के दशक के उत्तरार्ध से, भारतीय अर्थव्यवस्था में सांकेतिक मूल्यहास के सकारात्मक प्रभावों की स्थितियां समाप्त हो गई हैं।

The Recent Constraint

हालिया बाधा

- The period since the mid-2010s, particularly **2019**, has been characterized by the growing divergence between the **nominal and real exchange rate**.
मध्य-2010 के दशक के बाद का समय, विशेष रूप से 2019, को सांकेतिक और वास्तविक विनिमय दर के बीच बढ़ते अंतराल से चिह्नित किया गया है।
- **Figure 2** shows this divergence by plotting the trend in the **nominal effective exchange rate (NEER)** and the **real effective exchange rate (REER)**.
चित्र 2 इस अंतराल को दर्शाता है, जिसमें सांकेतिक प्रभावी विनिमय दर (NEER) और वास्तविक प्रभावी विनिमय दर (REER) की प्रवृत्ति को दर्शाया गया है।
- These indices reflect the **weighted average exchange rate** of India with its multiple trade partners.



ये सूचकांक भारत और उसके विभिन्न व्यापारिक भागीदारों के भारत औसत विनिमय दर को दर्शाते हैं।

- Any **increase or positive change** in these indices implies **appreciation**, and any **decrease or negative change** implies **depreciation**.

इन सूचकांकों में वृद्धि या सकारात्मक परिवर्तन का अर्थ है मूल्यवृद्धि, और कमी या नकारात्मक परिवर्तन का अर्थ है मूल्यहास।

- After moving in the same direction till the **mid-2010s**, they started moving in opposite directions, with the **real exchange rate appreciating despite the depreciation in the nominal exchange rate**.

मध्य-2010 के दशक तक एक ही दिशा में चलने के बाद, वे विपरीत दिशाओं में बढ़ने लगे, जहां सांकेतिक विनिमय दर में गिरावट के बावजूद वास्तविक विनिमय दर बढ़ रही थी।

- **Figure 3** shows this divergence globally, using data from the **Bank of International Settlements (BIS)** for **62 countries** between **January 2019 and November 2024**.

चित्र 3 यह अंतराल वैश्विक स्तर पर दर्शाता है, जिसमें 62 देशों का जनवरी 2019 से नवंबर 2024 तक का डेटा अंतर्राष्ट्रीय निपटान बैंक (BIS) से लिया गया है।

- The **horizontal zero-line** represents **no change in NEER**, while the **vertical zero-line** represents **no change in REER**.

क्षैतिज शून्य रेखा NEER में कोई परिवर्तन नहीं को दर्शाती है, जबकि लंबवत शून्य रेखा REER में कोई परिवर्तन नहीं को दर्शाती है।

- **Category 1** includes countries where both **nominal and real exchange rates appreciated**, while **Category 2** includes those where **real exchange rates appreciated despite depreciation in nominal exchange rates**.

श्रेणी 1 में वे देश शामिल हैं, जहां सांकेतिक और वास्तविक विनिमय दर दोनों बढ़ी, जबकि श्रेणी 2 में वे देश हैं, जहां सांकेतिक विनिमय दर में गिरावट के बावजूद वास्तविक विनिमय दर बढ़ी।

- **India is located in Category 2**, distinguishing itself from most countries.

भारत श्रेणी 2 में स्थित है, जिससे यह अधिकांश देशों से अलग है।

The Policy Question

नीति का प्रश्न

- The weakening of the **rupee** increases pressure on prices, but the **delinking of real and nominal exchange rates** adds further constraints on net exports and balance of payments adjustments.

रुपये की कमजोरी कीमतों पर दबाव बढ़ाती है, लेकिन वास्तविक और सांकेतिक विनिमय दरों के अलगवा से शुद्ध निर्यात और भुगतान संतुलन में और बाधाएं उत्पन्न होती हैं।

- Should India revert to its **earlier strategy of the 2010s**, or adopt a **new and explicit exchange rate policy framework**?

क्या भारत को 2010 के दशक की पहले की रणनीति पर लौटना चाहिए, या नई और स्पष्ट विनिमय दर नीति ढांचे को अपनाना चाहिए?



- The **RBI's response** in the **post-COVID period** appears arbitrary, with frequent policy shifts and inadequate explanations.
कोविड के बाद की अवधि में RBI की प्रतिक्रिया मनमानी प्रतीत होती है, जिसमें बार-बार नीति में बदलाव और अपर्याप्त स्पष्टीकरण शामिल हैं।
- There is a growing need for a **systematic approach** to address these challenges.
इन चुनौतियों का समाधान करने के लिए **व्यवस्थित दृष्टिकोण** की आवश्यकता बढ़ रही है।

Singapore to help India's semiconductor industry

President Tharman Shanmugaratnam says Singapore and India are exploring opportunities for manufacturing semiconductor chips in the country in the 60th year of diplomatic relationship

GS Paper II:

India-Singapore

NEW DELHI

Singapore is exploring new initiatives such as manufacturing of semiconductors and building a semiconductor ecosystem in India and participating in the creation of a new generation of technological solutions, the city-state's President, Tharman Shanmugaratnam, said on Thursday.

The visiting dignitary recounted his 2022 visit to India as the Senior Minister of Singapore when he toured Assam and announced that this time he is focusing on Odisha.

"We will never forget India was one of the first countries to recognise Singapore's independence in 1965. It's a natural partnership between a small country - Singapore - and a very large country - India. In a whole range of areas, our business relationships are thriving," said Mr. Shanmugaratnam highlighting



Prime Minister Narendra Modi with Singapore President Tharman Shanmugaratnam at the Rashtrapati Bhavan. SUSHIL KUMAR VERMA

that Singapore has been the "largest investor in India for many years now".

Data corridor

"We are also exploring other initiatives in the digital space. We are exploring possibility of a data corridor between GIFT City and Singapore so that our financial institutions can exchange data on a safe and trusted basis," he said after the official welcome accorded to him at the fore-

court of the Rashtrapati Bhavan.

He mentioned the two sides were working in the areas such as renewable energy and spoke about India's "high ambition" for the eastern states such as Odisha and Assam.

The visiting President spoke about the "natural advantages" of the eastern States such as availability of natural resources and the desire among the people to develop in "logistics,

connectivity, and petrochemicals". "We are now on a new trajectory with India with the upgrade of our relations to a Comprehensive Strategic Partnership which was announced during Prime Minister Modi's last visit to Singapore in September last year. We are working on cooperating with advanced manufacturing and semiconductors - helping to build up a semiconductor ecosystem in India," the Singapore President said in his remarks to the media.

Later in the day, he and President Droupadi Murmu jointly launched the joint logo here to commemorate the 60th anniversary of the establishment of diplomatic relations between India and Singapore.

President Shanmugaratnam's visit is part of a series of exchanges that will take place during the year as both sides plan to celebrate the 60th anniversary through visits and events.



Singapore to help India's semiconductor industry

सिंगापुर भारत के सेमीकंडक्टर उद्योग की मदद करेगा

Singapore and India are exploring opportunities for manufacturing semiconductor chips in India in the 60th year of diplomatic relationship.

सिंगापुर और भारत भारत में सेमीकंडक्टर चिप्स के निर्माण के अवसर तलाश रहे हैं, जो राजनयिक संबंधों के 60वें वर्ष में हो रहा है।

- Singapore is working on **building a semiconductor ecosystem** in India and creating **next-generation technological solutions**, said President **Tharman Shanmugaratnam**.
सिंगापुर भारत में सेमीकंडक्टर इकोसिस्टम बनाने और अगली पीढ़ी के तकनीकी समाधान तैयार करने पर काम कर रहा है, ऐसा राष्ट्रपति थरमन शनमुगरत्नम ने कहा।
- During his 2022 visit to India as Senior Minister, Mr. Shanmugaratnam toured **Assam**, while his 2024 visit focuses on **Odisha**.
2022 में वरिष्ठ मंत्री के रूप में भारत की यात्रा के दौरान, श्री शनमुगरत्नम ने असम का दौरा किया, जबकि 2024 की यात्रा में उनका ध्यान ओडिशा पर है।
- India was one of the **first countries** to recognize **Singapore's independence in 1965**, highlighting the **natural partnership** between the two nations.
भारत उन पहले देशों में से एक था जिसने 1965 में सिंगापुर की स्वतंत्रता को मान्यता दी, जो दोनों देशों के बीच स्वाभाविक साझेदारी को दर्शाता है।
- Singapore has been the **largest investor in India** for many years.
सिंगापुर कई वर्षों से भारत में सबसे बड़ा निवेशक रहा है।

Data Corridor and Digital Initiatives

डेटा कॉरिडोर और डिजिटल पहलकदमियां

- Singapore and India are exploring the possibility of a **data corridor between GIFT City and Singapore** to exchange data securely.
सिंगापुर और भारत गिफ्ट सिटी और सिंगापुर के बीच डेटा कॉरिडोर की संभावना की जांच कर रहे हैं ताकि डेटा को सुरक्षित रूप से साझा किया जा सके।
- Cooperation in areas such as **renewable energy** and **development of eastern states** like Odisha and Assam is being emphasized.
नवीकरणीय ऊर्जा और ओडिशा और असम जैसे पूर्वी राज्यों के विकास में सहयोग पर जोर दिया जा रहा है।



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Eastern States and Natural Advantages

पूर्वी राज्य और प्राकृतिक लाभ

- The eastern states have **natural resources** and potential in areas like **logistics, connectivity, and petrochemicals**.
पूर्वी राज्यों में प्राकृतिक संसाधन और लॉजिस्टिक्स, कनेक्टिविटी, और पेट्रोकेमिकल्स जैसे क्षेत्रों में संभावनाएं हैं।
- Singapore and India have upgraded their relationship to a **Comprehensive Strategic Partnership**, announced during PM Modi's visit to Singapore in **September 2023**.
सिंगापुर और भारत ने अपने संबंधों को समग्र रणनीतिक साझेदारी में अपग्रेड किया है, जिसकी घोषणा सितंबर 2023 में पीएम मोदी की सिंगापुर यात्रा के दौरान की गई थी।
- Singapore is helping to build a **semiconductor ecosystem** in India and cooperating in **advanced manufacturing**.
सिंगापुर भारत में सेमीकंडक्टर इकोसिस्टम बनाने और उन्नत निर्माण में सहयोग कर रहा है।

Commemorating 60 Years of Diplomatic Relations

राजनयिक संबंधों के 60 वर्षों का उत्सव

- President Tharman Shanmugaratnam and **President Droupadi Murmu** jointly launched a **joint logo** to commemorate the **60th anniversary** of India-Singapore diplomatic relations.
राष्ट्रपति थरमन शनमुगरत्नम और राष्ट्रपति द्रौपदी मुर्मू ने भारत-सिंगापुर राजनयिक संबंधों की 60वीं वर्षगांठ के उपलक्ष्य में एक संयुक्त लोगो लॉन्च किया।
- The 60th-anniversary celebrations will include a series of **visits and events** throughout the year.
60वीं वर्षगांठ का उत्सव वर्ष भर में दौरे और कार्यक्रमों की एक श्रृंखला के साथ मनाया जाएगा।

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Centre announces constitution of Eighth Pay Commission

GS Paper II

The Hindu Bureau

NEW DELHI

Days ahead of the Delhi Assembly election, the Union government approved the establishment of the Eighth Pay Commission here on Thursday, accepting a demand of the Central trade unions and employees' organisations. The outcome of the new Pay Commission will benefit about 50 lakh employees and 65 lakh pensioners of the Union government, including serving and retired defence personnel. Delhi itself houses about four lakh employees of the Union government.

Talking to reporters after a Cabinet meeting, Union Information and Broadcasting Minister Ashwini Vaishnaw said Prime Minister Narendra Modi had taken the decision to constitute the Eighth Pay Commission. He said the Chairperson and two members of the commission would be appointed soon.

Usually, a retired Supreme Court judge heads the Pay Commission. The Seventh Pay Commission was headed by Justice A.K. Mathur (retd). It started functioning in 2014 and submitted its report in 2016. The new scale as recommended by the Seventh Pay Commission was implemented in November 2016, and the expenses to



Ashwini Vaishnaw

the exchequer for implementing it were about ₹1 lakh crore in 2016-17.

Once accepted, the Pay Commission's recommendations will be the basis for wage settlement in public sector undertakings, and similar pay revision exercises in States. "This will provide a significant boost to consumption and economic growth, along with improved quality of life for government employees," a source in the government said.

Mr. Vaishnaw said that though the term of the Seventh Pay Commission ended only in 2026, the Prime Minister had approved the Eighth Pay Commission well ahead of time.

Trade unions said they welcomed the move, and that they would wait for the terms of reference and the constitution of the panel. The Central Secretariat Service Forum thanked the Prime Minister and the Union government for the decision.

Centre announces constitution of Eighth Pay Commission

केंद्र ने आठवें वेतन आयोग के गठन की घोषणा की

Days ahead of the Delhi Assembly election, the Union government approved the establishment of the Eighth Pay Commission on Thursday, fulfilling a demand of Central trade unions and employees' organisations.

दिल्ली विधानसभा चुनाव से कुछ दिन पहले, केंद्र

सरकार ने गुरुवार को आठवें वेतन आयोग की स्थापना को मंजूरी दी, जिससे केंद्रीय ट्रेड यूनियनों और कर्मचारियों के संगठनों की मांग पूरी हुई।

- The new Pay Commission will benefit about 50 lakh employees and 65 lakh pensioners of the Union government, including serving and retired defence personnel.

नया वेतन आयोग केंद्र सरकार के लगभग 50 लाख कर्मचारियों और 65 लाख पेंशनभोगियों, जिनमें सेवारत और सेवानिवृत्त रक्षा कर्मी शामिल हैं, को लाभ पहुंचाएगा।

- Delhi itself houses about four lakh employees of the Union government.

दिल्ली में ही केंद्र सरकार के लगभग चार लाख कर्मचारी रहते हैं।

- Union Information and Broadcasting Minister Ashwini Vaishnaw said that Prime Minister Narendra Modi had decided to constitute the Eighth Pay Commission.

केंद्रीय सूचना एवं प्रसारण मंत्री अश्विनी वैष्णव ने कहा कि प्रधानमंत्री नरेंद्र मोदी ने आठवें वेतन आयोग के गठन का निर्णय लिया है।

- The Chairperson and two members of the commission will be appointed soon.

आयोग के अध्यक्ष और दो सदस्य जल्द ही नियुक्त किए जाएंगे।

- Usually, a retired Supreme Court judge heads the Pay Commission. The Seventh Pay Commission was headed by Justice A.K. Mathur (retd), which started functioning in 2014 and submitted its report in 2016.

आमतौर पर, वेतन आयोग का नेतृत्व सेवानिवृत्त सुप्रीम कोर्ट न्यायाधीश करते हैं। सातवें वेतन



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आयोग का नेतृत्व न्यायमूर्ति ए.के. माथुर (सेवानिवृत्त) ने किया था, जिसने 2014 में कार्य शुरू किया और 2016 में अपनी रिपोर्ट सौंपी।

- The **new scale** recommended by the **Seventh Pay Commission** was implemented in **November 2016**, with an additional expenditure of about ₹1 lakh crore in 2016-17. सातवें वेतन आयोग द्वारा सिफारिश किए गए नए पैमाने को नवंबर 2016 में लागू किया गया, जिससे 2016-17 में ₹1 लाख करोड़ का अतिरिक्त खर्च हुआ।
- Once accepted, the recommendations will form the basis for **wage settlement in public sector undertakings** and **similar pay revisions in States**. स्वीकृत होने पर, सिफारिशें सार्वजनिक क्षेत्र के उपक्रमों में वेतन समझौते और राज्यों में समान वेतन संशोधन का आधार बनेंगी।
- This move is expected to **boost consumption and economic growth**, while improving the quality of life for government employees. इस कदम से उपभोग और आर्थिक विकास को बढ़ावा मिलने और सरकारी कर्मचारियों के जीवन स्तर में सुधार होने की उम्मीद है।
- **Mr. Vaishnav** noted that although the term of the **Seventh Pay Commission** ends in **2026**, **Prime Minister Modi** approved the Eighth Pay Commission well in advance. श्री वैष्णव ने कहा कि हालांकि सातवें वेतन आयोग का कार्यकाल 2026 में समाप्त होता है, प्रधानमंत्री मोदी ने आठवें वेतन आयोग को समय से पहले मंजूरी दी है।
- **Trade unions** welcomed the move but stated they would wait for the **terms of reference** and the full constitution of the panel. ट्रेड यूनियनों ने इस कदम का स्वागत किया, लेकिन कहा कि वे संदर्भ की शर्तों और पैनल के पूर्ण गठन का इंतजार करेंगे।
- The **Central Secretariat Service Forum** thanked the **Prime Minister** and the Union government for this decision. सेंट्रल सेक्रेटेरियट सर्विस फोरम ने इस निर्णय के लिए प्रधानमंत्री और केंद्र सरकार का धन्यवाद किया।

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Indonesian President to be chief guest on Republic Day

Prabowo will be accompanied by a massive military contingent that will march down Kartavya Path with the Indian military; the two countries are also close to concluding a deal on BrahMos

GS Paper II:
India-Indonesia

Dinakar Peri

NEW DELHI

Indonesian President Prabowo Subianto will be the chief guest at the Republic Day Parade this year, with the Indonesian Army bringing the largest foreign contingent so far to march down Kartavya Path alongside India's military.

The visit on January 25 and 26, announced by New Delhi and Jakarta simultaneously, will make Mr. Prabowo the fourth Indonesian President to be invited as the chief guest on Republic Day.

According to sources, the two countries are also close to concluding a \$450-million deal for the BrahMos supersonic cruise missile systems, which will make Indonesia the second export customer for the Indo-Russian system. An announcement of the deal is expected during the visit.

Sources confirmed that Indonesia's Defence Ministry has officially sent a request to the Indian Embassy in Jakarta over the proposed deal on BrahMos, which was earlier



Prabowo Subianto will be the fourth Indonesian President to be invited as the chief guest on India's Republic Day. REUTERS

procured by the Philippines. The request is now being processed by the Defence Ministry for a detailed response, the sources said. Indonesia has expressed interest in procuring other Indian military platforms such as the Dhruv advanced light helicopters and the Akash air defence systems. Mr. Prabowo, who was the Defence Minister of Indonesia under President Joko Widodo, was sworn in as President in October 2024.

Friendly relations

"India and Indonesia share warm and friendly ties spanning over millennia. As a Comprehensive Stra-

tegic Partner, Indonesia is an important pillar in India's Act East Policy and our vision of the Indo-Pacific," said the Ministry of External Affairs in a statement announcing the visit. "President Prabowo and Prime Minister Narendra Modi will witness the exchange of a number of memoranda of understanding between the governments of the two countries in various sectors, including health, culture, education, maritime security and safety, traditional medicine, which aim to strengthen cooperation between the two countries," the Indonesian Ministry of Foreign Affairs

said in a statement on Thursday.

"The visit of the Indonesian President to India confirms the strengthening and expansion of strategic cooperation between Indonesia and India, especially in the economic, defence and maritime sectors," it added, disclosing that Mr. Prabowo would be accompanied by a 352-member military contingent that would march down the parade route. The massive Army contingent, the largest foreign contingent so far, has been practising for the event for several months, officials said, and will include 152 marching troops and 189 cadets from the military bands with both men and women.

According to the official programme, Mr. Prabowo will pay his respects to Mahatma Gandhi at Rajghat and receive a ceremonial welcome at the Rashtrapati Bhavan forecourt on January 25, followed by a bilateral meeting with Mr. Modi at Hyderabad House. He will go to the parade on January 26 and attend the "At Home" tea hosted by President Droupadi Murmu before leaving.



Indonesian President to be Chief Guest on Republic Day गणतंत्र दिवस पर मुख्य अतिथि होंगे इंडोनेशियाई राष्ट्रपति

Indonesian President Prabowo Subianto will be the chief guest at the Republic Day Parade this year, with the Indonesian Army bringing the largest foreign contingent so far to march down Kartavya Path alongside India's military.

इंडोनेशियाई राष्ट्रपति प्राबोवो सुबियांतो इस वर्ष गणतंत्र दिवस परेड में मुख्य अतिथि होंगे, जिसमें इंडोनेशियाई सेना भारत की सेना के साथ कर्तव्य पथ पर अब तक की सबसे बड़ी विदेशी टुकड़ी लेकर आएगी।

- The visit on **January 25 and 26**, announced by **New Delhi and Jakarta** simultaneously, will make Mr. Prabowo the **fourth Indonesian President** to be invited as the chief guest on Republic Day.

25 और 26 जनवरी को नई दिल्ली और जकार्ता द्वारा एक साथ घोषित यह यात्रा, श्री प्राबोवो को गणतंत्र दिवस पर मुख्य अतिथि के रूप में आमंत्रित किए जाने वाले चौथे इंडोनेशियाई राष्ट्रपति बनाएगी।

- The two countries are also close to concluding a **\$450-million deal for the BrahMos supersonic cruise missile systems**, which will make **Indonesia the second export customer** for the **Indo-Russian system**.

दोनों देश ब्राहमोस सुपरसोनिक क्रूज मिसाइल सिस्टम के लिए 450 मिलियन डॉलर के समझौते को अंतिम रूप देने के करीब हैं, जिससे इंडोनेशिया इस इंडो-रूसी प्रणाली का दूसरा निर्यात ग्राहक बन जाएगा।

- An announcement of the deal is expected during the visit.
इस समझौते की घोषणा यात्रा के दौरान होने की संभावना है।
- Sources confirmed that **Indonesia's Defence Ministry** has officially sent a request to the **Indian Embassy in Jakarta** over the proposed deal on BrahMos, which was earlier procured by the **Philippines**.

सूत्रों ने पुष्टि की कि इंडोनेशिया के रक्षा मंत्रालय ने ब्राहमोस पर प्रस्तावित समझौते के लिए जकार्ता स्थित भारतीय दूतावास को औपचारिक अनुरोध भेजा है, जिसे पहले फिलीपींस ने खरीदा था।

- The request is now being processed by the **Defence Ministry** for a detailed response.
इस अनुरोध को अब रक्षा मंत्रालय द्वारा विस्तृत उत्तर के लिए संसाधित किया जा रहा है।
- Indonesia has also expressed interest in procuring other Indian military platforms such as the **Dhruv advanced light helicopters** and the **Akash air defence systems**.
इंडोनेशिया ने अन्य भारतीय सैन्य प्लेटफॉर्म जैसे ध्रुव उन्नत हल्के हेलीकॉप्टर और आकाश वायु रक्षा प्रणाली खरीदने में भी रुचि व्यक्त की है।



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- **Mr. Prabowo**, who was the Defence Minister of Indonesia under **President Joko Widodo**, was sworn in as President in **October 2024**.

श्री प्राबोवो, जो राष्ट्रपति जोको विडोडो के तहत इंडोनेशिया के रक्षा मंत्री थे, ने अक्टूबर 2024 में राष्ट्रपति पद की शपथ ली।

Friendly Relations

मित्रतापूर्ण संबंध

- "India and Indonesia share **warm and friendly ties spanning over millennia**. As a **Comprehensive Strategic Partner**, Indonesia is an **important pillar in India's Act East Policy** and our vision of the Indo-Pacific," said the **Ministry of External Affairs** in a statement announcing the visit.
"भारत और इंडोनेशिया के बीच हजारों वर्षों से गर्मजोशी और मित्रता का संबंध है। एक व्यापक रणनीतिक साझेदार के रूप में, इंडोनेशिया भारत की एकट ईस्ट नीति और हमारे इंडो-पैसिफिक दृष्टिकोण का एक महत्वपूर्ण स्तंभ है," यात्रा की घोषणा करते हुए विदेश मंत्रालय ने कहा।
- **President Prabowo** and **Prime Minister Narendra Modi** will witness the exchange of a **number of memoranda of understanding** between the governments of the two countries in various sectors, including **health, culture, education, maritime security and safety, and traditional medicine**.
राष्ट्रपति प्राबोवो और प्रधानमंत्री नरेंद्र मोदी दोनों देशों की सरकारों के बीच स्वास्थ्य, संस्कृति, शिक्षा, समुद्री सुरक्षा और परंपरागत चिकित्सा जैसे विभिन्न क्षेत्रों में कई समझौता ज्ञापनों का आदान-प्रदान देखेंगे।
- The visit of the Indonesian President to India confirms the **strengthening and expansion of strategic cooperation** between Indonesia and India, especially in the **economic, defence, and maritime sectors**.
भारत में इंडोनेशियाई राष्ट्रपति की यात्रा, इंडोनेशिया और भारत के बीच रणनीतिक सहयोग को मजबूत और विस्तार करने की पुष्टि करती है, खासकर आर्थिक, रक्षा और समुद्री क्षेत्रों में।
- Mr. Prabowo will be accompanied by a **352-member military contingent**, which will march down the parade route. The contingent will include **152 marching troops** and **189 cadets from military bands** with both men and women.
श्री प्राबोवो के साथ **352 सदस्यीय सैन्य दल** होगा, जो परेड मार्ग पर मार्च करेगा। इस दल में **152 मार्चिंग सैनिक** और **189 कैडेट्स** शामिल होंगे, जिनमें पुरुष और महिलाएं दोनों होंगी।
- According to the official program, Mr. Prabowo will **pay his respects to Mahatma Gandhi** at **Rajghat** and receive a **ceremonial welcome** at **Rashtrapati Bhavan** on **January 25**, followed by a **bilateral meeting with Mr. Modi** at **Hyderabad House**.
आधिकारिक कार्यक्रम के अनुसार, श्री प्राबोवो **25 जनवरी** को **राजघाट पर महात्मा गांधी** को श्रद्धांजलि अर्पित करेंगे और राष्ट्रपति भवन में औपचारिक स्वागत प्राप्त करेंगे, इसके बाद **हैदराबाद हाउस में श्री मोदी के साथ द्विपक्षीय बैठक** करेंगे।
- He will attend the **Republic Day Parade on January 26** and the **'At Home' tea** hosted by **President Droupadi Murmu** before leaving.

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वह 26 जनवरी को गणतंत्र दिवस परेड और राष्ट्रपति द्रौपदी मुर्मू द्वारा आयोजित 'एट होम' चाय में शामिल होंगे।

Triservice tableau to roll down Kartavya Path on Republic Day

PCS

Dinakar Peri

NEW DELHI

A single triservice tableau will be present at this year's Republic Day parade on Kartavya Path instead of three individual service tableaux, while the indigenous advanced light helicopter Dhruv will be conspicuous by its absence as the entire fleet remains grounded for checks following the crash of a Coast Guard helicopter on January 5 that killed two pilots and a diver.

A total of 44 aircraft and helicopters will be part of the flypast, which includes 22 fighters, 11 transport aircraft and seven helicopters. For safety reasons, no single-engine aircraft or helicopters are flown over Kartavya Path, which means that the indigenous light combat aircraft Tejas will not be part of the flypast as is the norm. So effectively all the fighter jets will be foreign, highlighting the crisis in IAF modernisation due to delays in manufacturing and inductions.

'Vertical charlie'

The various IAF aircraft will operate from 10 different bases and the flypast will end with a single Rafale jet performing the



The Dhruv helicopter will be absent as the fleet remains grounded after a fatal crash.

"vertical charlie" manoeuvre, said Wing Commander Manish Sharma briefing presspersons on Thursday.

The IAF marching contingent will comprise four officers, one contingent commander and three supernumerary officers and 144 airmen.

Along with the marching contingent will be the IAF band, consisting of 72 musicians including 22 Agniveer Vayu and three drum majors led by Sergeant Charles Anthony Daniel, Wg. Cdr. Sharma said.

For the Beating Retreat ceremony held at Vijay Chowk from January 27 to 28 and the finale on January 29, the IAF band comprising 121 musicians would be performing led by conductor Warrant Officer Ashok Kumar.

Triservice tableau to roll down Kartavya Path on Republic Day

त्रिसेवा झांकी गणतंत्र दिवस पर कर्तव्य पथ पर उतरेगी

A single triservice tableau will be present at this year's Republic Day parade on Kartavya Path instead of three individual service tableaux.

इस वर्ष गणतंत्र दिवस पर कर्तव्य पथ पर एकल त्रिसेवा झांकी होगी, तीन अलग-अलग सेवा झांकियों के बजाय।

- The indigenous advanced light helicopter Dhruv will be absent as the entire fleet is grounded for checks following the crash of a **Coast Guard helicopter on January 5**, which killed two pilots and a diver.

देशीय उन्नत हल्के हेलीकॉप्टर ध्रुव अनुपस्थित रहेगा क्योंकि पूरी फ्लीट को 5 जनवरी को तटरक्षक हेलीकॉप्टर दुर्घटना के बाद जांच के लिए रोक दिया गया है, जिसमें दो पायलट और एक गोताखोर की मौत हो गई।

- A total of **44 aircraft and helicopters** will be part of the flypast, including **22 fighters, 11 transport aircraft, and 7 helicopters**.

कुल 44 विमान और हेलीकॉप्टर फ्लाईपास्ट का हिस्सा होंगे, जिनमें 22 फाइटर, 11 ट्रांसपोर्ट विमान, और 7 हेलीकॉप्टर शामिल हैं।

- For safety reasons, **no single-engine aircraft or helicopters** are flown over Kartavya Path, meaning **indigenous light combat aircraft Tejas** will not be part of the flypast.

सुरक्षा कारणों से कोई सिंगल-इंजन विमान या हेलीकॉप्टर कर्तव्य



पथ पर नहीं उड़ाए जाते, जिसका अर्थ है कि **देशीय हल्का लड़ाकू विमान तेजस फ्लाइपास्ट** का हिस्सा नहीं होगा।

- The **fighter jets** participating will be foreign, highlighting the **modernisation crisis** in the Indian Air Force due to delays in manufacturing and inductions.
भाग लेने वाले **लड़ाकू विमान विदेशी** होंगे, जो निर्माण और समावेशन में देरी के कारण **भारतीय वायुसेना के आधुनिकीकरण संकट** को उजागर करते हैं।
- The flypast will end with a **single Rafale jet** performing the “**vertical charlie**” manoeuvre, as stated by **Wing Commander Manish Sharma**.
फ्लाइपास्ट का समापन एक **रफाल जेट** द्वारा “**वर्टिकल चार्ली**” करतब करने के साथ होगा, जैसा कि **विंग कमांडर मनीष शर्मा** ने बताया।
- The **IAF marching contingent** will include **4 officers, 1 contingent commander, and 3 supernumerary officers**, along with **144 airmen**.
IAF मार्चिंग दल में **4 अधिकारी, 1 दल कमांडर, और 3 अतिरिक्त अधिकारी** शामिल होंगे, साथ ही **144 एयरमैन** होंगे।
- The **IAF band** will consist of **72 musicians**, including **22 Agniveer Vayu** and **3 drum majors**, led by **Sergeant Charles Anthony Daniel**.
IAF बैंड में **72 संगीतकार**, जिनमें **22 अग्निवीर वायु** और **3 ड्रम मेजर** शामिल होंगे, का नेतृत्व **सार्जेंट चार्ल्स एंथनी डैनियल** करेंगे।
- For the **Beating Retreat ceremony** from **January 27 to 28**, and the finale on **January 29**, the **IAF band** with **121 musicians** will perform under **Warrant Officer Ashok Kumar’s** direction.
बीटिंग रिट्रीट समारोह जो **27 से 28 जनवरी** तक होगा और **29 जनवरी** के समापन के लिए, **IAF बैंड** के **121 संगीतकार वारंट अधिकारी अशोक कुमार** के निर्देशन में प्रस्तुति देंगे।

PCS

V.K. Singh sworn in as Governor of Mizoram

Former Army chief V.K. Singh was sworn in as the 25th Governor of Mizoram in the northeastern State’s capital, Aizawl, on Thursday. He replaced Hari Babu Kambhampati, who took over as his Odisha counterpart. Chief Justice of the Gauhati High Court Vijay Bishnoi administered the oath of office to General Singh (retired) at the Raj Bhavan in the presence of Chief Minister Lalduhoma, former Chief Ministers Zoramthanga and Lal Thanhawla, Assembly Speaker Lalbiakzama, and Ministers. His appointment as the Governor is considered strategic as Mizoram borders Bangladesh and Myanmar, two countries in turmoil.

V.K. Singh sworn in as Governor of Mizoram

वी.के. सिंह ने मिजोरम के राज्यपाल के रूप में शपथ ली

- **Former Army chief V.K. Singh** was sworn in as the **25th Governor of Mizoram** in **Aizawl** on Thursday.
पूर्व सेना प्रमुख वी.के. सिंह ने गुरुवार को **आइजोल** में **मिजोरम के 25वें राज्यपाल** के रूप में शपथ ली।
- He replaced **Hari Babu Kambhampati**, who took over as the Governor of **Odisha**.
उन्होंने हरी बाबू कंभमपति का स्थान लिया, जो **ओडिशा के राज्यपाल** बने।



- Chief Justice of the Gauhati High Court Vijay Bishnoi administered the oath of office at the Raj Bhavan.
गौहाटी उच्च न्यायालय के मुख्य न्यायाधीश विजय बिश्नोई ने राजभवन में शपथ दिलाई।
- The ceremony was attended by Chief Minister Lalduhoma, former Chief Ministers Zoramthanga and Lal Thanhawla, Assembly Speaker Lalbiakzama, and Ministers. इस समारोह में मुख्यमंत्री लालदूहोमा, पूर्व मुख्यमंत्री ज़ोरमथांगा और लाल थनहवला, विधानसभा अध्यक्ष लालबियाकजामा, और मंत्री उपस्थित थे।
- His appointment as the Governor is considered **strategic** as Mizoram borders **Bangladesh** and **Myanmar**, two countries facing turmoil. उनकी नियुक्ति को रणनीतिक माना जा रहा है क्योंकि मिजोरम की सीमा बांग्लादेश और म्यांमार से लगती है, जो दोनों ही संकटग्रस्त हैं।

Dalai Lama Charitable Trust gets FCRA nod

GS Paper III: Money Laundering

NEW DELHI

The Union Ministry of Home Affairs (MHA) has granted a Foreign Contribution Regulation Act (FCRA) registration to 'His Holiness the Dalai Lama Charitable Trust' for "religious" purposes, along with cultural, economic, social, and educational activities. FCRA registration is a mandatory requirement to receive foreign funds.

An official with the Trust said that the NGO is not directly linked with the spiritual leader, the Dalai Lama, but is associated with the Central Tibetan Administration (CTA), which looks after the welfare of the Tibetan community in India. The CTA is headquartered in Himachal Pradesh's Dharamsala.

Dalai Lama Charitable Trust gets FCRA nod दलाई लामा चैरिटेबल ट्रस्ट को एफसीआरए की मंजूरी मिली

- The Union Ministry of Home Affairs (MHA) has granted Foreign Contribution Regulation Act (FCRA) registration to the 'His Holiness the Dalai Lama Charitable Trust' for "religious" purposes, along with cultural, economic, social, and educational activities.

केंद्रीय गृह मंत्रालय (MHA) ने 'हिज होलीनेस द दलाई लामा चैरिटेबल ट्रस्ट' को "धार्मिक" उद्देश्यों, साथ ही सांस्कृतिक, आर्थिक, सामाजिक, और शैक्षिक गतिविधियों के लिए विदेशी योगदान नियमन अधिनियम (FCRA) पंजीकरण प्रदान किया।

- FCRA registration is a mandatory requirement to receive foreign funds.

एफसीआरए पंजीकरण विदेशी फंड प्राप्त करने के लिए एक अनिवार्य आवश्यकता है।

- An official with the Trust said that the NGO is not directly linked with the spiritual leader, the Dalai Lama, but is associated with the Central Tibetan Administration (CTA), which looks after the welfare of the Tibetan community in India.

ट्रस्ट के एक अधिकारी ने कहा कि यह एनजीओ आध्यात्मिक नेता, दलाई लामा से सीधे जुड़ा नहीं है, बल्कि यह केंद्रीय तिब्बती प्रशासन (CTA) से जुड़ा हुआ है, जो भारत में तिब्बती समुदाय की भलाई की देखभाल करता है।

- The CTA is headquartered in Dharamsala, Himachal Pradesh.

CTA का मुख्यालय धर्मशाला, हिमाचल प्रदेश में है।



RBI announces steps to boost cross-border transactions in rupee

GS Paper III: External Sector

Press Trust of India
MUMBAI

The Reserve Bank of India (RBI) on Thursday announced liberalised norms to encourage the use of Indian rupee and local/national currencies to settle cross-border transactions.

The decision when the currency is sliding, touching an all-time low of 86.70/\$ on Monday.

The RBI has already signed a memorandum of understanding (MoU) with the central banks of the United Arab Emirates, Indonesia and Maldives to



encourage cross-border transactions in local currencies, including the Indian rupee.

To encourage greater use of Indian rupee (INR) for trade transactions, in July 2022, an additional ar-

angement in the form of Special Rupee Vostro Account (SRVA) was introduced. Several foreign banks have since opened SRVAs with banks in India.

“Overseas branches of authorised dealer banks will be able to open INR accounts for a person resident outside India for settlement of all permissible current account and capital account transactions with a person resident in India,” the RBI on Thursday said while announcing the changes made in the extant FEMA regulations.

Further, persons resi-

dent outside India will be able to settle bona fide transactions with other non-residents using the balances in their repatriable INR accounts such as Special Non-resident Rupee account and SRVA.

Persons resident outside India will be able to use balances held in repatriable INR accounts for foreign investment, including FDI, in non-debt instruments.

Also, Indian exporters will be able to open accounts in any foreign currency overseas for settlement of trade transactions.

RBI announces steps to boost cross-border transactions in rupee

आरबीआई ने रुपये में क्रॉस-बॉर्डर लेन-देन को बढ़ावा देने के लिए कदम उठाए

The Reserve Bank of India (RBI) on Thursday announced liberalised norms to encourage the use of Indian rupee and local/national currencies to settle cross-border transactions.

भारतीय रिज़र्व बैंक (RBI) ने गुरुवार को लिबरलाइज्ड नियमों की घोषणा की ताकि भारतीय रुपये और स्थानीय/राष्ट्रीय मुद्राओं का उपयोग करके क्रॉस-बॉर्डर लेन-देन को बढ़ावा दिया जा सके।



Website: patrioticias.in

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- The decision was made when the currency is sliding, touching an all-time low of **86.70/\$** on **Monday**.

यह निर्णय तब लिया गया जब मुद्रा गिर रही थी, और सोमवार को **86.70/\$** के सभी समय के निचले स्तर को छू लिया था।

- The RBI has already signed a **memorandum of understanding (MoU)** with the central banks of the **United Arab Emirates, Indonesia, and Maldives** to encourage cross-border transactions in local currencies, including the **Indian rupee**.

आरबीआई ने पहले ही संयुक्त अरब अमीरात, इंडोनेशिया और मालदीव के केंद्रीय बैंकों के साथ **समझौता ज्ञापन (MoU)** पर हस्ताक्षर किए हैं ताकि भारतीय रुपये सहित स्थानीय मुद्राओं में क्रॉस-बॉर्डर लेन-देन को बढ़ावा दिया जा सके।

- To encourage greater use of **Indian rupee (INR)** for trade transactions, in **July 2022**, an additional arrangement in the form of **Special Rupee Vostro Account (SRVA)** was introduced.

भारतीय रुपये (INR) के व्यापार लेन-देन के लिए अधिक उपयोग को बढ़ावा देने के लिए, **जुलाई 2022** में **विशेष रुपये वॉस्ट्रो खाता (SRVA)** के रूप में एक अतिरिक्त व्यवस्था पेश की गई थी।

- Several foreign banks have since opened **SRVAs** with banks in **India**.

कई विदेशी बैंकों ने तब से **भारत** के बैंकों के साथ **SRVA** खोला है।

- “**Overseas branches** of authorised dealer banks will be able to open **INR accounts** for a person resident outside India for settlement of all permissible current account and capital account transactions with a person resident in India,” the RBI on Thursday said while announcing the changes made in the extant **FEMA regulations**.

“**प्राधिकृत डीलर बैंकों की ओवरसीज शाखाएँ** एक व्यक्ति के लिए **INR खाते** खोलने में सक्षम होंगी जो भारत से बाहर निवासी हो, ताकि भारत में निवासी व्यक्ति के साथ सभी अनुमत **वर्तमान खाता और पूंजी खाता** लेन-देन का निपटान किया जा सके,” आरबीआई ने गुरुवार को कहा जब उन्होंने **FEMA विनियमों** में किए गए बदलावों की घोषणा की।

- Further, persons resident outside India will be able to settle bona fide transactions with other non-residents using the balances in their **repatriable INR accounts** such as **Special Non-resident Rupee account** and **SRVA**.

इसके अलावा, भारत से बाहर निवासी व्यक्ति **विशेष गैर-निवासी रुपये खाता** और **SRVA** जैसे **रिपेट्रियेबल INR खातों** में शेष राशि का उपयोग करके अन्य गैर-निवासी व्यक्तियों के साथ वास्तविक लेन-देन निपटान कर सकेंगे।

- Persons resident outside India will be able to use balances held in repatriable **INR accounts** for **foreign investment**, including **FDI**, in **non-debt instruments**.

भारत से बाहर निवासी व्यक्ति **रिपेट्रियेबल INR खातों** में रखी शेष राशि का उपयोग **विदेशी निवेश**, जिसमें **FDI** सहित, **गैर-ऋण उपकरणों** में कर सकेंगे।

- Also, **Indian exporters** will be able to open accounts in any **foreign currency** overseas for settlement of trade transactions.

इसके अलावा, **भारतीय निर्यातक** किसी भी **विदेशी मुद्रा** में खातों को खोलने में सक्षम होंगे ताकि व्यापार लेन-देन का निपटान किया जा सके।

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Bezos's Blue Origin launches rocket on maiden test flight

PCS

Associated Press
CAPE CANAVERAL



New horizons: A Blue Origin New Glenn rocket lifts off from Space Launch Complex 36 at Kennedy Space Centre on Thursday. AFP

Blue Origin launched its New Glenn rocket on its first test flight on Thursday, successfully sending a prototype satellite into orbit. Named after the first American to orbit Earth, the New Glenn rocket blasted off from Florida after years of development funded by Jeff Bezos, soaring from the same pad used to launch NASA's Mariner and Pioneer spacecraft a half-century ago.

Standing at 320 feet tall, New Glenn's seven engines fired at lift-off, delighting spectators as it soared into the sky. The mission aimed to keep the satellite within the second stage while orbiting Earth for six hours before placing it in a safe condition to minimize space debris.

While the upper stage reached orbit successfully, the first-stage booster missed its landing on a barge in the Atlantic Ocean. Blue Origin emphasised that the primary goal was to

achieve orbit, which they accomplished 13 minutes after lift-off. Mr. Bezos watched from Mission Control, celebrating the milestone with company employees.

Originally scheduled for a Monday launch, the flight was delayed due to ice build-up in critical systems. New Glenn is designed for multiple flights and aims to compete with SpaceX's Falcon 9. Blue Origin plans six to eight launches this year, with the next one anticipated in spring.

Despite setbacks, Mr.

Bezos expressed optimism about the future of space exploration and collaboration within the industry. New Glenn is part of a broader initiative that includes launching Amazon's Project Kuiper satellites and supporting NASA missions.

The rocket's debut was initially intended to send twin spacecraft to Mars for NASA, but that mission will now occur later due to delays. The spacecraft, named *Escapade*, will study Mars' atmosphere and magnetic environment while orbiting the planet.

launch **NASA's Mariner and Pioneer spacecraft** a half-century ago.

पहले अमेरिकी जो पृथ्वी की कक्षा में गए थे के नाम पर रखा गया, न्यू ग्लेन रॉकेट फ्लोरिडा से जेफ बेजोस द्वारा वित्तपोषित वर्षों के विकास के बाद लॉन्च हुआ, वही पैड से जिसने नासा के मैरिनर और पायोनियर अंतरिक्ष यान को आधी सदी पहले लॉन्च किया था।

- Standing at **320 feet** tall, **New Glenn's seven engines** fired at lift-off, delighting spectators as it soared into the sky.
320 फीट उंचा खड़ा न्यू ग्लेन का सात इंजन लिफ्ट-ऑफ पर जलाए गए, और यह आकाश में उड़ता हुआ दर्शकों को खुशी से भर गया।
- The mission aimed to keep the satellite within the **second stage** while orbiting **Earth for six hours** before placing it in a safe condition to minimize space debris.

Bezos's Blue Origin launches rocket on maiden test flight

बेजोस की ब्लू ओरिजिन ने पहले परीक्षण उड़ान में रॉकेट लॉन्च किया

Blue Origin launched its New Glenn rocket on its first test flight on Thursday, successfully sending a prototype satellite into orbit.

ब्लू ओरिजिन ने न्यू ग्लेन रॉकेट को अपनी पहली परीक्षण उड़ान पर गुरुवार को लॉन्च किया, सफलतापूर्वक एक प्रोटोटाइप उपग्रह को कक्षा में भेजा।

•Named after the **first American to orbit Earth**, the **New Glenn rocket** blasted off from **Florida** after years of development funded by **Jeff Bezos**, soaring from the same pad used to



मिशन का उद्देश्य उपग्रह को दूसरे चरण में रखना था, पृथ्वी के चारों ओर छह घंटे तक परिक्रमा करने के बाद इसे सुरक्षित स्थिति में रखना था ताकि अंतरिक्ष मलबे को न्यूनतम किया जा सके।

- While the **upper stage** reached orbit successfully, the **first-stage booster** missed its landing on a barge in the **Atlantic Ocean**.

जबकि **ऊपरी चरण** ने सफलतापूर्वक कक्षा में प्रवेश किया, **प्रथम चरण का बूस्टर अटलांटिक महासागर** में एक बर्ज पर लैंडिंग करने में विफल रहा।

- **Blue Origin** emphasised that the **primary goal** was to achieve **orbit**, which they accomplished **13 minutes after lift-off**.

ब्लू ओरिजिन ने जोर देकर कहा कि **प्राथमिक लक्ष्य** कक्षा प्राप्त करना था, जिसे उन्होंने **लिफ्ट-ऑफ के 13 मिनट बाद पूरा** किया।

- **Mr. Bezos** watched from **Mission Control**, celebrating the milestone with company employees.

श्री बेजोस ने **मिशन कंट्रोल** से देखा, और कंपनी के कर्मचारियों के साथ इस मील के पत्थर का जश्न मनाया।

- Originally scheduled for a **Monday launch**, the flight was delayed due to **ice build-up in critical systems**.

मूल रूप से **सोमवार को लॉन्च** के लिए निर्धारित, उड़ान को **महत्वपूर्ण प्रणालियों में बर्फ जमने** के कारण स्थगित कर दिया गया।

- **New Glenn** is designed for **multiple flights** and aims to compete with **SpaceX's Falcon 9**.

न्यू ग्लेन को **कई उड़ानों** के लिए डिज़ाइन किया गया है और इसका उद्देश्य **स्पेसएक्स के फाल्कन 9** के साथ प्रतिस्पर्धा करना है।

- **Blue Origin** plans **six to eight launches this year**, with the next one anticipated in **spring**.

ब्लू ओरिजिन इस वर्ष **छह से आठ लॉन्च** करने की योजना बना रहा है, और अगले लॉन्च की उम्मीद **वसंत** में है।

- Despite setbacks, **Mr. Bezos** expressed optimism about the future of **space exploration** and collaboration within the industry.

विफलताओं के बावजूद, **श्री बेजोस** ने **अंतरिक्ष अन्वेषण** के भविष्य और उद्योग के भीतर सहयोग के बारे में आशावाद व्यक्त किया।

- **New Glenn** is part of a broader initiative that includes launching **Amazon's Project Kuiper satellites** and supporting **NASA missions**.

न्यू ग्लेन एक व्यापक पहल का हिस्सा है जिसमें **अमेज़न के प्रोजेक्ट कुइपर उपग्रहों** को लॉन्च करना और **नासा मिशनों** का समर्थन करना शामिल है।

- The rocket's debut was initially intended to send **twin spacecraft to Mars** for **NASA**, but that mission will now occur later due to delays.

रॉकेट की शुरुआत में **नासा** के लिए **युग्म अंतरिक्ष यान मंगल पर भेजने** का इरादा था, लेकिन अब यह मिशन **देरी** के कारण बाद में होगा।



- The spacecraft, named **Escapade**, will study **Mars' atmosphere** and **magnetic environment** while orbiting the planet.
अंतरिक्ष यान, जिसका नाम एस्केपेड है, मंगल का वातावरण और चुंबकीय पर्यावरण का अध्ययन करेगा जब यह ग्रह की कक्षा में होगा।



PCS

Manu, Vinesh and Avani nominated for BBC award

Paris Olympics double medallist **Manu Bhaker**, *left in pic.*, two-time Paralympics champion **Avani Lekhara** and ace wrestler **Vinesh Phogat**, *right in pic.*, are among five athletes nominated for the BBC 'Indian Sportswoman of the Year' award. **Indian cricket team vice-captain Smriti Mandhana** and ace golfer **Aditi Ashok** are the two others shortlisted for the honour by an eminent jury of sports journalists and writers. The winner will be decided by public voting.

विजेता हैं, अवनि लेखरा, जो दो बार की पैरा ओलंपिक चैंपियन हैं, और विनेश फोगट, एक कुश्ती की माहिर खिलाड़ी, बीबीसी 'इंडियन स्पोर्ट्सवुमन ऑफ द ईयर' अवार्ड के लिए नामांकित पांच खिलाड़ियों में शामिल हैं।

- The other two athletes shortlisted for the honour are **Indian cricket team vice-captain Smriti Mandhana** and ace golfer **Aditi Ashok**.
इस सम्मान के लिए शॉर्टलिस्ट की गई अन्य दो एथलीट्स हैं भारतीय क्रिकेट टीम की उपकप्तान स्मृति मंधाना और कुशल गोल्फर अदिति अशोक।
- The winner will be decided by **public voting**.
विजेता का चयन सार्वजनिक मतदान द्वारा किया जाएगा।

Manu, Vinesh and Avani nominated for BBC award

मनु, विनेश और अवनी को बीबीसी पुरस्कार के लिए नामांकित किया गया

Paris Olympics Double Medallist **Manu Bhaker**, **Avani Lekhara**, and **Vinesh Phogat** Nominated for BBC 'Indian Sportswoman of the Year' Award

पैरिस ओलंपिक्स की डबल पदक विजेता मनु भाकर, अवनि लेखरा, और विनेश फोगट बीबीसी 'इंडियन स्पोर्ट्सवुमन ऑफ द ईयर' अवार्ड के लिए नामित

- Manu Bhaker**, a Paris Olympics double medallist, **Avani Lekhara**, a two-time Paralympics champion, and **Vinesh Phogat**, an ace wrestler, are among five athletes nominated for the BBC 'Indian Sportswoman of the Year' award.

मनु भाकर, जो पैरिस ओलंपिक्स की डबल पदक



Long overdue, short-term regimen for TB set to be a game changer

Shorter regimens have for long been the need of the hour. The most important and obvious advantages of the regimens are the duration of treatment, improved ability to complete treatment, and less economic burden. These were envisaged as all-oral regimens with a low overall pill burden

GS Paper III: Tuberculosis

Chapal Mehra
Lancelot Pinto

Multidrug-resistant tuberculosis (MDR-TB) is a strain of the TB disease in which the infecting tuberculosis germs are resistant to the effects of rifampicin and isoniazid, two of the most potent drugs available for TB treatment. Being infected with such TB strains carries up to a 30-40% risk of death, making MDR-TB a serious, life-threatening illness. India bears a significant burden of TB and has a growing burden of MDR-TB; of the 1,75,923 persons reported to the World Health Organization in 2023, 27% were from India.

For years, the evolution of such resistant germs was largely attributed to the lack of adherence to TB treatment and misuse of TB drugs, especially through improper drug regimens, both of which aid the selection of mutant strains of the bacterium. This is common in India, and often the duration of treatment (6 months) and the number of drugs (typically 4 at the start of treatment) made treatment adherence for drug-sensitive (DS) TB challenging. It is therefore ironic that until recently, the treatment of DR TB involved even more drugs (at least five), which were far more toxic than drugs used for drug-sensitive TB, for a longer duration (18 months or more). It is not surprising then that TB-affected communities globally have for years been advocating and asking for shorter, less toxic treatments, but were often ignored.

The health research and delivery system systematically deprioritised these demands. Perhaps it was because TB-affected populations lived largely in the Global South. Physicians were taught to advise patients to ignore these side effects and have often gaslighted patients for complaining about these side-effects. Intramuscular injections were prescribed to be taken daily, leading to painful swellings, making even being seated a challenge, making work, school, and leisure constantly painful and often impossible. Hearing loss, a side effect of injectables, was dismissed with "better deaf than dead." Skin discolouration, a common adverse effect of clofazimine added to the TB stigma but was termed a "minor adverse effect," without really appreciating what the affected individual went through.

Menstrual cycles were disrupted, appetites were lost and people suffered dealing with severe depression and suicidal ideation. All were termed secondary to medications, which they



A tuberculosis patient at a hospital in Hyderabad, AP

had to endure for at least 18 months.

Shorter regimens

Shorter regimens have for long been the need of the hour. The most important and obvious advantages of the regimens are the duration of treatment, improved ability to complete treatment, and hopefully less economic burden. These were envisaged as all-oral regimens with a low overall pill burden.

Among the most recent of these is the BPaL regimen, which has three oral drugs – bedaquiline, pretomanid and linezolid (BPaL/M has four drugs, along with moxifloxacin) – prescribed for six months. The Nix-TB trial proved the efficacy of the regimen in 109 patients enrolled in three South African centres. The ZeNix trial, conducted across four countries (South Africa, Georgia, Moldova, and Russia,) enrolled 181 participants and found that a lower dose of linezolid (600 mg once a day instead of twice) was better tolerated with similar outcomes.

While these new regimens can be game changers, caveats need to be kept in mind. First, adherence needs to be closely monitored, as bedaquiline resistance has been reported in a high proportion among those failing treatment. Several phone-based and digital devices have been used to improve adherence, in addition to counselling, and these need to be an integral part of treatment. Currently, these are missing in

While new regimens can be game changers, adherence must be monitored, as bedaquiline resistance has been reported in a high proportion among those failing treatment

high-burden countries. Second, drug-susceptibility testing needs to be widely accessible to know whether the regimen is appropriate for a given patient. We should not treat these as silver bullets to be used indiscriminately. It only makes sense to prescribe a drug when one is certain that the drug works, and this is likely to get more relevant as treatment is widely prescribed.

There is also the development of antimicrobial resistance that is an inevitable consequence of such use in a subset of patients. Finally, shorter regimens are not devoid of adverse effects. Linezolid is notorious for causing disabling sensory neuropathy in a proportion of patients, and such adverse effects need to be watched for, and alternate regimens clearly defined for those who may not tolerate these regimens. We also must evaluate these regimens on the basis of individual experience and adverse events that affect the quality of the affected individual during and post treatment.

Preparedness is key
The other key issue is health system

preparedness, which remains low. Training of physicians in how to manage such situations has to be a part of the rollout. If we truly want to prevent MDR-TB, we must arrest the spread. This can only be achieved by universal molecular diagnostics to detect drug-resistant TB at an early stage.

Since a majority of patients with TB, access private healthcare as their first point of contact, we need large-scale efficient, and reliable private-public partnerships to ensure access to these regimens while preventing their abuse by making them indiscriminately available.

Shorter regimens are likely to be more expensive for the programme. However, continuing inexpensive but toxic regimens would be myopic and will cause patient suffering, which often leads to them giving up.

While the government must be lauded for taking this step forward to roll out the new regimens, even if this move was delayed, preparedness, community education, and supportive services such as counselling and side effects management are key.

While new regimens are critical, it is also important not to forget the critical role of stigma reduction, economic and nutritional support, and better living environments for TB-affected populations.

TB can be cured more quickly, but are we doing enough to prevent it? New regimens with only a focus on pill burden should not make us overlook the structural social, economic, and gender determinants in TB. Nor should we forget what we need is person-centred, high quality care that informs, engages, and works with the affected individual and their families to address why some groups get TB in larger proportions and why some others give up on treatment.

A shorter regimen is transformative but not the answer to all the issues that persist in TB.

Keeping in mind many such intervening factors, systems need to think of a more person-centred view of care and delivery. Under this, a quick rollout, with systemic preparedness and the above caveats, would help clinicians offer more humane treatment, cure patients faster, and allow them to return to their lives without huge disruptions. The answer to controlling TB, though, is not new regimens alone but a broader systemic transformation that may still be missing.

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THE GIST

The evolution of resistant germs was largely attributed to lack of adherence to TB treatment and misuse of drugs, especially through improper regimens, both of which aid the selection of mutant strains of the bacterium

TB-affected communities have been seeking less toxic treatments. These demands were systematically deprioritised. Physicians were taught to advise patients to ignore side effects. Painful treatments were prescribed to be taken daily, making work, school, and leisure painful and often impossible

Among the most recent of shorter regimens is the BPaL regimen, which has three oral drugs – bedaquiline, pretomanid and linezolid – prescribed for six months. Trials across four countries found that a lower dose of linezolid was better tolerated with similar outcomes



Long overdue, short-term regimen for TB set to be a game changer

टीबी के लिए लंबे समय से प्रतीक्षित, अल्पकालिक उपचार एक गेम चेंजर साबित हो सकता है

Shorter regimens have for long been the need of the hour. The most important and obvious advantages of the regimens are the duration of treatment, improved ability to complete treatment, and less economic burden. These were envisaged as all-oral regimens with a low overall pill burden

लंबे समय से छोटी खुराक वाली दवाएं समय की मांग रही हैं। इन दवाओं के सबसे महत्वपूर्ण और स्पष्ट लाभ हैं उपचार की अवधि, उपचार पूरा करने की बेहतर क्षमता और कम आर्थिक बोझ। इन्हें कम समय गोली के बोझ के साथ सभी-मौखिक खुराक वाली दवाओं के रूप में परिकल्पित किया गया था

Multidrug-Resistant Tuberculosis (MDR-TB)

मल्टी-ड्रग-प्रतिरोधी तपेदिक (MDR-TB)

- **MDR-TB** is a strain of **tuberculosis** where the bacteria are resistant to **rifampicin** and **isoniazid**, two of the most potent TB drugs.
MDR-TB तपेदिक का एक प्रकार है, जिसमें बैक्टीरिया रिफाम्पिसिन और आइसोनियाज़िड जैसे शक्तिशाली तपेदिक दवाओं के प्रति प्रतिरोधी होते हैं।
- Being infected with such TB strains carries up to a **30-40% risk of death**, making **MDR-TB** a **serious, life-threatening illness**.
इस प्रकार के तपेदिक की संक्रमित होने पर **30-40% मृत्यु का जोखिम** होता है, जिससे **MDR-TB** एक गंभीर, जीवन के लिए खतरे वाली बीमारी बन जाती है।
- **India** bears a significant burden of **TB** and has a growing burden of **MDR-TB**.
भारत तपेदिक का एक महत्वपूर्ण बोझ वहन करता है और **MDR-TB** का बढ़ता बोझ है।
- Of the **1,75,923 persons** reported to the **World Health Organization** in **2023**, **27% were from India**.
2023 में विश्व स्वास्थ्य संगठन को रिपोर्ट किए गए 1,75,923 व्यक्तियों में से 27% भारत से थे।

Causes of MDR-TB Resistance

MDR-TB प्रतिरोध के कारण

- For years, the evolution of such resistant germs was largely attributed to **lack of adherence to TB treatment** and **misuse of TB drugs**, especially through improper drug regimens.



- वर्षों से, ऐसे प्रतिरोधी कीटाणुओं का विकास मुख्य रूप से **TB उपचार का पालन न करने और TB दवाओं का दुरुपयोग** के कारण समझा गया है, विशेष रूप से गलत दवा शासन के माध्यम से।
- **Improper drug regimens** aid the selection of mutant strains of the bacterium.
गलत दवा शासन बैक्टीरिया के उत्परिवर्तित प्रकारों का चयन करने में मदद करते हैं।
 - This is common in India, where the **duration of treatment** (typically **6 months**) and the **number of drugs** (typically **4 at the start**) make treatment adherence for **drug-sensitive TB** challenging.
यह भारत में सामान्य है, जहाँ **उपचार की अवधि** (आमतौर पर **6 महीने**) और **दवाओं की संख्या** (आमतौर पर **4 प्रारंभ में**) **दवा-संवेदनशील तपेदिक** के लिए उपचार पालन को चुनौतीपूर्ण बनाती है।
 - **MDR-TB** treatment involves more **drugs** (at least **5**), which are far more **toxic** than drugs used for **drug-sensitive TB**, for a longer duration (typically **18 months or more**).
MDR-TB उपचार में अधिक **दवाएँ** (कम से कम **5**), जो **दवा-संवेदनशील तपेदिक** के लिए उपयोग की जाने वाली दवाओं से कहीं अधिक **विषैली** होती हैं, और एक लंबे समय तक (आमतौर पर **18 महीने या अधिक**) होती हैं।
 - **TB-affected communities globally** have for years been advocating for **shorter, less toxic treatments**, but were often ignored.
वैश्विक तपेदिक प्रभावित समुदाय वर्षों से **कम समय, कम विषैली उपचार** की वकालत कर रहे हैं, लेकिन अक्सर उन्हें नजरअंदाज कर दिया गया।

Health Research and Systemic Challenges

स्वास्थ्य अनुसंधान और प्रणालीगत चुनौतियाँ

- The health research and delivery system systematically **deprioritized** these demands, perhaps because TB-affected populations lived largely in the **Global South**.
स्वास्थ्य अनुसंधान और वितरण प्रणाली ने इन मांगों को व्यवस्थित रूप से **कम प्राथमिकता दी**, शायद इसलिए क्योंकि तपेदिक प्रभावित जनसंख्या अधिकांशतः **वैश्विक दक्षिण** में रहती थी।
- Physicians were taught to advise patients to ignore these **side effects** and often **gaslighted** patients for complaining about them.
चिकित्सकों को यह सिखाया गया था कि वे रोगियों को इन **दुष्प्रभावों** को अनदेखा करने की सलाह दें और अक्सर उनके द्वारा शिकायत करने पर उन्हें **गैसलाइट** किया जाता था।
- **Intramuscular injections** were prescribed to be taken daily, leading to **painful swellings**, making work, school, and leisure constantly painful.
इंट्रामस्क्युलर इंजेक्शंस को दैनिक लेने के लिए निर्धारित किया गया था, जिससे **दर्दनाक सूजन** होती थी, जिससे काम, स्कूल और विश्राम लगातार दर्दनाक हो जाता था।
- **Hearing loss**, a side effect of injectables, was dismissed with “better deaf than dead.”
सुनने की हानि, एक इंजेक्टेबल का दुष्प्रभाव, को “मरे हुए से बेहतर बहरे” के रूप में खारिज कर दिया गया।
- **Skin discolouration**, a common side effect of **clofazimine**, added to the **TB stigma** but was termed a “**minor adverse effect**.”



त्वचा का रंग बदलना, क्लोफाज़िमिन का एक सामान्य दुष्प्रभाव, TB कलंक को और बढ़ा देता था, लेकिन इसे “सूक्ष्म दुष्प्रभाव” कहा जाता था।

- **Menstrual cycles** were disrupted, **appetites were lost**, and people suffered from **severe depression** and **suicidal ideation**.

मासिक चक्र असंतुलित हो गए, भूख खो गई, और लोग गंभीर अवसाद और आत्महत्या की प्रवृत्ति से पीड़ित हो गए।

- All these were termed secondary to medications, which had to be endured for at least **18 months**.

इन सभी को दवाओं के कारण माना गया, जिन्हें कम से कम **18 महीने** तक सहना पड़ा।

Shorter Regimens for MDR-TB

MDR-TB के लिए छोटे उपचार कार्यक्रम

- **Shorter regimens** have long been the need of the hour.

छोटे उपचार कार्यक्रम लंबे समय से आवश्यकता बन चुके हैं।

- The most important and obvious advantages of the regimens are the **duration of treatment**, improved **ability to complete treatment**, and hopefully less **economic burden**.

उपचार कार्यक्रमों के सबसे महत्वपूर्ण और स्पष्ट लाभ हैं **उपचार की अवधि**, **उपचार पूरा करने की बेहतर क्षमता**, और उम्मीद है कि कम **आर्थिक बोझ**।

- These regimens were envisaged as **all-oral regimens** with a low overall **pill burden**. इन उपचार कार्यक्रमों की कल्पना **सभी मौखिक उपचार कार्यक्रमों** के रूप में की गई थी, जिसमें कुल मिलाकर **कम गोली बोझ** होता है।

BPaL Regimen and Recent Trials

BPaL उपचार और हालिया परीक्षण

- The **BPaL regimen** includes **three oral drugs** — **bedaquiline**, **pretonamid**, and **linezolid** (BPaL/M includes **four drugs**, with **moxifloxacin**) and is prescribed for **six months**.

BPaL उपचार में **तीन मौखिक दवाएँ** — **बेडाक्विलिन**, **प्रेटोनामिड**, और **लाइनजोलीड** (BPaL/M में **चार दवाएँ** हैं, जिसमें **मॉक्सीफ्लोक्सासिन** शामिल है) और इसे **छह महीने** के लिए निर्धारित किया जाता है।

- The **Nix-TB trial** demonstrated the efficacy of the regimen in **109 patients** enrolled in **three South African centres**.

Nix-TB परीक्षण ने **तीन दक्षिण अफ्रीकी केंद्रों** में पंजीकृत **109 रोगियों** में इस उपचार की प्रभावशीलता का प्रदर्शन किया।

- The **ZeNix trial**, conducted across **four countries** (**South Africa, Georgia, Moldova, and Russia**), enrolled **181 participants** and found that a lower dose of **linezolid** (600 mg once a day instead of twice) was better tolerated with similar outcomes.

ZeNix परीक्षण, जो **चार देशों** (**दक्षिण अफ्रीका, जॉर्जिया, मोल्दोवा, और रूस**) में किया गया था, में



181 प्रतिभागियों ने भाग लिया और पाया कि **लाइनजोलीड** की कम खुराक (600 mg एक बार दिन में, दो बार की बजाय) को बेहतर तरीके से सहन किया गया और परिणाम समान रहे।

Caveats and Considerations for New Regimens

नए उपचार कार्यक्रमों के लिए चेतावनियाँ और विचार

- **Adherence** needs to be closely monitored, as **bedaquiline resistance** has been reported in a **high proportion** among those failing treatment.
पालन को बारीकी से निगरानी में रखा जाना चाहिए, क्योंकि **बेडाक्विलिन प्रतिरोध** उन लोगों में उच्च अनुपात में रिपोर्ट किया गया है जिन्होंने उपचार में विफलता पाई।
- Several **phone-based and digital devices** have been used to improve adherence, in addition to counselling, and these need to be an **integral part of treatment**.
फोन-आधारित और डिजिटल उपकरणों का उपयोग पालन में सुधार के लिए किया गया है, इसके अतिरिक्त काउंसलिंग भी की जाती है, और इन्हें उपचार का **अविभाज्य हिस्सा** बनाना चाहिए।
- Currently, these tools are missing in **high-burden countries**.
वर्तमान में, ये उपकरण उच्च बोझ वाले देशों में उपलब्ध नहीं हैं।
- **Drug-susceptibility testing** needs to be widely accessible to know whether the regimen is appropriate for a given patient.
दवा-संवेदनशीलता परीक्षण को व्यापक रूप से सुलभ बनाना चाहिए ताकि यह पता चल सके कि यह उपचार किसी विशेष रोगी के लिए उपयुक्त है या नहीं।
- **MDR-TB regimens** should not be treated as **silver bullets** to be used indiscriminately. It makes sense to prescribe a drug only when one is **certain that the drug works**.
MDR-TB उपचार कार्यक्रमों को **चमत्कारी उपाय** के रूप में नहीं देखा जाना चाहिए जो अचेतन रूप से उपयोग किए जाएं। यह दवा केवल तब ही निर्धारित की जानी चाहिए जब यह **सुनिश्चित हो कि दवा प्रभावी है**।
- The development of **antimicrobial resistance** is an inevitable consequence of such use in a subset of patients.
एंटीमाइक्रोबियल प्रतिरोध का विकास इस प्रकार के उपयोग का अपरिहार्य परिणाम है, जो कुछ रोगियों में होता है।
- Finally, shorter regimens are not devoid of **adverse effects**. **Linezolid** is known to cause **disabling sensory neuropathy** in a proportion of patients.
अंत में, छोटे उपचार कार्यक्रमों में **दुष्प्रभाव** से बचाव नहीं है। **लाइनजोलीड** को कुछ रोगियों में **अक्षम करने वाली संवेदी न्यूरोपैथी** का कारण माना जाता है।
- Such adverse effects need to be closely monitored, and alternate regimens clearly defined for those who may not tolerate these regimens.
ऐसे दुष्प्रभावों की बारीकी से निगरानी करनी चाहिए, और उन लोगों के लिए वैकल्पिक उपचार कार्यक्रमों को स्पष्ट रूप से परिभाषित करना चाहिए जो इन उपचारों को सहन नहीं कर सकते।
- These regimens must also be evaluated on the basis of **individual experience** and **adverse events** that affect the **quality of the affected individual** during and post-treatment.



इन उपचार कार्यक्रमों का मूल्यांकन **व्यक्तिगत अनुभव और दुष्प्रभावों** के आधार पर भी किया जाना चाहिए, जो **प्रभावित व्यक्ति** की **गुणवत्ता** को उपचार के दौरान और बाद में प्रभावित करते हैं।

Preparedness is key

तैयारी सबसे महत्वपूर्ण है

- **Health system preparedness** remains low, and training of physicians on how to manage such situations must be part of the rollout.
स्वास्थ्य प्रणाली की तैयारी अभी भी कम है, और चिकित्सकों को इस तरह की स्थितियों को कैसे प्रबंधित करना है, इस पर प्रशिक्षण को रोलआउट का हिस्सा बनाना चाहिए।
- If we truly want to prevent **MDR-TB**, we must arrest the spread. This can only be achieved by **universal molecular diagnostics** to detect **drug-resistant TB** at an early stage.
अगर हम **MDR-TB** को सचमुच रोकना चाहते हैं, तो हमें इसके प्रसार को रोकना होगा। इसे केवल **सार्वभौमिक आणविक निदान** द्वारा **दवा-प्रतिरोधी TB** को प्रारंभिक चरण में पहचानने से ही प्राप्त किया जा सकता है।
- Since a majority of **TB patients** access **private healthcare** as their first point of contact, we need large-scale, efficient, and reliable **private-public partnerships** to ensure access to these regimens while preventing their abuse.
चूंकि अधिकांश **TB मरीज** अपनी पहली संपर्क बिंदु के रूप में **निजी स्वास्थ्य देखभाल** तक पहुंचते हैं, हमें इन उपचारों तक पहुंच सुनिश्चित करने के लिए बड़े पैमाने पर, प्रभावी और विश्वसनीय **निजी-सरकारी साझेदारी** की आवश्यकता है, जबकि उनके दुरुपयोग को रोकना चाहिए।
- **Shorter regimens** are likely to be more expensive for the program. However, continuing **inexpensive but toxic regimens** would be myopic and cause patient suffering, often leading them to give up.
छोटे उपचार कार्यक्रम कार्यक्रम के लिए अधिक महंगे हो सकते हैं। हालांकि, **सस्ते लेकिन विषैले उपचार कार्यक्रमों** को जारी रखना निकटदृष्टि होगा और रोगियों की पीड़ा का कारण बनेगा, जो अक्सर उन्हें उपचार छोड़ने पर मजबूर कर देता है।
- While the government must be lauded for taking this step forward to roll out new regimens, preparedness, community education, and supportive services such as **counselling** and **side effects management** are key.
जबकि सरकार को नए उपचार कार्यक्रमों को लागू करने के लिए इस कदम को बढ़ाने के लिए सराहा जाना चाहिए, तैयारी, सामुदायिक शिक्षा और सहायक सेवाएँ जैसे **काउंसलिंग** और **दुष्प्रभावों का प्रबंधन** महत्वपूर्ण हैं।
- While new regimens are critical, it is also important not to forget the role of **stigma reduction, economic and nutritional support**, and better living environments for **TB-affected populations**.
जबकि नए उपचार कार्यक्रम महत्वपूर्ण हैं, यह भी महत्वपूर्ण है कि हम **कलंक को कम करना, आर्थिक और पोषण समर्थन**, और **TB-प्रभावित जनसंख्या** के लिए बेहतर जीवन पर्यावरण की भूमिका को न भूलें।



- **TB** can be cured more quickly, but are we doing enough to prevent it? **New regimens** with only a focus on **pill burden** should not make us overlook the **structural social, economic, and gender determinants in TB**.

TB को जल्दी ठीक किया जा सकता है, लेकिन क्या हम इसे रोकने के लिए पर्याप्त कर रहे हैं? केवल **गोली का बोझ** पर ध्यान केंद्रित करने वाले **नए उपचार** हमें **TB में संरचनात्मक सामाजिक, आर्थिक, और लिंग निर्धारकों** को नज़रअंदाज नहीं करने देना चाहिए।

- We must remember that what we need is **person-centred, high-quality care** that informs, engages, and works with the affected individual and their families to address why some groups get TB in larger proportions and why some others give up on treatment.

हमें याद रखना चाहिए कि हमें **व्यक्ति-केंद्रित, उच्च गुणवत्ता वाली देखभाल** की आवश्यकता है, जो प्रभावित व्यक्ति और उनके परिवारों के साथ मिलकर काम करती है और यह समझाती है कि कुछ समूहों में **TB** अधिक क्यों होता है और कुछ अन्य क्यों उपचार छोड़ देते हैं।

- A shorter regimen is transformative but not the answer to all the issues that persist in **TB**.

छोटा उपचार कार्यक्रम परिवर्तनकारी है, लेकिन यह **TB** में बनी रहने वाली सभी समस्याओं का समाधान नहीं है।

- Keeping in mind many such intervening factors, systems need to think of a more **person-centred view of care** and delivery.

इन प्रकार के अनेक हस्तक्षेप कारकों को ध्यान में रखते हुए, प्रणालियों को **व्यक्ति-केंद्रित देखभाल** और वितरण पर विचार करना चाहिए।

- Under this, a quick rollout with **systemic preparedness** and the above caveats would help clinicians offer more humane treatment, cure patients faster, and allow them to return to their lives without huge disruptions.

इसके तहत, एक त्वरित रोलआउट, **संविधानिक तैयारी** और ऊपर बताए गए चेतावनियों के साथ चिकित्सकों को अधिक मानवीय उपचार प्रदान करने में मदद मिलेगी, रोगियों को जल्दी ठीक किया जा सकेगा, और उन्हें उनके जीवन में बड़े व्यवधानों के बिना लौटने का अवसर मिलेगा।

- The answer to controlling **TB**, though, is not new regimens alone but a broader **systemic transformation** that may still be missing.

हालांकि, **TB** को नियंत्रित करने का उत्तर केवल नए उपचार कार्यक्रमों में नहीं है, बल्कि एक व्यापक **संविधानिक परिवर्तन** में है, जो अभी भी गायब हो सकता है।



HUMERUS



Costly HPV vaccine needs to be part of national immunisation programme

GS Paper II:
 Government Scheme

January is Cervical Cancer Awareness Month, and doctors are urging women to get screened for this deadly disease. Cervical cancer develops in the cervix, or the wall of the cervix. The Human Papillomavirus (HPV) is responsible for 99.7% of cervical cancers worldwide and is among the leading causes of cancer in Indian women. The HPV vaccine is the most effective way to prevent it, as it stimulates the immune system to produce antibodies that neutralise the virus.

In India, HPV vaccines are only available under prescription by private practitioners, even though the National Technical Advisory Group for Immunisation (NTAGI) has recommended that the HPV vaccine be included in the national immunisation programme. A senior Health Ministry official noted that the Ministry was working on the inclusion. The NTAGI recommends a one-time catch-up for girls aged 9-14, followed by routine introduction at 9 years.

A vaccine that helps

The HPV vaccine was introduced in India in 2008, but its high cost has limited its use. Some states, such as Punjab and Sikkim, have

introduced the vaccine into their immunisation programmes. The vaccine is most effective when given before exposure to the virus and is recommended for children aged 12 to 13 years old and people at high risk from HPV. The vaccine is safe and well tolerated and can be used in people who are immunocompromised or HIV-infected. Common side effects include mild fever, tenderness, swelling, and redness at the injection site. It doesn't treat existing HPV infections or diseases. However, it can prevent more than 90% of cancers associated with HPV.

It protects against genital warts and most cases of cervical cancer. It protects against cancer of the vagina, vulva, penis, or anus caused by HPV. The HPV vaccine also protects against mouth, throat, head, and neck cancers caused by the virus. India has authorised several HPV vaccines, including Gardasil (a quadrivalent vaccine that protects against HPV-6, 11, 16, and 18), Cervarix (a bivalent vaccine), and Cervavac (an Indian-developed vaccine that targets high-risk HPV types).

In India, cancer of the cervix uteri is the 3rd most common cancer, with an incidence rate of 18.3% (123,907 cases), and the second leading cause of death, with a mortality rate of 9.1%, as per GLOBOCAN 2020. The age-standardised incidence rate per

1,00,000 population was 18, while the five-year prevalence rate across all ages was 42.82 per 1 lakh population. As per the National Cancer Registry Programme, cancer of the breast and cervix uteri was the most common cancer among females. Cervical cancer accounted for 6.29% of all cancers among women in India. Papumpare district in the state of Arunachal Pradesh, India, had the highest incidence rate of cervical cancer (27.7) in Asia.

The majority of the patients with cancer were diagnosed at the locally advanced stage for breast (57%), cervix uteri (60%), head and neck (66.6%), and stomach (50.8%) cancer, whereas in lung cancer, distant metastasis was predominant among males (44%) and females (47.6%).

Challenges ahead

Experts note that among the top challenges to the uptake of HPV vaccination in India are the high cost of the vaccine, concerns about its safety and effectiveness due to lack of awareness and cultural perceptions around reproductive health.

Richu Sharma, consultant medical oncologist, Ujala Cygnus Group of Hospitals, speaking about the cost and coverage of the vaccine, notes that Gardasil 9 is

priced at ₹10,850 per dose, Gardasil 4 costs range between ₹2,000 and ₹4,000 per dose, while Cervavac (the first Indian-made HPV vaccine by the Serum Institute of India, effective against HPV types 16 and 18, approved for ages 9 to 26) is priced at ₹2,000 per dose. Vaccines like Gardasil and Cervavac are already approved for use in boys and young men, offering protection against HPV-related conditions such as genital warts and certain cancers, including anal and throat cancers. This marks an essential step towards broader HPV prevention in all genders.

Sowmya Sampurna M., obstetrics and gynaecology, Apollo Cradle and Children Hospital, Hyderabad, said that all males and females aged 9-26 years should get the HPV vaccine. Unvaccinated men and women aged 27-45 years should consider getting vaccinated. The HPV vaccine is most effective if it's given before exposure.

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

Costly HPV vaccine needs to be part of national immunisation programme

महंगे एचपीवी टीके को राष्ट्रीय टीकाकरण कार्यक्रम का हिस्सा बनाया जाना चाहिए

January is Cervical Cancer Awareness Month

जनवरी है सर्वाइकल कैंसर जागरूकता माह

- **Doctors** are urging women to get screened for **cervical cancer**, which develops in the **cervix**, or the wall of the cervix.
 डॉक्टर महिलाओं से सर्वाइकल कैंसर की स्क्रीनिंग कराने की अपील कर रहे हैं, जो सर्विक्स या सर्विक्स की दीवार में विकसित होता है।
- The **Human Papillomavirus (HPV)** is responsible for **99.7%** of cervical cancers worldwide and is among the leading causes of cancer in **Indian women**.
 ह्यूमन पैपिलोमावायरस (HPV) दुनिया भर में 99.7% सर्वाइकल कैंसर का कारण है और यह भारतीय महिलाओं में कैंसर के प्रमुख कारणों में से एक है।
- The **HPV vaccine** is the most effective way to prevent cervical cancer, as it stimulates the **immune system** to produce antibodies that neutralise the virus.



HPV वैक्सीन सर्वाइकल कैंसर को रोकने का सबसे प्रभावी तरीका है, क्योंकि यह **प्रतिरक्षा प्रणाली** को उत्तेजित करता है ताकि एंटीबॉडीज का निर्माण हो सके जो वायरस को निष्क्रिय कर दें।

- In **India**, **HPV vaccines** are only available under prescription by private practitioners, even though the **National Technical Advisory Group for Immunisation (NTAGI)** has recommended its inclusion in the national immunisation programme.

भारत में HPV वैक्सीन्स केवल निजी चिकित्सकों द्वारा पर्चे पर उपलब्ध हैं, हालांकि **राष्ट्रीय तकनीकी सलाहकार समूह (NTAGI)** ने इसे राष्ट्रीय टीकाकरण कार्यक्रम में शामिल करने की सिफारिश की है।

- The NTAGI recommends a **one-time catch-up** for girls aged **9–14**, followed by routine introduction at age **9**.

NTAGI ने **9–14 वर्ष** आयु की लड़कियों के लिए एक एक समय का **catch-up** और फिर **9 वर्ष** की उम्र में नियमित रूप से इसे लागू करने की सिफारिश की है।

A vaccine that helps

एक वैक्सीन जो मदद करती है

- The **HPV vaccine** was introduced in **India** in **2008**, but its high cost has limited its use. **HPV वैक्सीन** को **भारत में 2008** में पेश किया गया था, लेकिन इसकी उच्च लागत ने इसके उपयोग को सीमित कर दिया है।

- Some **states**, such as **Punjab** and **Sikkim**, have introduced the vaccine into their immunisation programmes.

कुछ **राज्य**, जैसे **पंजाब** और **सिक्किम**, ने अपने टीकाकरण कार्यक्रमों में इस वैक्सीन को शामिल किया है।

- The vaccine is most effective when given **before exposure** to the virus and is recommended for **children aged 12–13 years** and people at **high risk** from **HPV**. यह वैक्सीन तब सबसे प्रभावी होती है जब इसे वायरस से **पहले दिया** जाता है और इसे **12–13 वर्ष** आयु के बच्चों और **HPV से उच्च जोखिम** वाले लोगों के लिए अनुशंसित किया जाता है।

- The vaccine is **safe and well tolerated** and can be used in **immunocompromised** or **HIV-infected** individuals.

यह वैक्सीन **सुरक्षित और अच्छी तरह सहन** की जाती है और इसका उपयोग **प्रतिरक्षा कमजोर** या **HIV संक्रमित** व्यक्तियों में किया जा सकता है।

- Common **side effects** include **mild fever**, **tenderness**, **swelling**, and **redness** at the injection site.

सामान्य **दुष्प्रभावों** में **हल्का बुखार**, **संवेदनशीलता**, **सूजन**, और **इंजेक्शन स्थल पर लालिमा** शामिल हैं।

- The vaccine doesn't treat **existing HPV infections** or diseases, but it can prevent more than **90% of cancers** associated with HPV.

यह वैक्सीन **मौजूदा HPV संक्रमण** या रोगों का इलाज नहीं करती है, लेकिन यह **HPV से संबंधित 90% से अधिक कैंसर** को रोक सकती है।



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- It protects against **genital warts**, most cases of **cervical cancer**, and cancer of the **vagina, vulva, penis, or anus** caused by HPV.
यह जेनितल वार्ट्स, अधिकांश मामलों में सर्वाइकल कैंसर, और HPV के कारण योनि, वुल्वा, लिंग, या गुदा के कैंसर से रक्षा करती है।
- The **HPV vaccine** also protects against **mouth, throat, head, and neck cancers** caused by the virus.
HPV वैक्सीन मुँह, गला, सिर, और गले के कैंसर से भी रक्षा करती है, जो वायरस के कारण होते हैं।
- **India** has authorised several **HPV vaccines**, including **Gardasil** (a **quadrivalent vaccine**), **Cervarix** (a **bivalent vaccine**), and **Cervavac** (an **Indian-developed vaccine** targeting high-risk HPV types).
भारत ने कई HPV वैक्सीन्स को मंजूरी दी है, जिनमें गार्डसिल (एक क्वाड्रिवैलेंट वैक्सीन), सर्वेरिक्स (एक बाइवैलेंट वैक्सीन), और सर्वावैक (एक भारतीय विकसित वैक्सीन जो उच्च-जोखिम वाले HPV प्रकारों को लक्षित करता है) शामिल हैं।

In India, cervical cancer is a significant issue

भारत में, सर्वाइकल कैंसर एक महत्वपूर्ण समस्या है

- **Cervical cancer** is the **3rd most common cancer** in India, with an incidence rate of **18.3%** (123,907 cases) and a mortality rate of **9.1%** as per **GLOBOCAN 2020**.
सर्वाइकल कैंसर भारत में तीसरा सबसे सामान्य कैंसर है, जिसका **18.3%** (123,907 मामले) का घटनाक्रम दर और **9.1%** का मृत्यु दर है, जैसा कि **GLOBOCAN 2020** के अनुसार है।
- The **age-standardised incidence rate per 1,00,000 population** was **18**, and the **five-year prevalence rate** was **42.82 per 1 lakh population**.
आयु-मानकीकरण घटनाक्रम दर प्रति 1,00,000 जनसंख्या 18 थी, और पाँच साल की प्रसार दर 42.82 प्रति 1 लाख जनसंख्या थी।
- As per the **National Cancer Registry Programme**, **breast and cervical cancer** are the most common cancers among **females**.
राष्ट्रीय कैंसर रजिस्ट्री कार्यक्रम के अनुसार, स्तन और सर्वाइकल कैंसर महिलाओं में सबसे सामान्य कैंसर हैं।
- **Cervical cancer** accounted for **6-29%** of all cancers among women in India.
सर्वाइकल कैंसर भारत में महिलाओं में सभी कैंसर का **6-29%** था।
- **Papumpare district** in **Arunachal Pradesh** had the highest incidence rate of **cervical cancer** (27.7) in Asia.
अरुणाचल प्रदेश के पापम्परे जिले में एशिया में सर्वाइकल कैंसर का सबसे उच्चतम घटनाक्रम दर (27.7) था।

Challenges ahead

आगे की चुनौतियां

- **Experts** note that the **high cost** of the **HPV vaccine**, concerns about its **safety** and **effectiveness**, and cultural perceptions about **reproductive health** are among the top

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challenges to the uptake of vaccination in India.

विशेषज्ञों का कहना है कि **HPV वैक्सीन** की उच्च लागत, इसके सुरक्षा और प्रभावकारिता को लेकर चिंताएं, और प्रजनन स्वास्थ्य के बारे में सांस्कृतिक धारणाएं भारत में टीकाकरण को अपनाने में प्रमुख चुनौतियां हैं।

- The cost of **Gardasil 9** is ₹10,850 per dose, **Gardasil 4** ranges from ₹2,000 to ₹4,000, and **Cervavac** (India's first HPV vaccine) costs ₹2,000 per dose.

गार्डसिल 9 की कीमत ₹10,850 प्रति खुराक है, गार्डसिल 4 ₹2,000 से ₹4,000 के बीच है, और सर्वावैक (भारत की पहली HPV वैक्सीन) की कीमत ₹2,000 प्रति खुराक है।

- Vaccines like **Gardasil** and **Cervavac** are approved for use in both **boys** and **young men**, offering protection against HPV-related conditions such as **genital warts** and certain cancers, including **anal and throat cancers**.

गार्डसिल और सर्वावैक जैसी वैक्सीन्स को लड़कों और युवाओं में उपयोग के लिए मंजूरी मिली है, जो जेनिटल वार्ट्स और गुदा एवं गले के कैंसर जैसे HPV से संबंधित स्थितियों से सुरक्षा प्रदान करती हैं।

- **HPV vaccination** should be given to all males and females aged **9-26 years**, and unvaccinated individuals aged **27-45 years** should consider vaccination.

HPV टीकाकरण सभी 9-26 वर्ष आयु के पुरुषों और महिलाओं को दिया जाना चाहिए, और 27-45 वर्ष आयु के अनटीकाकृत व्यक्तियों को टीकाकरण पर विचार करना चाहिए।

- The **HPV vaccine** is most effective if given **before exposure** to the virus.

HPV वैक्सीन सबसे प्रभावी होती है यदि इसे वायरस के संपर्क में आने से पहले दिया जाए।