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THE HINDU NEWSPAPER

DAILY CURRENT AFFAIRS

14 MARCH 2025

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14_03_2025 DAILY CURRENT AFFAIRS

TOPICS COVERED (GS Paper I: History, Society and Geography)

1. T.N. opts for Tamil letter 'ஐ' instead of '₹' in budget logo
तमिलनाडु सरकार ने बजट लोगो में '₹' के बजाय तमिल अक्षर 'ஐ' चुना
2. The gender budget — bigger allocations, little impact
जेंडर बजट — बड़ी आवंटन राशि, लेकिन सीमित प्रभाव
3. INA veteran celebrates 99th birthday by paying tributes to Netaji and fallen soldiers

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आईएनए के वरिष्ठ सैनिक ने नेताजी और शहीदों को श्रद्धांजलि देकर मनाया 99वां जन्मदिन

T.N. opts for Tamil letter 'ரூ' instead of '₹' in budget logo

G Paper I

The Hindu Bureau
CHENNAI

Tamil Nadu Chief Minister M.K. Stalin on Thursday released a promotional logo for the State budget for 2025-26, replacing the Indian currency symbol, ₹, used in the previous financial year's Budget with the Tamil letter 'Roo' ('ரூ') to denote 'Roobai' (the Tamil word for the currency).

The budget will be presented on Friday.

The logo, shared on the official X page of the Chief Minister, carried the slogan 'Ellarkum Ellam (everything for everyone)' conveying the idea of inclusiveness. The promotional video produced by the Information and Public Relations Department has included the Sangam period *Purananooru* verse in praise of the Chera King Cheraman Palai Paadiya Perumkadungo.

Official sources said the Tamil Nadu government, in its budget document, was using 'ரூ' and the English word "rupees" and had not opted for the symbol ₹ in the text.

"The Chief Minister has used Tamil, one of the 15 languages in the Indian currency. It is not against the Constitution," an official source said.

BJP State president K. Annamalai criticised the DMK government for replacing the rupee symbol

Move reveals a dangerous mindset: Nirmala

CHENNAI

Union Finance Minister Nirmala Sitharaman on Thursday said removing the Indian currency symbol '₹' from "Tamil Nadu Budget 2025-26 documents" was more than mere symbolism. She said it signalled a dangerous mindset that "weakens Indian unity and promotes secessionist sentiments under the pretence of regional pride. A completely avoidable example of language and regional chauvinism".

₹, which is a blend of the Devanagari 'Ra' for rupiah and the Roman 'R' for rupees in English.

In an X post, he said, "The DMK government's State budget for 2025-26 replaces the rupee symbol designed by a Tamilian, which was adopted by the whole of Bharat and incorporated into our currency".

The symbol ₹ was designed by D. Udaya Kumar, the son of a former DMK MLA, who won a national contest to design a symbol for the rupee in 2010.

At a press conference, J. Jeyaranjan, the Executive Vice-Chairman of the State Planning Commission, claimed the Tamil letter 'ரூ' was used only to "avoid using Devanagari".

T.N. opts for Tamil letter 'ரூ' instead of '₹' in budget logo

तमिलनाडु सरकार ने बजट लोगो में '₹' के बजाय तमिल अक्षर 'ரூ' चुना

Tamil Nadu Chief Minister M.K. Stalin released a promotional logo for the State budget 2025-26, replacing the Indian currency symbol ₹ with the Tamil letter 'Roo' ('ரூ') to denote 'Roobai' (the Tamil word for rupee).

तमिलनाडु के मुख्यमंत्री एम.के. स्टालिन ने 2025-26 के राज्य बजट के लिए एक प्रचार लोगो जारी किया, जिसमें भारतीय मुद्रा चिह्न ₹ को तमिल अक्षर 'Roo' ('ரூ') से बदल दिया गया, जो 'Roobai' (रूपया) का तमिल शब्द है।

- The budget will be presented on Friday.
बजट शुक्रवार को पेश किया जाएगा।

Promotional elements in the budget logo बजट लोगो में प्रचार संबंधी तत्व

- The logo was shared on the official X page of the Chief Minister and carried the slogan 'Ellarkum Ellam' (everything for everyone), promoting inclusiveness.
लोगो को मुख्यमंत्री के आधिकारिक X पेज पर साझा किया गया, जिसमें 'Ellarkum Ellam' (सबके लिए सब कुछ) का नारा शामिल था, जो समावेशिता को दर्शाता है।



- The promotional video, produced by the Information and Public Relations Department, included a Sangam period Purananoru verse praising Chera King Cheraman Palai Paadiya Perumkadungo.
सूचना और जनसंपर्क विभाग द्वारा निर्मित प्रचार वीडियो में संगम काल के पुरनानूरु छंद को शामिल किया गया, जो चेरा राजा चेरामन पलई पाडियिया पेरुमकडुंगो की प्रशंसा करता है।

Tamil Nadu government's stance on using '₹'

तमिलनाडु सरकार का '₹' के उपयोग पर रुख

- Official sources stated that the Tamil Nadu government used '₹' and the English word "rupees" in its budget document, instead of the ₹ symbol.
आधिकारिक सूत्रों के अनुसार, तमिलनाडु सरकार ने अपने बजट दस्तावेज़ में '₹' और अंग्रेज़ी शब्द "rupees" का उपयोग किया, बजाय ₹ प्रतीक के।
- An official clarified that the Chief Minister used Tamil, which is one of the 15 languages featured on Indian currency notes, and this does not violate the Constitution.
एक अधिकारी ने स्पष्ट किया कि मुख्यमंत्री ने तमिल का उपयोग किया, जो भारतीय मुद्रा नोटों पर शामिल 15 भाषाओं में से एक है, और यह संविधान के खिलाफ नहीं है।

BJP criticizes the move

बीजेपी ने इस कदम की आलोचना की

- BJP State President K. Annamalai criticized the DMK government, stating that replacing the ₹ symbol was unnecessary.
बीजेपी के प्रदेश अध्यक्ष के. अन्नामलाई ने डीएमके सरकार की आलोचना की, यह कहते हुए कि ₹ प्रतीक को बदलना अनावश्यक था।
- In an X post, he remarked that the DMK government replaced a rupee symbol designed by a Tamilian, D. Udaya Kumar, which was adopted nationwide in 2010.
एक X पोस्ट में, उन्होंने कहा कि डीएमके सरकार ने तमिलनाडु के निवासी डी. उदय कुमार द्वारा डिज़ाइन किए गए रुपये के प्रतीक को हटा दिया, जिसे 2010 में पूरे भारत ने अपनाया था।
- D. Udaya Kumar, son of a former DMK MLA, won a national contest in 2010 to design the ₹ symbol.
डी. उदय कुमार, जो एक पूर्व डीएमके विधायक के पुत्र हैं, ने 2010 में रुपये के प्रतीक को डिज़ाइन करने की राष्ट्रीय प्रतियोगिता जीती थी।



DMK defends the change

डीएमके ने बदलाव का बचाव किया

- J. Jeyaranjan, Executive Vice-Chairman of the State Planning Commission, clarified that the Tamil letter 'ஐ' was used only to avoid using Devanagari script. राज्य योजना आयोग के कार्यकारी उपाध्यक्ष जे. जयरंजन ने स्पष्ट किया कि तमिल अक्षर 'ஐ' का उपयोग केवल देवनागरी लिपि से बचने के लिए किया गया था।

The gender budget — bigger allocations, little impact

GS Paper I: Society

The Union Budget 2025-26 has been hailed for its increased allocation towards women-centric schemes, with the total gender budget rising to ₹4.49 lakh crore, marking a 37.25% increase from the previous fiscal year's allocation of ₹3.27 lakh crore. The increased allocation is substantial even if one factors in an inflationary rate of approximately 3.61%.

Despite rising allocations, poor results

The amount allocated for the gender budget has increased consistently – ₹1,71,006.47 crore in 2022-23, ₹2,38,219.75 in 2023-24, ₹3,27,158.44 in 2024-25 and ₹4,49,028.68 in 2025-26. This signifies the government's clear intent to bridge gender disparities. But despite the increase in the expenditure, the economic benefits to women have not percolated in the same ratio. Specifically, tangible benefits to women, particularly from marginalised populations, including the Scheduled Castes (SC) and Scheduled Tribes (ST), have failed miserably. This is despite the government announcing many programmes for the marginalised. To illustrate, this year, a corpus of ₹300 crore has been allocated to the Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) for the socio-economic development of 75 Particularly Vulnerable Tribal Groups (PVTGs) and ₹75 crore for the Dharti Aba Janjatiya Gram Utkarsh Abhiyan, also aimed at tribal welfare.

Even though India has been drafting a gender budget for 20 years, it has failed to include evaluations from previous Budgets to inform a gender budget which incorporates the intersectionality of caste, class, and tribal identities. This has led to the failure of the schemes to transform the lives of marginalised women.

As Vikas Singh from Daang Vikas Sansthan, who works with widows of mine workers in Rajasthan, points out, "Schemes are very nice on paper, but digitization has created new barriers. Most women lack digital literacy, making accessing welfare schemes without middlemen



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Without addressing the intersectional realities of caste, class, gender, and the digital divide, the gender budget will continue to fail India's women

difficult." The government's move to eliminate intermediaries through digitisation necessitates urgent investments in digital literacy programmes.

Outdated Census data, other gaps

Women from SC/ST communities face layered discrimination, making it vital to analyse how budgetary allocations address these intersections. In the Union Budget 2025-26, the Ministry of Tribal Affairs received an allocation of ₹14,925.81 crore – a 45.79% increase from the previous year's revised estimate of ₹10,237.33 crore. However, specific allocations under the Scheduled Castes Sub-Plan (SCSP) and Tribal Sub-Plan (TSP) are not detailed in the available sources.

These sub-plans are integral to the Budgets of various Ministries, with the aim of ensuring targeted development for SCs and STs. The combined allocations for SCSP and TSP across all Ministries are substantial, reflecting the commitment to welfare. But there is a lack of gender-disaggregated data within these plans, which makes it challenging to assess their actual impact on SC/ST women. The last Census in India was in 2011, making current data outdated. This gap raises serious questions about how government policies are tailored without updated statistics, affecting accountability mechanisms.

According to the "Dalit Adivasi Budget Analysis 2023-24" report by the National Campaign on Dalit Human Rights (NCDHR), over 35% of the funds allocated under SCSP and TSP are underutilised due to bureaucratic red tape and lack of community involvement. Complicated paperwork, procedural barriers, low outreach, and an inadequate dissemination of information hinder women from availing themselves of welfare schemes. Though women do not understand the nitty-gritties due to the financial jargon of the Economic Survey, they wait every year for "schemes", "subsidies", and government support that can make their life easier. Schemes often fail to consider regional,

cultural and social diversities, especially in tribal areas where access to education and health care remains dismal. The literacy rate among tribal women is 49.4%, compared to the national female literacy rate of 64.63% (Census 2011).

Issues to tackle

According to Sandeep Patnaik, a researcher and journalist working on women's rights and panchayati raj issues, "Strengthening local institutions and ensuring better utilization of existing funds is as important as increasing allocations." The role of panchayati raj institutions is critical in ensuring the last-mile delivery of services, yet they often lack the autonomy and the resources to implement gender-sensitive policies effectively. Also, the government needs to create strict rules to prevent the rule of "sarpanch husbands", which has become one of the significant obstacles to women's empowerment and upliftment.

Gender budgets must be designed after an audit that accounts for intersectionality of caste, class, and tribal identities at the central and State levels. Second, the government must adopt community-led participatory methods that involve women, especially those from SC/ST backgrounds, in planning and monitoring schemes. Evidence from Kerala's Kudumbashree mission shows that community-led implementation significantly improves outreach and effectiveness. Establishing transparent monitoring systems to track fund utilisation and impact would be beneficial. The creation of a gender budget tracking portal could foster greater public accountability.

While the increased allocation for women in the Budget is in the right direction, real progress lies in its effective implementation. Without addressing the intersectional realities of caste, class, gender, and the digital divide, the gender budget will continue to fail women. For transformative change, policies must move beyond tokenism to ensure equity, accessibility, and accountability.

The gender budget — bigger allocations, little impact

जेंडर बजट — बड़ी आवंटन राशि, लेकिन सीमित प्रभाव

The Union Budget 2025-26 increased allocations for women-centric schemes, with the gender budget rising to ₹4.49 lakh crore, a 37.25% increase from ₹3.27 lakh crore in the previous fiscal year.



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केंद्रीय बजट 2025-26 में महिलाओं पर केंद्रित योजनाओं के लिए आवंटन बढ़ाया गया, जिसमें जेंडर बजट ₹4.49 लाख करोड़ तक पहुंच गया, जो पिछले वित्तीय वर्ष के ₹3.27 लाख करोड़ से 37.25% अधिक है।

- Even after adjusting for inflation (approximately 3.61%), this increase remains significant.
मुद्रास्फीति (लगभग 3.61%) को ध्यान में रखते हुए भी, यह वृद्धि महत्वपूर्ण बनी हुई है।

Despite rising allocations, poor results

आवंटन में वृद्धि के बावजूद, कमजोर परिणाम

- Gender budget allocations have consistently increased:
 - ₹1.71 lakh crore in 2022-23
 - ₹2.38 lakh crore in 2023-24
 - ₹3.27 lakh crore in 2024-25
 - ₹4.49 lakh crore in 2025-26जेंडर बजट का आवंटन लगातार बढ़ा है:
 - 2022-23 में ₹1.71 लाख करोड़
 - 2023-24 में ₹2.38 लाख करोड़
 - 2024-25 में ₹3.27 लाख करोड़
 - 2025-26 में ₹4.49 लाख करोड़
- Despite increased spending, economic benefits for women have not increased proportionally.
खर्च में वृद्धि के बावजूद, महिलाओं को मिलने वाले आर्थिक लाभ उसी अनुपात में नहीं बढ़े हैं।
- Marginalized women, including Scheduled Castes (SC) and Scheduled Tribes (ST), have not benefited significantly, despite government efforts.
अनुसूचित जाति (SC) और अनुसूचित जनजाति (ST) सहित हाशिए पर मौजूद महिलाओं को पर्याप्त लाभ नहीं मिला है, जबकि सरकार ने कई योजनाएँ शुरू की हैं।

Government allocations for tribal development

जनजातीय विकास के लिए सरकारी आवंटन

- ₹300 crore allocated for Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) for socio-economic development of 75 Particularly Vulnerable Tribal Groups (PVTGs).
प्रधानमंत्री जनजाति आदिवासी न्याय महा अभियान (PM JANMAN) के लिए ₹300 करोड़ आवंटित,



जिससे 75 विशेष रूप से कमजोर जनजातीय समूहों (PVTGs) का सामाजिक-आर्थिक विकास किया जाएगा।

- ₹75 crore allocated for Dharti Aba Janjatiya Gram Utkarsh Abhiyan, aimed at tribal welfare.
धरती आबा जनजातीय ग्राम उत्कर्ष अभियान के लिए ₹75 करोड़ आवंटित, जो जनजातीय कल्याण पर केंद्रित है।

Issues in gender budgeting

जेंडर बजटिंग में समस्याएँ

- India has been drafting gender budgets for 20 years, but past evaluations have not been incorporated to address caste, class, and tribal disparities.
भारत पिछले 20 वर्षों से जेंडर बजट तैयार कर रहा है, लेकिन पिछले बजटों का मूल्यांकन जाति, वर्ग और जनजातीय असमानताओं को हल करने के लिए शामिल नहीं किया गया।
- As a result, schemes have failed to transform the lives of marginalized women.
इसके परिणामस्वरूप, योजनाएँ हाशिए पर मौजूद महिलाओं के जीवन में कोई बड़ा बदलाव लाने में विफल रही हैं।

Challenges of digitization in welfare schemes

कल्याणकारी योजनाओं में डिजिटलीकरण की चुनौतियाँ

- Vikas Singh from Daang Vikas Sansthan (working with widows of mine workers in Rajasthan) pointed out that digitization has created new barriers.
राजस्थान में खान मजदूरों की विधवाओं के साथ काम करने वाले दांग विकास संस्थान के विकास सिंह ने कहा कि डिजिटलीकरण ने नई बाधाएँ खड़ी कर दी हैं।
- Most women lack digital literacy, making it difficult to access welfare schemes without intermediaries.
अधिकांश महिलाओं के पास डिजिटल साक्षरता की कमी है, जिससे वे बिचौलियों के बिना कल्याणकारी योजनाओं तक नहीं पहुँच पातीं।
- The government's move to eliminate intermediaries through digitization requires urgent investment in digital literacy programs.
बिचौलियों को हटाने के लिए सरकार द्वारा किए गए डिजिटलीकरण प्रयासों को सफल बनाने के लिए डिजिटल साक्षरता कार्यक्रमों में त्वरित निवेश की आवश्यकता है।



Outdated Census data, other gaps

पुराने जनगणना डेटा और अन्य खामियां

- Women from SC/ST communities face multiple layers of discrimination, making it essential to analyze how budgetary allocations address these issues.
अनुसूचित जाति (SC) और अनुसूचित जनजाति (ST) समुदायों की महिलाएं कई स्तरों पर भेदभाव का सामना करती हैं, इसलिए यह आवश्यक है कि बजट आवंटन इन समस्याओं को कैसे हल कर रहे हैं इसका विश्लेषण किया जाए।
- In the Union Budget 2025-26, the Ministry of Tribal Affairs received ₹14,925.81 crore, marking a 45.79% increase from ₹10,237.33 crore in the previous year.
केंद्रीय बजट 2025-26 में, जनजातीय मामलों के मंत्रालय को ₹14,925.81 करोड़ मिले, जो पिछले वर्ष के ₹10,237.33 करोड़ से 45.79% अधिक है।

Lack of clarity in SCSP and TSP allocations

SCSP और TSP आवंटनों में स्पष्टता की कमी

- Specific allocations under the Scheduled Castes Sub-Plan (SCSP) and Tribal Sub-Plan (TSP) are not detailed in available sources.
अनुसूचित जाति उप-योजना (SCSP) और जनजातीय उप-योजना (TSP) के तहत विशिष्ट आवंटन उपलब्ध स्रोतों में स्पष्ट नहीं हैं।
- These sub-plans are integral to various Ministry Budgets, ensuring targeted development for SCs and STs.
ये उप-योजनाएँ विभिन्न मंत्रालयों के बजट का महत्वपूर्ण हिस्सा हैं, जो SC और ST समुदायों के लक्षित विकास को सुनिश्चित करती हैं।
- Despite substantial allocations, the lack of gender-disaggregated data makes it difficult to assess the real impact on SC/ST women.
भारी आवंटन के बावजूद, लिंग-आधारित डेटा की अनुपस्थिति के कारण SC/ST महिलाओं पर वास्तविक प्रभाव का मूल्यांकन करना मुश्किल है।
- The last Census in India was conducted in 2011, making current government data outdated, which affects accountability in policymaking.
भारत में अंतिम जनगणना 2011 में हुई थी, जिससे वर्तमान सरकारी डेटा पुराना हो चुका है, और यह नीति निर्माण में जवाबदेही को प्रभावित करता है।



Underutilization of funds and barriers to access

कोष का कम उपयोग और पहुंच में बाधाएँ

- According to the Dalit Adivasi Budget Analysis 2023-24 report by NCDHR, over 35% of funds allocated under SCSP and TSP remain underutilized due to bureaucratic delays and lack of community involvement.
नेशनल कैम्पेन ऑन दलित ह्यूमन राइट्स (NCDHR) की "दलित आदिवासी बजट विश्लेषण 2023-24" रिपोर्ट के अनुसार, SCSP और TSP के तहत आवंटित 35% से अधिक धनराशि अव्ययित रहती है, जिसका कारण नौकरशाही देरी और समुदाय की भागीदारी की कमी है।
- Complicated paperwork, procedural barriers, and low outreach prevent women from availing welfare schemes.
जटिल दस्तावेज़ीकरण, प्रक्रियात्मक बाधाएँ और कम जागरूकता के कारण महिलाएँ कल्याणकारी योजनाओं का लाभ नहीं उठा पातीं।
- Many tribal women face extreme literacy gaps, with a literacy rate of 49.4%, compared to the national female literacy rate of 64.63% (Census 2011).
कई जनजातीय महिलाएँ अत्यधिक अशिक्षा का सामना कर रही हैं, जिनकी साक्षरता दर 49.4% है, जबकि राष्ट्रीय महिला साक्षरता दर 64.63% (जनगणना 2011) है।

Issues to tackle

सामना करने योग्य समस्याएँ

- Strengthening local institutions is as important as increasing budget allocations, according to Sandeep Patnaik, a researcher on women's rights and panchayati raj.
स्थानीय संस्थानों को मजबूत करना बजट आवंटन बढ़ाने जितना ही महत्वपूर्ण है, महिला अधिकारों और पंचायती राज पर शोध करने वाले संदीप पटनायक के अनुसार।
- Panchayati Raj institutions lack autonomy and resources, limiting their ability to implement gender-sensitive policies effectively.
पंचायती राज संस्थाओं के पास स्वायत्तता और संसाधनों की कमी है, जिससे वे लिंग-संवेदनशील नीतियों को प्रभावी ढंग से लागू नहीं कर पातीं।
- "Sarpanch husbands" (where men unofficially control elected women representatives) remains a major obstacle to women's empowerment.
"सरपंच पति" (जहाँ पुरुष निर्वाचित महिला प्रतिनिधियों को अनौपचारिक रूप से नियंत्रित करते हैं) महिलाओं के सशक्तिकरण में एक बड़ी बाधा बना हुआ है।



Solutions for improving gender budgets

जेंडर बजट सुधारने के समाधान

- Gender budgets must be designed after a thorough audit, considering the intersectionality of caste, class, and tribal identities.
जेंडर बजट को पूरी तरह से जांच के बाद तैयार किया जाना चाहिए, जिसमें जाति, वर्ग और जनजातीय पहचान की परस्पर निर्भरता को ध्यान में रखा जाए।
- Government must implement community-led participatory planning, involving SC/ST women in monitoring schemes.
सरकार को समुदाय-आधारित भागीदारी योजना लागू करनी चाहिए, जिसमें SC/ST महिलाओं को योजनाओं की निगरानी में शामिल किया जाए।
- Kerala's Kudumbashree mission proves that community-led models significantly improve outreach and effectiveness.
केरल की कुदुंबश्री मिशन ने साबित किया है कि समुदाय-नेतृत्व वाली योजनाएँ जागरूकता और प्रभावशीलता को बढ़ाने में मदद करती हैं।
- Creating a gender budget tracking portal would increase public accountability and ensure transparent fund utilization.
एक जेंडर बजट ट्रैकिंग पोर्टल बनाना सार्वजनिक जवाबदेही बढ़ाने और निधि के पारदर्शी उपयोग को सुनिश्चित करने में सहायक होगा।

Conclusion: Beyond tokenism, towards real change

निष्कर्ष: दिखावे से आगे, वास्तविक बदलाव की ओर

- While increased budget allocation for women is a positive step, effective implementation is key to real progress.
महिलाओं के लिए बढ़ा हुआ बजट आवंटन एक सकारात्मक कदम है, लेकिन वास्तविक प्रगति के लिए प्रभावी कार्यान्वयन आवश्यक है।
- Without addressing caste, class, gender, and the digital divide, the gender budget will fail to uplift marginalized women.
जाति, वर्ग, लिंग और डिजिटल असमानता को संबोधित किए बिना, जेंडर बजट हाशिए पर मौजूद महिलाओं को लाभ नहीं पहुँचा पाएगा।
- For transformative change, policies must focus on equity, accessibility, and accountability rather than symbolic efforts.



परिवर्तनकारी बदलाव के लिए, नीतियों को केवल प्रतीकात्मक प्रयासों से आगे बढ़कर समानता, पहुँच और जवाबदेही पर केंद्रित होना चाहिए।

INA veteran celebrates 99th birthday by paying tributes to Netaji and fallen soldiers

INA veteran celebrates 99th birthday by paying tributes to Netaji and fallen soldiers

GS Paper I: INA

The Hindu Bureau

NEW DELHI

Lieutenant Rangaswamy Madhavan Pillai, a veteran of the Indian National Army (INA), celebrated his 99th birthday on Thursday by laying wreaths at the National War Memorial and the statue of Netaji Subhas Chandra Bose on Kartavya Path.

The wreath-laying ceremony organised by the Army was attended by senior military personnel and the public.

Lt. Pillai was born on March 13, 1926, in the Swryan township of Rangoon district in Burma (now Myanmar). He joined the Indian Independence League as a civilian in 1942 under Rash Behari Bose. When Netaji arrived in Singapore, Lt. Pillai formally enlisted in the INA, also



Paying tribute: R. Madhavan Pillai lays a wreath at the National War Memorial at Kartavya Path in New Delhi on Thursday. ANI

known as the Azad Hind Fauj, on November 1, 1943, at the age of 17.

Serving as a recruiting officer and fundraiser, he mobilised support for the INA across 32 locations in Burma, including Hanthawaddy, Sawbwagale, Ywadsanshe, Swryan, Yangon, and Mayongone. His active involvement in the freedom struggle led to his imprisonment for eight

months in the Rangoon Jail from May to December 1945, officials said.

Later, he served in the administrative branch at the INA headquarters in Rangoon under Major General K.P. Thimayya (elder brother of former Army chief General K.S. Thimayya). He was officially recognised as a freedom fighter by the Government of India on August 1, 1980.

आईएनए के वरिष्ठ सैनिक ने नेताजी और शहीदों को श्रद्धांजलि देकर मनाया 99वां जन्मदिन

Lieutenant Rangaswamy Madhavan Pillai, a veteran of the Indian National Army (INA), celebrated his 99th birthday on Thursday by laying wreaths at the National War Memorial and the statue of Netaji Subhas Chandra Bose on Kartavya Path.

भारतीय राष्ट्रीय सेना (INA) के पूर्व सैनिक लेफ्टिनेंट रंगास्वामी माधवन पिल्लई ने गुरुवार को अपना 99वां जन्मदिन मनाया, और कर्तव्य पथ पर नेताजी सुभाष चंद्र बोस की प्रतिमा और

राष्ट्रीय युद्ध स्मारक पर पुष्पांजलि अर्पित की।



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- The wreath-laying ceremony was organized by the Army, attended by senior military personnel and the public.
इस पुष्पांजलि समारोह का आयोजन भारतीय सेना द्वारा किया गया, जिसमें वरिष्ठ सैन्य अधिकारी और आम जनता उपस्थित थे।

Early life and joining INA

प्रारंभिक जीवन और आईएनए से जुड़ाव

- Lt. Pillai was born on March 13, 1926, in the Swryan township of Rangoon district, Burma (now Myanmar).
लेफ्टिनेंट पिल्लई का जन्म 13 मार्च 1926 को बर्मा (अब म्यांमार) के रंगून जिले के स्वर्यन टाउनशिप में हुआ था।
- He joined the Indian Independence League as a civilian in 1942 under Rash Behari Bose.
उन्होंने 1942 में रास बिहारी बोस के नेतृत्व में भारतीय स्वतंत्रता लीग में एक नागरिक के रूप में शामिल हुए।
- When Netaji arrived in Singapore, Lt. Pillai formally enlisted in the INA (Azad Hind Fauj) on November 1, 1943, at the age of 17.
जब नेताजी सिंगापुर पहुंचे, तो लेफ्टिनेंट पिल्लई 1 नवंबर 1943 को 17 वर्ष की उम्र में आईएनए (आज़ाद हिंद फौज) में औपचारिक रूप से भर्ती हुए।

Role in INA and imprisonment

आईएनए में भूमिका और कैद

- He served as a recruiting officer and fundraiser, mobilizing support for INA across 32 locations in Burma, including Hanthawaddy, Sawbwagale, Ywadanshe, Swryan, Yangon, and Mayongone.
उन्होंने आईएनए में एक भर्ती अधिकारी और धन संग्रहकर्ता के रूप में कार्य किया, और बर्मा के 32 स्थानों जैसे हंथावाड़ी, सावबवागले, यवाडानशे, स्वर्यन, यांगून और मार्योगोन में समर्थन जुटाया।
- Due to his active involvement in the freedom struggle, he was imprisoned for eight months in Rangoon Jail from May to December 1945.
स्वतंत्रता संग्राम में उनकी सक्रिय भागीदारी के कारण, उन्हें मई से दिसंबर 1945 तक रंगून जेल में आठ महीने कैद रखा गया।

Later service and recognition

बाद की सेवा और मान्यता

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- He later served in the administrative branch at INA headquarters in Rangoon, under Major General K.P. Thimayya, the elder brother of former Army Chief General K.S. Thimayya.
बाद में उन्होंने रंगून में आईएनए मुख्यालय की प्रशासनिक शाखा में कार्य किया, जहां वे मेजर जनरल के.पी. थिमैया (पूर्व सेना प्रमुख जनरल के.एस. थिमैया के बड़े भाई) के अधीन कार्यरत रहे।
- He was officially recognized as a freedom fighter by the Government of India on August 1, 1980.
भारत सरकार द्वारा 1 अगस्त 1980 को उन्हें आधिकारिक रूप से स्वतंत्रता सेनानी के रूप में मान्यता दी गई।

TOPICS COVERED (GS Paper I: History, Society and Geography)

1. UN accuses Israel of genocidal acts, sexual violence in Gaza

संयुक्त राष्ट्र ने गाजा में इजरायल पर नरसंहार और यौन हिंसा के आरोप लगाए

2. Old ties, new priorities

पुराने संबंध, नई प्राथमिकताएँ

3. Over 3,200 PMJAY hospitals must be penalised for fraud, regulation is required: NHA

3,200 से अधिक पीएम-जेएवाई अस्पतालों पर धोखाधड़ी के लिए दंड आवश्यक, कड़ी निगरानी जरूरी: एनएचए



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UN accuses Israel of genocidal acts, sexual violence in Gaza

GS Paper II

Reuters

GENEVA

Israel carried out “genocidal acts” against Palestinians by systematically destroying women’s healthcare facilities during the conflict in Gaza, and used sexual violence as a war strategy, United Nations experts said in a report on Thursday.

“Israeli authorities have destroyed in part the reproductive capacity of the Palestinians in Gaza as a group, including by imposing measures intended to prevent births, one of the categories of genocidal acts in the Rome Statute and the Genocide Convention,” said the UN Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem, and Israel.

Those actions, in addition to a surge in maternity deaths due to restricted access to medical supplies, amounted to the crime against humanity of extermination, the commission said.

The report accused Israel’s security forces of using forced public stripping and sexual assault as part of their standard operating procedures to punish Palestinians following the Ha-

mas-led attacks on southern Israel in October 2023.

Israel’s Prime Minister Benjamin Netanyahu rejected the report’s findings, saying they were “biased” and “antisemitic”.

“Instead of focusing on the crimes against humanity and war crimes committed by the Hamas terrorist organization...the United Nations once again chooses to attack the state of Israel with false accusations,” he said.

A previous report published by the Commission in June 2024 accused Hamas and other Palestinian armed groups of serious rights violations in the October 7, 2023 attack. In March last year, a team of UN experts said there were “reasonable grounds to believe” sexual violence, including rape, occurred at several locations during the militant group’s assault.

Israel is party to the Genocide Convention and was ordered in January 2024 by the International Court of Justice to take action to prevent acts of genocide during the war against Hamas. South Africa has brought a genocide case against Israel’s actions in Gaza at the International Court of Justice.

UN accuses Israel of genocidal acts, sexual violence in Gaza

संयुक्त राष्ट्र ने गाजा में इजरायल पर नरसंहार और यौन हिंसा के आरोप लगाए

Israel carried out “genocidal acts” against Palestinians, systematically destroying women’s healthcare facilities and using sexual violence as a war strategy, according to a UN report released on Thursday.

संयुक्त राष्ट्र की एक रिपोर्ट के अनुसार, इज़राइल ने फिलिस्तीनियों के खिलाफ "नरसंहारक कृत्य" किए, जिसमें महिलाओं की स्वास्थ्य सुविधाओं को व्यवस्थित रूप से नष्ट करना और युद्ध रणनीति के रूप में यौन हिंसा का उपयोग करना शामिल है।

• The UN Independent International Commission of Inquiry stated that Israel targeted the reproductive capacity of Palestinians in Gaza, which falls under genocidal acts as per the Rome Statute and Genocide Convention.

संयुक्त राष्ट्र की स्वतंत्र अंतरराष्ट्रीय जांच आयोग ने कहा कि इज़राइल ने गाजा में फिलिस्तीनियों की प्रजनन क्षमता को लक्षित किया, जो रोम संविधि और नरसंहार सम्मेलन के तहत नरसंहारक कृत्य की श्रेणी में आता है।

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Impact on maternal health and accusations of sexual violence मातृ स्वास्थ्य पर प्रभाव और यौन हिंसा के आरोप



- A surge in maternity deaths due to restricted access to medical supplies was classified as a crime against humanity of extermination.
चिकित्सा आपूर्ति की सीमित उपलब्धता के कारण मातृ मृत्यु दर में वृद्धि को मानवता के खिलाफ अपराध (नरसंहार) के रूप में वर्गीकृत किया गया।
- Israel's security forces were accused of forced public stripping and sexual assault as part of their standard operating procedures to punish Palestinians after the October 2023 Hamas-led attacks.
इजरायली सुरक्षा बलों पर जबरन सार्वजनिक रूप से कपड़े उतरवाने और यौन उत्पीड़न के आरोप लगाए गए, जिसे अक्टूबर 2023 में हमास के हमलों के बाद फिलिस्तीनियों को दंडित करने के लिए उनकी नियमित रणनीति का हिस्सा बताया गया।

Israel's response and counterclaims

इज़राइल की प्रतिक्रिया और प्रत्यारोप

- Israel's Prime Minister Benjamin Netanyahu rejected the UN report, calling it "biased" and "antisemitic".
इज़राइल के प्रधानमंत्री बेंजामिन नेतन्याहू ने संयुक्त राष्ट्र की रिपोर्ट को खारिज करते हुए इसे



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“पक्षपाती” और “यहूदी विरोधी” बताया।

- He stated that the UN was ignoring the crimes committed by Hamas and instead attacking Israel with false accusations.
उन्होंने कहा कि संयुक्त राष्ट्र हमास द्वारा किए गए अपराधों की अनदेखी कर रहा है और इसके बजाय इज़राइल पर झूठे आरोप लगा रहा है।

Previous UN reports and legal actions

पिछली संयुक्त राष्ट्र रिपोर्टें और कानूनी कार्रवाइयाँ

- A June 2024 UN report accused Hamas and other Palestinian armed groups of serious rights violations during the October 7, 2023, attack on Israel.
जून 2024 की एक संयुक्त राष्ट्र रिपोर्ट में हमास और अन्य फिलिस्तीनी सशस्त्र समूहों पर 7 अक्टूबर 2023 को इज़राइल पर हुए हमले के दौरान गंभीर मानवाधिकार उल्लंघन के आरोप लगाए गए।
- In March 2023, a UN team found “reasonable grounds to believe” that sexual violence, including rape, occurred at multiple locations during Hamas' attack.
मार्च 2023 में, एक संयुक्त राष्ट्र टीम ने कहा कि “उचित सबूत” हैं कि हमास के हमले के दौरान कई स्थानों पर बलात्कार सहित यौन हिंसा हुई।
- Israel, a signatory to the Genocide Convention, was ordered by the International Court of Justice (ICJ) in January 2024 to take measures to prevent genocide during its war against Hamas.
इज़राइल, जो नरसंहार सम्मेलन का हस्ताक्षरकर्ता है, को जनवरी 2024 में अंतरराष्ट्रीय न्यायालय (ICJ) द्वारा आदेश दिया गया था कि वह हमास के खिलाफ युद्ध के दौरान नरसंहार रोकने के लिए कदम उठाए।
- South Africa has filed a genocide case against Israel at the ICJ, challenging its actions in Gaza.
दक्षिण अफ्रीका ने गाजा में इज़राइल की कार्रवाई को लेकर अंतरराष्ट्रीय न्यायालय (ICJ) में नरसंहार का मामला दायर किया है।



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GS Paper II: India-Mauritius

Old ties, new priorities

The Modi visit to Mauritius focused on present-day imperatives

Prime Minister Narendra Modi's visit to Mauritius this week, and his meeting with its newly elected Prime Minister Navin Ramgoolam, marked a decade since his last visit. His trip aimed to strengthen the India-Mauritius strategic partnership and launch new economic and development initiatives. While Mr. Ramgoolam's previous tenure (2005-14) overlapped briefly with Mr. Modi's, the two leaders have maintained close ties. Even during India's strict COVID-19 lockdown, the Indian government facilitated Mr. Ramgoolam's medical evacuation to India. Acknowledging this support, Mr. Ramgoolam warmly welcomed Mr. Modi as a guest at Mauritius' National Day celebrations where he was also conferred the highest national award. Though not India's closest geographical neighbour, Mauritius remains deeply connected to India. Over 70% of Mauritians are of Indian descent, with enduring cultural ties to India. While Mr. Modi's engagements highlighted these shared historical and cultural bonds, the visit was primarily focused on strategic priorities. India seeks to strengthen its partnership with Mauritius as a key player in the Indian Ocean, an African nation, and a link to the Global South.

As part of this deepening partnership, the two leaders upgraded their strategic ties and committed to increased defence cooperation. India also announced several major economic initiatives, that include bilateral trade in national currencies, support for a new Mauritius parliament building, and a ₹487 crore credit facility to improve water infrastructure. These projects build upon previous Indian-led developments, such as an airstrip and jetty in the Agalega islands, the Mauritius Metro rail project, and the New Supreme Court Building. The visit also carried geopolitical implications. Mr. Ramgoolam has expressed a desire to renegotiate Mauritius' agreement with the U.K. regarding sovereignty over the Chagos Archipelago, home to a U.S. military base in Diego Garcia. While India helped broker the previous deal under Prime Minister Pravin Jugnauth's government, it has assured Mr. Ramgoolam of its full support in whatever course he chooses. Meanwhile, India is also watching China's growing footprint. China's strategic partnership with Mauritius includes a free trade agreement and bilateral trade worth \$1.1 billion – double that of India-Mauritius trade at \$554 million. With the PLA Navy's increased presence in the Indian Ocean, Mr. Modi's announcement of the MAHASAGAR doctrine is significant. At a time when shifting U.S. foreign policy threatens the international rules-based order, disrupts trade, and risks fragmenting global alliances into rigid spheres of influence, Mr. Modi's visit has underscored India's commitment to strengthening regional ties and reinforcing partnerships with trusted friends.

Old ties, new priorities

पुराने संबंध, नई प्राथमिकताएँ

Prime Minister Narendra Modi visited Mauritius this week and met newly elected Prime Minister Navin Ramgoolam, marking a decade since his last visit.

प्रधानमंत्री नरेंद्र मोदी ने इस सप्ताह मॉरीशस का दौरा किया और नवनिर्वाचित प्रधानमंत्री नवीन रामगुलाम से मुलाकात की, जो उनकी पिछली यात्रा के एक दशक बाद हुई।

• His visit aimed to **strengthen the India-Mauritius strategic partnership and launch new economic and development initiatives.**

उनकी यात्रा का उद्देश्य भारत-मॉरीशस रणनीतिक साझेदारी को मजबूत करना और नई आर्थिक एवं विकास पहलों की शुरुआत करना था।

• **During India's strict COVID-19 lockdown, India facilitated Mr. Ramgoolam's medical evacuation, which he acknowledged during the visit.**

भारत के सख्त COVID-19 लॉकडाउन के दौरान, भारत ने श्री रामगुलाम की चिकित्सा निकासी की व्यवस्था की, जिसे उन्होंने अपनी यात्रा के दौरान स्वीकार किया।

• **Mr. Modi was the chief guest at Mauritius' National Day celebrations, where he was also conferred the country's highest national award.**

श्री मोदी मॉरीशस के राष्ट्रीय दिवस समारोह में मुख्य अतिथि थे, जहाँ उन्हें देश का सर्वोच्च राष्ट्रीय पुरस्कार भी प्रदान किया गया।

India-Mauritius cultural and historical ties

भारत-मॉरीशस के सांस्कृतिक और ऐतिहासिक संबंध

• **Over 70% of Mauritians are of Indian descent, maintaining deep cultural ties with India.**

70% से अधिक मॉरीशस की आबादी भारतीय मूल की है, जिनके भारत के साथ गहरे सांस्कृतिक संबंध हैं।

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- While Mr. Modi's visit highlighted these historical and cultural bonds, the focus was mainly on strategic priorities.
श्री मोदी की यात्रा ने इन ऐतिहासिक और सांस्कृतिक संबंधों को उजागर किया, लेकिन मुख्य ध्यान रणनीतिक प्राथमिकताओं पर था।
- India sees Mauritius as a key partner in the Indian Ocean, an African nation, and a bridge to the Global South.
भारत मॉरीशस को हिंद महासागर में एक प्रमुख भागीदार, एक अफ्रीकी राष्ट्र और ग्लोबल साउथ से जोड़ने वाला पुल मानता है।

Strategic and economic partnerships

रणनीतिक और आर्थिक साझेदारी

- India and Mauritius upgraded their strategic ties and committed to increased defence cooperation.
भारत और मॉरीशस ने अपनी रणनीतिक साझेदारी को अपग्रेड किया और रक्षा सहयोग को बढ़ाने की प्रतिबद्धता जताई।
- India announced major economic initiatives, including:
 - Bilateral trade in national currencies
 - Support for a new Mauritius parliament building
 - A ₹487 crore credit facility to improve water infrastructure
भारत ने कई प्रमुख आर्थिक पहलें घोषित कीं, जिनमें शामिल हैं:
 - राष्ट्रीय मुद्राओं में द्विपक्षीय व्यापार
 - नए मॉरीशस संसद भवन के निर्माण में सहायता
 - ₹487 करोड़ की ऋण सुविधा जल अवसंरचना सुधारने के लिए
- These projects build on previous Indian-led developments, such as:
 - An airstrip and jetty in the Agalega islands
 - Mauritius Metro rail project
 - New Supreme Court Building
ये परियोजनाएँ भारत द्वारा पहले से संचालित विकास कार्यों पर आधारित हैं, जैसे:
 - अगलेगा द्वीप में हवाई पट्टी और जेटी
 - मॉरीशस मेट्रो रेल परियोजना
 - नया सर्वोच्च न्यायालय भवन



Geopolitical implications and China's growing influence

भू-राजनीतिक प्रभाव और चीन का बढ़ता प्रभाव

- Mauritius wants to renegotiate its agreement with the U.K. over the Chagos Archipelago, home to a U.S. military base in Diego Garcia.
मॉरीशस ब्रिटेन के साथ चागोस द्वीपसमूह को लेकर अपने समझौते को फिर से बातचीत करना चाहता है, जहाँ डिएगो गार्सिया में एक अमेरिकी सैन्य अड्डा स्थित है।
- India played a key role in brokering the previous agreement and assured full support to Mr. Ramgoolam in his approach.
भारत ने पिछले समझौते को कराने में महत्वपूर्ण भूमिका निभाई थी और श्री रामगुलाम को उनके रुख पर पूरा समर्थन देने का आश्वासन दिया।
- China's increasing footprint in Mauritius includes a free trade agreement and bilateral trade worth \$1.1 billion, double that of India-Mauritius trade (\$554 million).
मॉरीशस में चीन का बढ़ता प्रभाव एक मुक्त व्यापार समझौते और \$1.1 बिलियन के द्विपक्षीय व्यापार को शामिल करता है, जो भारत-मॉरीशस व्यापार (\$554 मिलियन) से दोगुना है।
- With the PLA Navy's growing presence in the Indian Ocean, Mr. Modi's announcement of the MAHASAGAR doctrine is significant.
पीएलए नौसेना की हिंद महासागर में बढ़ती उपस्थिति को देखते हुए, श्री मोदी द्वारा महासागर सिद्धांत की घोषणा महत्वपूर्ण है।

Strengthening regional ties amid global shifts

वैश्विक परिवर्तनों के बीच क्षेत्रीय संबंधों को मजबूत करना

- U.S. foreign policy shifts have threatened the international rules-based order, disrupted trade, and led to fragmentation of global alliances.
अमेरिकी विदेश नीति में बदलाव ने अंतरराष्ट्रीय नियम-आधारित व्यवस्था को खतरे में डाल दिया है, व्यापार को बाधित किया है और वैश्विक गठबंधनों में विघटन लाया है।
- Mr. Modi's visit reaffirmed India's commitment to regional partnerships and trusted allies.
श्री मोदी की यात्रा ने क्षेत्रीय भागीदारी और भरोसेमंद मित्र देशों के प्रति भारत की प्रतिबद्धता को फिर से पुष्टि की।



Over 3,200 PMJAY hospitals must be penalised for fraud, regulation is required: NHA

GS Paper II: Government Scheme

Bindu Shajan Perappadan
NEW DELHI

Almost 600 hospitals across India should be suspended and another 1,113 removed from the panel of the Centre's flagship health insurance scheme, and penalties totalling ₹122 crore should be levied against 1,504 errant hospitals, according to recommendations made by the National Health Authority's anti-fraud unit.

Noting the unit's report on the misuse of funds under the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), the Parliamentary Standing Committee on Health and Family Welfare expressed concern about the way some hospitals were carrying out such fraudulent activities as part of their business model.



Vital scheme: AB-PMJAY benefits about 12.37 crore families in the country.

Regulation is needed to check such fraud, the committee said in its report on the Demand for Grants tabled in Parliament on March 12.

AB-PMJAY provides annual health coverage worth ₹5 lakh per family for secondary and tertiary care hospitalisation, benefiting about 12.37 crore families from the economically vulnerable bottom

40% of India's population.

In its reply to the committee's report, the Department of Health and Family Welfare noted that the National Health Authority (NHA) has adopted a zero-tolerance policy towards fraud and abuse, and has taken steps to prevent, detect, and deter different kinds of fraud at various stages of AB-PMJAY's implementation.

The committee recommended that the NHA implement a proactive, data-driven, and transparent monitoring system focusing on early detection of potential misuse patterns in AB-PMJAY.

The department can consider making extensive use of artificial intelligence and digital tools during the collection and analysis of statistical data and feedback, it added.

Over 3,200 PMJAY hospitals must be penalised for fraud, regulation is required: NHA

3,200 से अधिक पीएम-जेएवाई अस्पतालों पर धोखाधड़ी के लिए दंड आवश्यक, कड़ी निगरानी जरूरी: एनएचए

Nearly 600 hospitals should be suspended, and another 1,113 removed from the panel of the Centre's flagship health insurance scheme.

लगभग 600 अस्पतालों को निलंबित किया जाना

चाहिए और 1,113 अन्य को केंद्र की प्रमुख स्वास्थ्य बीमा योजना के पैनल से हटाया जाना चाहिए।

- Penalties totaling ₹122 crore should be imposed against 1,504 fraudulent hospitals, as recommended by the National Health Authority's (NHA) anti-fraud unit. राष्ट्रीय स्वास्थ्य प्राधिकरण (एनएचए) की धोखाधड़ी-रोधी इकाई की सिफारिश के अनुसार, 1,504 अस्पतालों पर ₹122 करोड़ का जुर्माना लगाया जाना चाहिए।



Concerns raised by the Parliamentary Standing Committee

संसदीय स्थायी समिति की चिंताएँ

- The anti-fraud unit's report highlighted misuse of funds under Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY).
धोखाधड़ी-रोधी इकाई की रिपोर्ट में आयुष्मान भारत-प्रधानमंत्री जन आरोग्य योजना (AB-PMJAY) के तहत धन के दुरुपयोग पर प्रकाश डाला गया।
- Some hospitals were engaging in fraudulent activities as part of their business model, which raised concerns in the Parliamentary Standing Committee on Health and Family Welfare.
कुछ अस्पताल अपने व्यावसायिक मॉडल के रूप में धोखाधड़ी गतिविधियों में शामिल थे, जिससे संसदीय स्वास्थ्य और परिवार कल्याण स्थायी समिति ने चिंता व्यक्त की।
- The committee emphasized the need for stricter regulations to prevent such frauds, as mentioned in its Demand for Grants report tabled in Parliament on March 12.
समिति ने इस तरह की धोखाधड़ी को रोकने के लिए कड़े नियमों की आवश्यकता पर जोर दिया, जैसा कि 12 मार्च को संसद में पेश किए गए अनुदान मांग रिपोर्ट में उल्लेख किया गया।

Overview of AB-PMJAY and its beneficiaries

AB-PMJAY योजना और उसके लाभार्थी

- AB-PMJAY provides annual health coverage of ₹5 lakh per family for secondary and tertiary hospital care.
AB-PMJAY प्रति परिवार ₹5 लाख की वार्षिक स्वास्थ्य कवरेज प्रदान करता है, जो माध्यमिक और तृतीयक अस्पताल देखभाल के लिए है।
- It benefits approximately 12.37 crore families, covering the economically weaker 40% of India's population.
यह लगभग 12.37 करोड़ परिवारों को लाभ पहुंचाता है, जो भारत की आर्थिक रूप से कमजोर 40% आबादी को कवर करता है।

NHA's stance on fraud prevention

एनएचए का धोखाधड़ी रोकने पर रुख



- The Department of Health and Family Welfare stated that NHA follows a zero-tolerance policy towards fraud and abuse.
स्वास्थ्य और परिवार कल्याण विभाग ने कहा कि एनएचए धोखाधड़ी और दुरुपयोग के प्रति शून्य-सहनशीलता नीति अपनाता है।
- Measures have been taken to prevent, detect, and deter fraudulent activities at various stages of AB-PMJAY's implementation.
AB-PMJAY के कार्यान्वयन के विभिन्न चरणों में धोखाधड़ी की गतिविधियों को रोकने, पहचानने और हतोत्साहित करने के लिए उपाय किए गए हैं।

Recommendations for better monitoring

बेहतर निगरानी के लिए सिफारिशें

- The committee urged NHA to implement a proactive, data-driven, and transparent monitoring system.
समिति ने एनएचए से सक्रिय, डेटा-आधारित और पारदर्शी निगरानी प्रणाली लागू करने का आग्रह किया।
- Early detection of fraudulent patterns in AB-PMJAY should be prioritized.
AB-PMJAY में धोखाधड़ी के पैटर्न की प्रारंभिक पहचान को प्राथमिकता दी जानी चाहिए।
- The department should consider using artificial intelligence (AI) and digital tools for data collection and analysis.
विभाग को डेटा संग्रह और विश्लेषण के लिए कृत्रिम बुद्धिमत्ता (AI) और डिजिटल टूल्स का उपयोग करने पर विचार करना चाहिए।

TOPICS COVERED (GS Paper I: History, Society and Geography)

1. **Madras HC fixes a cap on tourist vehicles to the Nilgiris, Kodaikanal**
मद्रास उच्च न्यायालय ने नीलगिरी और कोडाइकनाल में पर्यटक वाहनों की संख्या तय की
2. **Raising the rusty dust of red soil**
लाल मिट्टी की धूल से उठता संकट
3. **Acceptable Contrast: Economic Trends**
स्वीकार्य विरोधाभास: आर्थिक प्रवृत्तियाँ



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YOUTUBE CHANNEL: <https://www.youtube.com/@PatrioticIAS>

CONTACT: 9971932488



4. **How Can India Meet Its Rising Power Demand?**
भारत अपनी बढ़ती बिजली मांग को कैसे पूरा कर सकता है?

5. **Understanding the Neurobiological Basis of Substance Abuse Addiction**

मादक पदार्थों की लत के तंत्रिका जैविक आधार को समझना

6. **Auction of licences to explore critical minerals launched**
महत्वपूर्ण खनिजों की खोज के लिए लाइसेंस की नीलामी शुरू

7. **ISRO undocks SpaDeX satellites in first attempt**
ISRO ने पहले प्रयास में SpaDeX उपग्रहों को अनडॉक किया

8. **Hubs to develop quantum technology made operational**
क्वांटम तकनीक विकसित करने के लिए हब किए गए संचालित

9. **Lenders funding emerging green projects at higher risk**
नए हरित परियोजनाओं को वित्तपोषित करने वाले ऋणदाताओं के लिए उच्च जोखिम

10. **Kidney disease no longer just for the elderly, say experts**

गुर्दे की बीमारी अब केवल बुजुर्गों तक सीमित नहीं, विशेषज्ञों का मत

11. **What is Hantavirus and how does it spread?**
हंटावायरस क्या है और यह कैसे फैलता है?



Madras HC fixes a cap on tourist vehicles to the Nilgiris, Kodaikanal

GS Paper III: Environment Act

Mohamed Imranullah S.
CHENNAI

The Madras High Court on Thursday fixed a cap on vehicles entering the Nilgiris during the summer season between April and June this year, limiting the number to 6,000 tourist vehicles a day during weekdays and 8,000 vehicles during weekends. The cap for Kodaikanal is 4,000 vehicles a day during weekdays and 6,000 during weekends.

A special Division Bench of Justices N. Sathish Kumar and D. Bharatha Chakravarthy made it clear the cap would not apply to the tourists who visit the hill stations using public trans-



The cap does not apply to vehicles of local residents and those transporting essential commodities. SATHYAMOORTHY M

port such as government buses and trains, and to the vehicles of local residents and those transporting essential commodities.

The orders were passed after taking note that only 23,000 tourists could be accommodated in a day (at

the 1,035 commercial accommodations with 5,620 rooms, apart from 575 licensed homestays) in the Nilgiris and only a much smaller number of tourists could be accommodated in Kodaikanal.

The Bench also ordered

that the tourists visiting the hill stations in e-vehicles should be given preference in issuance of e-pass and directed the local bodies concerned to take steps for establishment of enough number of electric charging points for the benefit of e-vehicle users.

The judges requested Advocate General P.S. Raman to persuade the State government to deploy mini e-buses with transparent bodies to encourage the tourists to park their private motor vehicles on the foothills and undertake the tour to the hill stations in those buses.

CONTINUED ON
» PAGE 12

Madras HC fixes a cap on tourist vehicles to the Nilgiris, Kodaikanal

मद्रास उच्च न्यायालय ने नीलगिरी और कोडाइकनाल में पर्यटक वाहनों की संख्या तय की

The Madras High Court has imposed a limit on the number of vehicles entering the Nilgiris and Kodaikanal during the summer season (April to June 2024).

मद्रास उच्च न्यायालय ने ग्रीष्मकाल (अप्रैल से जून 2024) के दौरान नीलगिरी और कोडाइकनाल में प्रवेश करने वाले वाहनों की संख्या पर सीमा तय की है।



- For the Nilgiris:
 - 6,000 tourist vehicles per day on weekdays
 - 8,000 tourist vehicles per day on weekends
 - नीलगिरी के लिए:
 - सप्ताह के दिनों में प्रतिदिन 6,000 पर्यटक वाहन
 - सप्ताहांत पर प्रतिदिन 8,000 पर्यटक वाहन
- For Kodaikanal:
 - 4,000 tourist vehicles per day on weekdays
 - 6,000 tourist vehicles per day on weekends
 - कोडाइकनाल के लिए:
 - सप्ताह के दिनों में प्रतिदिन 4,000 पर्यटक वाहन
 - सप्ताहांत पर प्रतिदिन 6,000 पर्यटक वाहन

Exemptions from the vehicle cap

वाहनों की सीमा से छूट

- Tourists traveling via public transport (government buses and trains) are exempted from the cap.
जो पर्यटक सार्वजनिक परिवहन (सरकारी बसों और ट्रेनों) से यात्रा कर रहे हैं, उन्हें इस सीमा से छूट दी गई है।
- Local residents and vehicles carrying essential commodities are also exempted.
स्थानीय निवासी और आवश्यक वस्तुओं की आपूर्ति करने वाले वाहन भी इस सीमा से मुक्त रहेंगे।

Court's rationale for imposing the limit

अदालत द्वारा सीमा निर्धारित करने का कारण

- The Nilgiris can accommodate only 23,000 tourists per day, considering the availability of 1,035 commercial accommodations with 5,620 rooms, and 575 licensed homestays.
नीलगिरी में प्रतिदिन केवल 23,000 पर्यटकों को समायोजित करने की क्षमता है, जिसमें 1,035 वाणिज्यिक आवासों में 5,620 कमरे और 575 लाइसेंस प्राप्त होमस्टे शामिल हैं।
- Kodaikanal has an even smaller capacity for tourists.
कोडाइकनाल में पर्यटकों को समायोजित करने की क्षमता और भी कम है।



Promotion of electric vehicles

इलेक्ट्रिक वाहनों को बढ़ावा

- Tourists using electric vehicles will be given priority in e-pass issuance.
इलेक्ट्रिक वाहन का उपयोग करने वाले पर्यटकों को ई-पास जारी करने में प्राथमिकता दी जाएगी।
- The local bodies have been directed to set up enough electric charging points for e-vehicle users.
स्थानीय निकायों को ई-वाहन उपयोगकर्ताओं के लिए पर्याप्त इलेक्ट्रिक चार्जिंग प्वाइंट स्थापित करने के निर्देश दिए गए हैं।

Encouraging eco-friendly transport

पर्यावरण अनुकूल परिवहन को बढ़ावा

- The judges urged the Advocate General to persuade the State government to introduce mini e-buses with transparent bodies.
न्यायाधीशों ने महाधिवक्ता से आग्रह किया कि वे राज्य सरकार को पारदर्शी बॉडी वाले मिनी ई-बसें शुरू करने के लिए प्रेरित करें।
- The aim is to encourage tourists to park their private vehicles at the foothills and use these buses for hill station visits.
इसका उद्देश्य पर्यटकों को उनके निजी वाहन पहाड़ियों के निचले हिस्से में पार्क करने और इन बसों का उपयोग करने के लिए प्रेरित करना है।





Raising the rusty dust of red soil

Residents from six villages of **Sindhudurg district in Maharashtra** oppose **iron ore mining projects** entering their lands. **Purnima Sah** reports on their fear of **losing natural resources, livelihoods, and their health**, much like Redi, their neighbouring village

GS Paper III: Mining and Ecology

The Aijgon zila parishad government school library in Sawantwadi taluka, in Sindhudurg district, Maharashtra, is over 100 years old. On the first floor of the building, about 40 people between 20 and 70 are gathered from the villages around. On the walls are painted pictures of **Savitribai Phule, C.V. Raman, and other social reformers**. People have come in from neighbouring villages to discuss their worry over the ongoing **geological survey for a potential mine** in Nanos village.

Mahadev Shetye, 52, a farmer from Nanos, says that in October 2024, when he was climbing the hill to his farm, he heard the sound of machines drilling the earth and felt tremors. He ventured into the forest and saw a patch of land had been cleared of fruit trees. **Mahadev himself grows cashew, mango, jackfruit, along with chawli (black-eyed peas), and suran (elephant foot yam).**

He says he saw three men holding "some machines". One, sitting next to a jar of red paint with a brush in hand, was marking a plastic box that held samples of stones and soil. "They said they had been hired by a mining company to conduct a survey of the land, as there could be a mineral to be mined. I rushed to the sarpanch (village head) with other residents of Nanos, but she too was not aware of this," says Mahadev.

In July 2022, the **Directorate of Geology and Mining, Government of Maharashtra**, had commissioned an iron ore mine in Agraivadi and Nanos villages on 372 hectares of land to the **Goa-based Societade De Fomento Industrial Pvt Ltd**. The first villagers say they heard about it was in October 2024, with the start of drilling sounds.

The Nanos population of around 600 people, is against the impending mining. They feel it will upset the balance of natural resources that will in turn impact their livelihood. From the mining experience of another neighbouring village, Redi, they also fear **health conditions** that come from the **red dust that hangs in the air**.

The next shock for the residents came when they learnt about another agreement signed between **JSW Steel Limited and the District Mining Officer of Sindhudurg**, Government of Maharashtra, in 2024. This granted a **prospecting licence of iron ore** in the Aijgon block, which included Shiroda, Aravali, Talavne, Nanos, and Malewad villages of Sawantwadi taluka.

JSW Steel Ltd has been given the right to conduct an initial investigation of **geology and mineral resources** in 849 hectares of land for iron ore, manganese, chrome, and nickel associated minerals. A prospecting licence for mining is a government permit granted by the government to a mining company to conduct initial investigations to determine if mining operations are viable in that location. If minerals are discovered, a mining lease is granted.

A looming presence
Sindhudurg, the southernmost district of Maharashtra, is bordered by the Sahyadri mountain range on the east and the Arabian sea on the west. It harbours varied habitats and a rich biodiversity. In Nanos, like several other villages, people create step-like platforms on steep slopes to either practise farming or build their homes. Any movement on the hill above could have an impact on those living below or around them.

They said they had been hired by a mining company to conduct a survey of the land, as there could be a mineral to be mined. I rushed to the sarpanch (village head) with other residents of Nanos, but she too was not aware of this

MAHADEV SHETYE
Farmer from Nanos

At the meeting, people talk over each other for about half an hour, expressing their anxiety. Sagar Somkant Nanoskar, 36, who makes *kokum sharbat* (juice made from a fruit from the mangosteen family), in Nanos, is asking Ramesh Gauns, 74, a retired schoolteacher from Bicholim in Goa, to guide the villagers with steps they can take to stop the mining projects. Gauns is an environmental activist, who has taken the Vedanta group to the National Green Tribunal over their mining project in Bicholim, and several other mining companies to the Supreme Court. "First decide, whether you want *khaani* (mines) or *paani* (water)," he asks and people respond, "Paani".

"So far, we have examined the geographical location of this region and taken photographs and maps of forest patches, water resources, hills, schools, religious sanctums, and homes. Our next step is to file RTI (Right to Information) requests with the forest department, mining department, water resource department, pollution control board, and local panchayat body". Gauns shares with the attendees. After they receive the responses, they will file a case against the authorities, he says. He warns that since it is not a tribal village, their fight with the mining company could be extra challenging.

He explains that a gram sabha resolution in a non-tribal area around a mining project does hold weight, as it represents the collective voice of the community, but its legal power is less robust compared to a resolution passed in a Scheduled Area. "There, under the provision of the Panchayats (Extension to Scheduled Areas) Act (PESA), 1996, gram sabhas have greater authority over forest land and resource management due to the tribal population's rights," he says.

Nanos sarpanch, Prajakta Umesh Shetye, says that government authorities did not inform her or any villager about the geological survey. It was only when drilling sounds were heard that she approached the District Collector's office, where she learnt about the mining contract.

"I wrote a letter to oppose the prospective mining operation in our village, but the gram panchayat members filed a no-confidence motion against me. In the first week of March 2025, I received orders from government officials to cooperate with the survey. I will have to obey to the orders," she says.



Activist-environmentalist Ramesh Gauns, Aijgon sarpanch Yashashree Saudagar at a village meeting, EMMANUAL YOGINI

Nanos residents accuse the sarpanch and her husband of having sold the village out for personal gain. The sarpanch's husband, Umesh Purushottam Shetye says the new mining projects will create jobs.

In their letter in 2022 to the gram panchayat of the Vengurla taluka, Sindhudurg district, for another project seeking a no-objection certificate, JSW Steel had said that they would "mostly carry out... surface exploration followed by drilling in the mineral potential areas" but that "there will be no damage of the land in the grant area".

Ecologically sensitive zones

The Maharashtra Minor Mineral Extraction Rules, 2013, says that no commercial quarrying can take place in an eco-sensitive zone. Also, for the mining of minerals, the prior approval of local bodies such as gram sabhas or a municipality is necessary.

A Central government report, updated in July 2024, identified approximately 35% of the Western Ghats as ecologically sensitive. It covers 56,825.7 square km, spread across Maharashtra, Gujarat, Goa, Karnataka, Kerala, and Tamil Nadu.

A July 6, 2022, gazette notification of the Ministry of Environment, Forest and Climate Change,

Government of India, says that the Western Ghats are an important geological landform and a global biodiversity hotspot. As per the notification, all the Sindhudurg villages where mining prospecting licences have been granted, either fall under the eco-sensitive zone or eco-sensitive buffer zones.

Nanoskar and about 50 others had planned to go on a hunger strike against the ongoing survey on Republic Day, but the day before, on January 25, the Sindhudurg District Collector's office called them for a meeting with the Guardian Minister of the district and the Minister of Fisheries and Ports in Maharashtra, Nitesh Narayan Rane.

"The Minister assured us that no mining project would be forced on us if the entire village was against it. The Minister assured us that no mining project would be forced on us if the entire village was against it. He directed the mining department to prepare a report saying that villagers are against it and submit it to the State and Central government. But since then, there has been no update," says Nanoskar.

Over a call, the Minister says, "No mining project can start without the consent of people. In a meeting with the residents in January, I had assured them that even if it is a Central government project and approval has come, as a Guardian Minister, it is my duty to preserve the natural resources in Sindhudurg."

Depleting resources

Nanos' residents' fears stem from iron ore mining in Redi that began in the late 1950s and continues to date. Redi is about 8 kilometres from Nanos and

6 km from Aijgon, where the meeting is held. Several companies operate here.

Aijgon sarpanch Yashashree Saudagar says, "Once Redi used to be like our village; today it is only covered in red dust. We do not want a Redi to be repeated." Redi's people were once farmers and fisherfolk. The forests and coasts only had sounds of the waves hitting the beach and the chirping of birds.

Now, villagers say that all they hear is the noise heavy lorries transporting minerals sold across India and the world. Over the years, their independent livelihoods have been denuded. Now, they mostly work for the mining companies as labourers and cleaners.

In Nanos, every house in the village has a kitchen garden where red and green chillies, ladies' fingers, and brinjal grow. Fruit trees like mango and *chikoo* (sapota) are everywhere.

Prasad Gawade, 31, an environmentalist, popular as Konkani Rammanus on Instagram, has been creating awareness on the rich biodiversity of Sindhudurg since 2019. "If giant companies start mining in this area, there can be major environmental disasters. Every region in this district grows some crops: paddy, pulses, fruits, vegetables, and brinjal grow. Fruit trees like mango and *chikoo* (sapota) are everywhere. The coastal residents, *kalis*, practise fishing," says Gawade, emphasising the need to have an environmental impact assessment study to understand the impact of mining projects in eco-sensitive zones.

He claims Sindhudurg has over 2,000 sacred groves that are home to ancient deities. "We have a rare freshwater wetland which we call, *dev ka jungle* (forest of the gods). There is a unique flowering tree called *surangi* that blooms in spring and *nagesar* flower that is used to make perfume. There are salt pans and freshwater fish too," he says, adding that the lateritic rock on the Konkarn coast acts as an aquifer.

On March 22, 2024, the Bombay High Court had declared Sawantwadi and Dodamarg (both in Sindhudurg district) an ecologically sensitive area to ensure protection for the wildlife corridor. Stalin Dayanand, project director of Vanashakti, a Mumbai-based non-profit that works towards restoring natural habitats and protecting biological diversity across Maharashtra, was one of the petitioners.

He says, "People in Dodamarg have seen how the only mine at Kalane, just 10 km away, destroyed forests and wildlife habitats, and caused natural disasters like landslides." He says the court took evidence into account, but, "The State government is yet to comply with the order."

Redi's health crisis

Depleting natural resources though, are not the only fear of the villagers. Dr. Vivek Eknath Redkar, who has worked for over 35 years treating and studying people exposed to mining in Maharashtra, has published various scientific research papers on the issue. One of his research papers published in the *European Heart Journal* found that because of deeply dug mines, the groundwater table of wells has gone down.

"In our 2019 research, we found that all water sources in Redi were contaminated with metals, unsuitable for drinking by humans or animals. The water contains high levels of fluoride, detrimental to bone and tooth health. It also causes gastrointestinal infections," Dr. Redkar, who runs the Redkar Charitable Hospital in Redi, says.

His research among 4,000 people found that a region exposed to mining for over 60 years has congestive cardiac failure because of repeated lungs infections. "Such patients were given steroids on a repetitive basis that later caused diabetes in the area. At present, every 5 patients out of 10 suffers from diabetes that could have been avoided if they had been given masks."

Sunanda Gawande, 84, from Sukalbhath hamlet in Redi, suffers from acute bronchitis. She has an oxygen cylinder at home to use in emergencies. "My husband used to load and unload minerals in the minefields. He had two heart attacks between 50 and a third one at 76, when he died."

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Raising the rusty dust of red soil

लाल मिट्टी की धूल से उठता संकट

Residents of six villages in Sindhudurg district, Maharashtra, oppose iron ore mining projects fearing loss of natural resources, livelihoods, and health.

महाराष्ट्र के सिंधुदुर्ग जिले के छह गांवों के निवासी लौह अयस्क खनन परियोजनाओं का विरोध कर रहे हैं, क्योंकि उन्हें प्राकृतिक संसाधनों, आजीविका और स्वास्थ्य के नुकसान का डर है।

- Their concerns stem from the negative impact of mining in Redi, a neighboring village.
उनकी चिंताएँ रेडी गांव में खनन के दुष्प्रभावों से उपजी हैं।

Discovery of unauthorized mining surveys

अवैध खनन सर्वेक्षण की खोज

- In October 2024, Mahadev Shetye, a farmer from Nanos, discovered a geological survey in progress without villagers' knowledge.
अक्टूबर 2024 में, नैनोस गांव के किसान महादेव शेट्ये ने बिना ग्रामीणों की जानकारी के चल रहे भूवैज्ञानिक सर्वेक्षण को देखा।
- He noticed drilling activities, land cleared of fruit trees, and workers collecting soil and stone samples.
उन्होंने ड्रिलिंग गतिविधियाँ, फलों के पेड़ों की कटाई, और मिट्टी व पत्थर के नमूने एकत्र करते हुए श्रमिकों को देखा।
- The survey team informed him that they were hired by a mining company to explore mineral deposits.
सर्वेक्षण दल ने बताया कि उन्हें खनिज जमा की खोज के लिए एक खनन कंपनी ने नियुक्त किया है।

Government approvals without public awareness

जनता की जानकारी के बिना सरकारी स्वीकृति

- In July 2022, the Maharashtra Directorate of Geology and Mining allotted a 372-hectare iron ore mining project in Agralvadi and Nanos to Sociedade De Fomento Industrial Pvt Ltd, a Goa-based company.
जुलाई 2022 में, महाराष्ट्र भूविज्ञान और खनन निदेशालय ने 372 हेक्टेयर भूमि पर अग्रालवाड़ी और



TELEGRAM CHANNEL: <https://t.me/patrioticIAS>

YOUTUBE CHANNEL: <https://www.youtube.com/@PatrioticIAS>

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नैनोस में लौह अयस्क खनन परियोजना गोवा स्थित सोसाइडेड डी फोमेंटो इंडस्ट्रियल प्राइवेट लिमिटेड को आवंटित की।

- The villagers became aware of this only in October 2024, when the drilling began. गांव वालों को इसकी जानकारी केवल अक्टूबर 2024 में मिली, जब ड्रिलिंग शुरू हुई।
- Nanos village, with a population of around 600, strongly opposes mining due to its potential impact on natural resources, livelihoods, and health. लगभग 600 की आबादी वाला नैनोस गांव खनन का कड़ा विरोध कर रहा है, क्योंकि इससे प्राकृतिक संसाधनों, आजीविका और स्वास्थ्य पर प्रतिकूल प्रभाव पड़ सकता है।

JSW Steel's mining expansion in Sindhudurg

सिंधुदुर्ग में जेएसडब्ल्यू स्टील का खनन विस्तार

- In 2024, JSW Steel Limited signed an agreement with the Sindhudurg District Mining Officer for iron ore prospecting in Ajaon block. 2024 में, जेएसडब्ल्यू स्टील लिमिटेड ने सिंधुदुर्ग जिला खनन अधिकारी के साथ अजगाँव ब्लॉक में लौह अयस्क की खोज के लिए समझौता किया।
- The agreement covers 849 hectares, including the villages of Shiroda, Aravali, Talavne, Nanos, and Malewad. यह समझौता 849 हेक्टेयर भूमि को कवर करता है, जिसमें शिरोदा, आरावली, तालवने, नैनोस और मालेवाड़ गांव शामिल हैं।
- JSW Steel received a prospecting licence to assess the potential of iron ore, manganese, chrome, and nickel mining. जेएसडब्ल्यू स्टील को लौह अयस्क, मँगनीज, क्रोम, और निकेल खनन की संभावना का मूल्यांकन करने के लिए एक खोजी लाइसेंस मिला।
- If viable mineral deposits are found, the company can obtain a full mining lease. यदि खनिज भंडार पर्याप्त मात्रा में पाए जाते हैं, तो कंपनी पूर्ण खनन पट्टा प्राप्त कर सकती है।

A looming presence

मंडराता हुआ संकट

- Sindhudurg, the southernmost district of Maharashtra, is bordered by the Sahyadri mountain range to the east and the Arabian Sea to the west. महाराष्ट्र का दक्षिणी जिला सिंधुदुर्ग पूर्व में सहयाद्री पर्वतमाला और पश्चिम में अरब सागर से घिरा हुआ है।

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- The region has a rich biodiversity and varied habitats, with people using step-like platforms on steep slopes for farming and housing.
यह क्षेत्र समृद्ध जैव विविधता और विभिन्न प्रकार के आवासों से भरा है, जहाँ लोग खेती और घर बनाने के लिए खड़ी ढलानों पर सीढ़ीनुमा प्लेटफार्मों का उपयोग करते हैं।
- Any movement on the hills above can directly impact those living below or around them.
ऊपर पहाड़ियों पर कोई भी हलचल नीचे या आसपास रहने वालों को सीधे प्रभावित कर सकती है।

Villagers' concerns over mining projects

खनन परियोजनाओं को लेकर ग्रामीणों की चिंताएँ

- At a meeting in Ajgaon Zila Parishad government school, around 40 villagers gathered to discuss their concerns about the ongoing geological survey in Nanos village.
अजगाँव जिला परिषद सरकारी स्कूल में एक बैठक में लगभग 40 ग्रामीण इकट्ठा हुए, जहाँ उन्होंने नैनोस गांव में चल रहे भूवैज्ञानिक सर्वेक्षण को लेकर अपनी चिंताओं पर चर्चा की।
- Sagar Somkant Nanoskar, a kokum sharbat producer, sought advice from environmental activist Ramesh Gauns.
कोकम शरबत निर्माता सागर सोमकांत नानोसकर ने पर्यावरण कार्यकर्ता रमेश गॉस से सलाह मांगी।
- Gauns, who has fought against Vedanta Group and other mining companies, asked the villagers to choose between 'khaani' (mines) or 'paani' (water), to which they responded, "Paani".
गॉस, जिन्होंने वेदांता समूह और अन्य खनन कंपनियों के खिलाफ कानूनी लड़ाई लड़ी है, ने ग्रामीणों से 'खानी' (खनन) और 'पानी' (जल) में से चुनने को कहा, जिस पर सभी ने "पानी" का समर्थन किया।

Legal steps and challenges in non-tribal areas

गैर-आदिवासी क्षेत्रों में कानूनी प्रक्रिया और चुनौतियाँ

- Gauns and the villagers have collected photographs and maps of forest patches, water resources, schools, temples, and homes for evidence.
गॉस और ग्रामीणों ने साक्ष्य के रूप में जंगल के हिस्सों, जल संसाधनों, स्कूलों, मंदिरों और घरों के फोटो और नक्शे एकत्र किए हैं।
- They plan to file RTI (Right to Information) requests with multiple departments, including the forest, mining, water resources, pollution control board, and local panchayat.



वे वन विभाग, खनन विभाग, जल संसाधन विभाग, प्रदूषण नियंत्रण बोर्ड और स्थानीय पंचायत सहित विभिन्न विभागों में आरटीआई (सूचना का अधिकार) आवेदन दायर करने की योजना बना रहे हैं।

- Since Nanos is not a tribal village, their legal battle against the mining company will be tougher.
चूँकि नैनोस एक आदिवासी गांव नहीं है, इसलिए खनन कंपनी के खिलाफ उनकी कानूनी लड़ाई अधिक कठिन होगी।
- Gram Sabha resolutions in non-tribal areas hold less legal power compared to those in Scheduled Areas under the PESA Act, 1996.
गैर-आदिवासी क्षेत्रों में ग्राम सभा प्रस्तावों की कानूनी शक्ति अनुसूचित क्षेत्रों में PESA अधिनियम, 1996 के तहत पारित प्रस्तावों की तुलना में कम होती है।

Sarpanch's struggle against mining operations

खनन परियोजनाओं के खिलाफ सरपंच की लड़ाई

- Nanos Sarpanch, Prajakta Umesh Shetye, stated that the government did not inform her or the villagers about the geological survey.
नैनोस की सरपंच प्राजक्ता उमेश शेट्ये ने कहा कि सरकार ने उन्हें या ग्रामीणों को भूवैज्ञानिक सर्वेक्षण के बारे में कोई सूचना नहीं दी।
- She only learned about the mining contract after hearing the drilling sounds and approaching the District Collector's office.
उन्होंने ड्रिलिंग की आवाज़ सुनने के बाद जिला कलेक्टर कार्यालय से संपर्क किया, तब जाकर उन्हें खनन अनुबंध की जानकारी मिली।
- She opposed the mining project, but the gram panchayat members passed a no-confidence motion against her.
उन्होंने खनन परियोजना का विरोध किया, लेकिन ग्राम पंचायत सदस्यों ने उनके खिलाफ अविश्वास प्रस्ताव पारित कर दिया।
- In March 2025, she received official orders to cooperate with the mining survey and now feels compelled to comply.
मार्च 2025 में, उन्हें खनन सर्वेक्षण में सहयोग करने के लिए आधिकारिक आदेश मिला और अब उन्हें इसे मानने के लिए मजबूर किया जा रहा है।

Accusations against the Sarpanch and Mining Expansion

सरपंच पर आरोप और खनन विस्तार



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- Nanos residents accuse Sarpanch Prajakta Umesh Shetye and her husband of selling out the village for personal gain.
नैनोस के निवासी सरपंच प्राजक्ता उमेश शेट्ये और उनके पति पर व्यक्तिगत लाभ के लिए गांव को बेचने का आरोप लगा रहे हैं।
- Her husband, Umesh Shetye, argues that the new mining projects will create jobs.
उनके पति उमेश शेट्ये का कहना है कि नई खनन परियोजनाएँ रोजगार पैदा करेंगी।
- In 2022, JSW Steel assured Vengurla Gram Panchayat that their exploration would not damage the land.
2022 में, जेएसडब्ल्यू स्टील ने वेंगुर्ला ग्राम पंचायत को आश्वासन दिया था कि उनकी खोज से भूमि को कोई नुकसान नहीं होगा।

Ecologically Sensitive Zones and Legal Restrictions

पारिस्थितिक रूप से संवेदनशील क्षेत्र और कानूनी प्रतिबंध

- Maharashtra Minor Mineral Extraction Rules, 2013, prohibit commercial quarrying in eco-sensitive zones.
महाराष्ट्र लघु खनिज निष्कर्षण नियम, 2013, पर्यावरण-संवेदनशील क्षेत्रों में वाणिज्यिक खनन पर रोक लगाते हैं।
- A Central government report (July 2024) identified 35% of the Western Ghats as an ecologically sensitive zone (56,825.7 sq. km across six states).
केंद्र सरकार की रिपोर्ट (जुलाई 2024) के अनुसार, पश्चिमी घाट का 35% हिस्सा (56,825.7 वर्ग किमी, छह राज्यों में फैला) पारिस्थितिक रूप से संवेदनशील क्षेत्र घोषित किया गया है।
- A July 6, 2022, notification by the Ministry of Environment confirms that Sindhudurg villages fall under eco-sensitive or buffer zones.
6 जुलाई 2022 को पर्यावरण मंत्रालय द्वारा जारी अधिसूचना में पुष्टि की गई कि सिंधुदुर्ग के गांव पर्यावरण-संवेदनशील या बफर ज़ोन में आते हैं।

Villagers' Protest and Government Response

ग्रामीणों का विरोध और सरकार की प्रतिक्रिया

- On January 25, 2025, Sindhudurg District Collector called villagers for a meeting with Minister Nitesh Rane.
25 जनवरी 2025 को, सिंधुदुर्ग जिला कलेक्टर ने ग्रामीणों को मंत्री नितेश राणे के साथ बैठक के लिए बुलाया।



- The Minister assured them that no mining project would proceed if the entire village opposed it.
मंत्री ने आश्वासन दिया कि यदि पूरा गांव विरोध करता है तो कोई भी खनन परियोजना आगे नहीं बढ़ेगी।
- However, there has been no official update on the report submission to State and Central governments.
हालांकि, राज्य और केंद्र सरकार को रिपोर्ट सौंपने पर कोई आधिकारिक अपडेट नहीं मिला है।

Redi's Impact: A Warning for Nanos

रेडी का प्रभाव: नैनोस के लिए एक चेतावनी

- Iron ore mining in Redi began in the late 1950s and continues today.
रेडी में लौह अयस्क खनन 1950 के दशक के अंत में शुरू हुआ था और आज भी जारी है।
- Ajgaon Sarpanch Yashashree Saudagar says Redi was once like their village but is now covered in red dust.
अजगाँव सरपंच यशश्री सौदागर का कहना है कि रेडी कभी उनके गांव जैसा था, लेकिन अब वह केवल लाल धूल से ढका हुआ है।
- Once farmers and fishermen, Redi's residents now mostly work as laborers for mining companies.
पहले किसान और मछुआरे रहे रेडी के निवासी अब ज्यादातर खनन कंपनियों के लिए श्रमिक के रूप में काम कर रहे हैं।

Sindhudurg's Biodiversity and Potential Environmental Disasters

सिंधुदुर्ग की जैव विविधता और संभावित पर्यावरणीय आपदाएँ

- Environmental activist Prasad Gawade warns that large-scale mining could cause disasters.
पर्यावरण कार्यकर्ता प्रसाद गवड़े ने चेतावनी दी कि बड़े पैमाने पर खनन से आपदाएँ आ सकती हैं।
- Sindhudurg has over 2,000 sacred groves, rare trees like Surangi and Nagkesar, and natural freshwater wetlands.
सिंधुदुर्ग में 2,000 से अधिक पवित्र वन, दुर्लभ सुरंगी और नागकेसर वृक्ष, और प्राकृतिक मीठे पानी के दलदल हैं।
- The laterite rock on the Konkan coast acts as a natural aquifer.
कोंकण तट पर लेटराइट चट्टान एक प्राकृतिक जलभृत के रूप में कार्य करती है।



- On March 22, 2024, Bombay HC declared Sawantwadi and Dodamarg ecologically sensitive areas to protect wildlife corridors.
22 मार्च 2024 को, बॉम्बे हाई कोर्ट ने सावंतवाड़ी और दोडामार्ग को वन्यजीव गलियारे की सुरक्षा के लिए पारिस्थितिक रूप से संवेदनशील क्षेत्र घोषित किया।

Health Crisis Due to Mining in Redi

रेडी में खनन के कारण स्वास्थ्य संकट

- Dr. Vivek Redkar's 2019 research found Redi's water sources contaminated with metals, making them unfit for drinking.
डॉ. विवेक रेडकर की 2019 की रिसर्च में पाया गया कि रेडी के जल स्रोत धातुओं से दूषित हैं, जिससे वे पीने के लिए अनुपयुक्त हो गए हैं।
- High fluoride levels in water have caused severe bone and dental health problems.
पानी में उच्च फ्लोराइड स्तर ने गंभीर हड्डी और दांतों की समस्याएँ पैदा की हैं।
- Over 60 years of mining exposure has led to increased cases of congestive cardiac failure and respiratory diseases.
60 वर्षों से अधिक खनन के कारण संकुल हृदय विफलता और श्वसन संबंधी बीमारियों के मामले बढ़े हैं।
- 6 out of 10 patients in Redi suffer from diabetes due to long-term steroid use for respiratory illnesses.
रेडी में 10 में से 6 मरीज मधुमेह से पीड़ित हैं, जो श्वसन रोगों के लिए लंबे समय तक स्टेरॉयड के उपयोग के कारण हुआ।
- 84-year-old Sunanda Gawande from Redi uses an oxygen cylinder at home due to chronic bronchitis.
रेडी की 84 वर्षीय सुनंदा गवांडे को पुरानी ब्रॉंकाइटिस के कारण घर पर ऑक्सीजन सिलेंडर का उपयोग करना पड़ता है।

Final Thoughts

अंतिम विचार

- Residents fear that Nanos could turn into another Redi if mining projects proceed.
निवासियों को डर है कि अगर खनन परियोजनाएँ आगे बढ़ीं तो नैनोस भी रेडी की तरह बन सकता है।
- They demand a comprehensive environmental impact assessment before any mining project begins.
वे किसी भी खनन परियोजना से पहले व्यापक पर्यावरणीय प्रभाव मूल्यांकन की मांग कर रहे हैं।



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GS Paper III: Inflation, Banking

Acceptable contrast

A buoyancy in the real economy could provide long-term relief

Three sets of data – January's industrial production, February's retail inflation and the performance of mutual funds in February – present a contrast between India's real economy and the financial markets, that is both concerning and heartening. In the real economy, February's 3.61% retail inflation is a seven-month low aided by a steady and welcome fall in food inflation, which had reached a 15-month high of 10.87% last October. February's food inflation, which is a barometer of people's spending on monthly groceries, fell to an almost two-year low of 3.75%. This would come as a relief to India's policymakers who had hoped for a spike in consumption demand to buttress the government's full year GDP growth target of 6.5% for the 2025 financial year. February's 3.61% retail inflation is also well within the Reserve Bank of India's (RBI) medium-term 4% inflation target, signalling a probable, albeit much-needed, repo rate cut at a time when there has been a liquidity squeeze in the domestic financial system due to the worrisome flight of foreign investors as they hedge against a depreciating rupee, the U.S.'s proposed tariffs-induced inflation and global uncertainties.

The RBI's February 7 0.25 basis point repo rate cut, from 6.50% to 6.25%, after a gap of five years, signalled the central bank's intent to raise capital flows in the real economy, to spur economic activity while continuing to focus on inflation moderation. Amid the ₹1.7 trillion liquidity squeeze in the banking system due to the flight of foreign portfolio and institutional investors, the RBI conducted two tranches of dollar/rupee swap auctions, with another one slated for later this month. This is expected to inject over ₹2 trillion into the banking system to address long-term liquidity concerns. Despite such concerns in the financial system, January's industrial production print at an eight-month high of 5%, up from December's 3.55%, is another indicator of the resilience in the real economy, as growth was led by an increase in the output of primary, intermediate, and infrastructure and construction goods. Meanwhile, the panic among retail investors was palpable from the February equity mutual funds (MF) reporting numbers. Inflows into MFs plunged 27% with the fourth month of declining stock returns. Retail investors, largely from the salaried middle and upper-middle classes, had flocked to the stock markets post COVID-19, but fresh Systematic Investment Plans dipped to 44.6 lakh, the lowest in the fiscal year. Therefore, while the volatility in the financial markets could be worrisome, but temporary, the buoyancy in the real economy makes the hit bearable.

Acceptable Contrast: Economic Trends

स्वीकार्य विरोधाभास: आर्थिक प्रवृत्तियाँ

Inflation and Economic Stability

मुद्रास्फीति और आर्थिक स्थिरता

- February's retail inflation dropped to 3.61%, a seven-month low, helped by falling food inflation.

फरवरी में खुदरा मुद्रास्फीति घटकर 3.61% हो गई, जो सात महीनों में सबसे कम है, जिसे खाद्य मुद्रास्फीति में गिरावट से सहायता मिली।

- Food inflation, which peaked at 10.87% in October 2024, fell to a two-year low of 3.75% in February 2025.

अक्टूबर 2024 में खाद्य मुद्रास्फीति 10.87% के उच्च स्तर पर थी, जो फरवरी 2025 में घटकर दो साल के न्यूनतम 3.75% पर आ गई।

- Lower inflation is expected to support consumption demand, crucial for achieving India's full-year GDP growth target of 6.5% for 2025.

कम मुद्रास्फीति से उपभोग मांग को बढ़ावा मिलने की उम्मीद है, जो 2025 के लिए भारत के 6.5% जीडीपी वृद्धि लक्ष्य को प्राप्त करने में महत्वपूर्ण है।

RBI's Monetary Policy and Liquidity Measures

आरबीआई की मौद्रिक नीति और तरलता उपाय

- The Reserve Bank of India (RBI) reduced the repo rate by 0.25 basis points on February 7, 2025, from 6.50% to 6.25% after five years.

भारतीय रिजर्व बैंक (आरबीआई) ने 7 फरवरी 2025 को पांच वर्षों में पहली बार रेपो दर को 0.25 आधार अंक घटाकर 6.50% से 6.25% कर दिया।

- The repo rate cut aims to improve capital flow and spur economic activity while keeping inflation under control.

इस रेपो दर कटौती का उद्देश्य पूंजी प्रवाह में सुधार करना और आर्थिक गतिविधियों को बढ़ावा देना है, जबकि मुद्रास्फीति को नियंत्रण में रखना है।

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- Due to a ₹1.7 trillion liquidity squeeze in the banking system caused by foreign investor outflows, RBI conducted two rupee-dollar swap auctions.
विदेशी निवेशकों के बहिर्वाह के कारण बैंकिंग प्रणाली में ₹1.7 लाख करोड़ की तरलता की कमी हुई, जिससे आरबीआई ने दो रुपये-डॉलर स्वैप नीलामी आयोजित की।
- Another auction is scheduled later this month, expected to inject ₹2 trillion into the banking system.
इस महीने के अंत में एक और नीलामी निर्धारित है, जिससे बैंकिंग प्रणाली में ₹2 लाख करोड़ की तरलता बढ़ने की उम्मीद है।

Industrial Growth and Economic Resilience

औद्योगिक वृद्धि और आर्थिक स्थिरता

- January's industrial production grew by 5%, an eight-month high, up from 3.55% in December.
जनवरी में औद्योगिक उत्पादन 5% की वृद्धि के साथ आठ महीनों के उच्चतम स्तर पर पहुंच गया, जो दिसंबर में 3.55% था।
- Growth was driven by increased output in primary, intermediate, infrastructure, and construction goods.
यह वृद्धि प्राथमिक, मध्यवर्ती, बुनियादी ढांचे और निर्माण सामग्री के उत्पादन में बढ़ोतरी के कारण हुई।

Stock Market Volatility and Mutual Fund Decline

शेयर बाजार की अस्थिरता और म्यूचुअल फंड गिरावट

- Equity mutual fund inflows plunged by 27% in February due to four consecutive months of declining stock returns.
फरवरी में इक्विटी म्यूचुअल फंड प्रवाह 27% गिर गया, क्योंकि लगातार चार महीनों से शेयर बाजार में गिरावट हो रही थी।
- Fresh Systematic Investment Plans (SIP) dropped to 44.6 lakh, the lowest in the fiscal year.
नई व्यवस्थित निवेश योजनाएं (SIP) घटकर 44.6 लाख हो गईं, जो इस वित्तीय वर्ष में सबसे कम हैं।
- Retail investors, mainly from the salaried middle and upper-middle class, had moved to stock markets post-COVID-19 but are now pulling back.
कोविड-19 के बाद वेतनभोगी मध्यम और उच्च-मध्यम वर्ग के खुदरा निवेशक शेयर बाजार में आए थे, लेकिन अब वे पीछे हट रहे हैं।



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Conclusion: Real Economy vs. Financial Markets

निष्कर्ष: वास्तविक अर्थव्यवस्था बनाम वित्तीय बाजार

- The volatility in financial markets is a concern but is likely temporary.
वित्तीय बाजारों में अस्थिरता चिंताजनक है, लेकिन यह अस्थायी होने की संभावना है।
- Strong industrial production and controlled inflation indicate resilience in the real economy, making financial market instability manageable.
मजबूत औद्योगिक उत्पादन और नियंत्रित मुद्रास्फीति वास्तविक अर्थव्यवस्था में स्थिरता को दर्शाते हैं, जिससे वित्तीय बाजार की अस्थिरता को संभालना संभव है।

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How can India meet its rising power demand?

Besides economic growth and urbanisation, climate change-induced heat stress is one of the key factors driving electricity demand. Episodes of power shortages in the last two years amid rapid growth in demand pose an important question. How should India act and plan to meet its rising energy demand reliably and cost-effectively?

GS Paper III: Energy and Environment

EXPLAINER

Shalu Agrawal
Disha Agarwal

As the fastest-growing major economy in a rapidly heating world, India's electricity demand is growing fast. Since FY21, India's electricity consumption has risen at approximately 9% per annum, compared to an average of 5% annually in the preceding decade. The Central Electricity Authority (CEA) had projected electricity demand to grow at a 6% CAGR between 2022 and 2030. However, recent trends suggest a strong likelihood of overshooting these estimates. Can India's power sector keep up with this demand and transition to renewables at the same time?

What's driving India's electricity demand?

Besides economic growth and urbanisation, climate change-induced heat stress, marked by increasingly hotter summers, is one of the key factors driving electricity demand. Currently, industries, households, and agriculture comprise 33%, 28%, and 19% of total electricity use in India, respectively. Yet, household electricity demand has grown the fastest over the past decade. The summer of 2024 witnessed a 40-50% year-on-year growth in room air conditioner sales, driven by rising incomes and record-breaking temperatures. All-India peak demand crossed 250 GW on May 30, 2024, which was 6.3% higher than projections. In 2025, after recording the warmest-ever February in 125 years, India must now brace for extended heatwaves and a peak electricity demand growth of 9-10%.

In short, India's electricity demand is growing fast and becoming more and more uncertain.

How has India met rising demand so far?

Since the early 2000s, power generation capacity has quadrupled to 460 GW, making India the third largest electricity producer globally. Driven by the imperatives of clean energy transition, India's power sector is undergoing a major shift with the rise of Renewable Energy (RE) technologies like solar and wind. In 2010, the Indian government set a target of 20 GW of RE by 2020, which was revised upwards in 2014 to 175 GW by 2022. In 2021, India further amended its target to achieve 500 GW of non-fossil fuel power capacity by 2030.

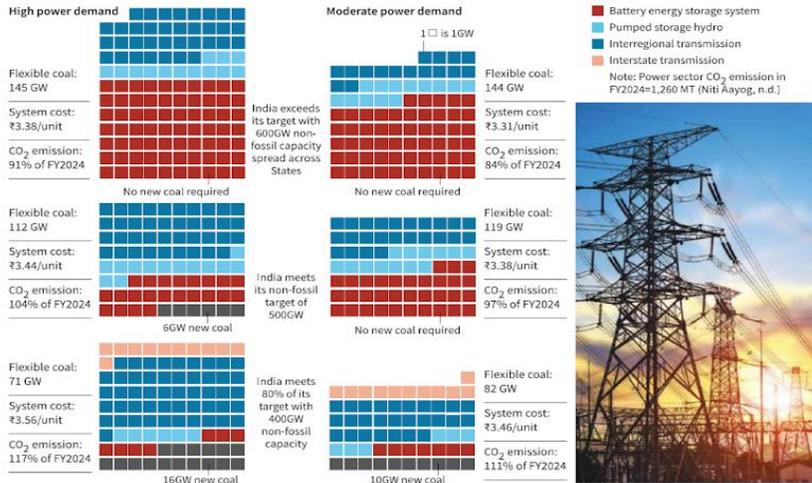
The government has continuously adopted several long-term and short-term measures to meet the spikes in demand. For instance, to manage the peak in 2022, it increased coal allocation to the power sector and prioritised its transportation through railways. It also directed imported coal-based power plants to operate at full capacity. States that have added substantive solar capacities utilised the surplus solar power to meet day peaks. Nights peaks continue to pose a challenge.

In many ways, 2024 was a landmark year – India added a record 28 GW of new RE capacity, bumping up the share of RE in the electricity mix to 13.5%. The share of coal in the capacity mix fell below half, though it still caters to 75% of power demand. India's RE capacity now stands at 165 GW. Another 32 GW of RE is expected to be commissioned in 2025. In the following five years, India would need to add about 50 GW of RE every year to meet its 2030 goal.

The electric demand

Driven by the imperatives of clean energy transition, India's power sector is undergoing a major shift with the rise of Renewable Energy (RE) technologies like solar and wind

A 600-GW RE pathway will help India meet rising power demand reliably and affordably



Source: How can India meet its rising power demand? (2025)

Why should India further raise its clean energy ambitions?

Episodes of power shortages in the last two years amid rapid growth in demand pose an important question. How should India act and plan to meet its rising energy demand reliably and cost-effectively?

A new study by the Council on Energy, Environment and Water (CEEW) answers this question by simulating six scenarios of India's power sector in 2030. CEEW found that failure to achieve 500 GW of clean energy capacity by 2030 will lead to power shortages and higher power costs, even if demand grows moderately. For instance, 0.26% of the demand will not be met if we achieve only 400 GW. Just this small percentage alone could impact the power supply to ~1 million households for 2.5 hours daily. States in northern India would be the worst affected because of network constraints.

If demand grows faster (at 6.4% CAGR between 2023 and 2030 instead of 5.8%) and the 500 GW target is achieved, India will still need additional generation capacity to avoid major power shortages. Here, India has two choices – add six GW of new coal (beyond the under-construction capacities now) or 100 GW of new RE capacity (beyond the stated 500 GW). The first choice will meet the demand, but the coal fleet will remain under high stress with a likelihood of increased downtime. This could result in sudden shortages and increased costs. The study finds that the latter choice of 100 GW of new RE capacity, distributed across States, is a better option.

How can India aim for 600 GW by 2030?

India must achieve 600 GW of clean energy by 2030 to keep pace with demand. This will help the country deliver reliable power at lower costs,

saving up to ₹42,400 crore (\$5 billion) in procurement costs in 2030 alone. It will also yield higher social and health benefits, with 1,00,000 new jobs (during 2025-2030) and up to 23% lower emission of air pollutants in 2030.

However, a 600 GW target would require 70 GW of RE addition annually until 2030 which may sound wishful. Several on-ground and grid-related challenges are already restricting the pace of RE deployment and have dwindled offtake interest among distribution companies. These include delays in securing suitable and conflict-free land, delays in the availability of transmission equipment, uncertainty around incentives for inter-State RE plants, and complexities of grid balancing. Given these challenges, relying on polluting coal power plants may seem more tenable. However, this approach would neither be affordable nor reliable. Historical trends show that coal projects take over seven years to start operations. In comparison, RE plants, being modular, could be deployed faster and supply cheaper electricity.

How can India add renewables faster?

Scaling to 600 GW is urgent and possible with the right market signals. Below are three key strategies to unlock the pace of RE deployment in India.

First, new RE projects should be spread across more Indian States.

Currently, five Indian States house three-fourths of the total RE capacity. State-agnostic reverse bids and complete waiver of inter-State transmission system (ISTS) charges have crowded investments to a few regions, putting pressure on land. The government must work with more States, like Odisha, Madhya Pradesh, Bihar, Punjab, and Kerala, to create a conducive RE environment. For this purpose, the ISTS waiver should not be

extended beyond June 2025, barring storage plants, which would also encourage distributed RE plants under the PM-KUSUM (Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhayan) and PM Surya Ghar Scheme.

Second, the Central and State governments must promote the co-location of wind and energy storage systems with existing and new solar projects. This would help effectively utilise land and transmission networks and support grid integration of renewables. CEEW's study estimates that India will need 280 GWh of battery energy storage systems (BESS) and 100 GWh of pumped hydro storage to integrate 600 GW of RE by 2030. Here, we must prioritise BESS, which can be built within six months and is quickly becoming affordable.

Third, there is an urgent need for innovation in bidding and contract designs for faster RE procurement and RE availability in power exchanges. Several large solar and hybrid RE tenders, concluded in FY24 by intermediaries like the Solar Energy Corporation of India, did not generate offtake interest from States. The Union government must work with States to generate demand for RE procurement, devise suitable tender designs, and proactively resolve bottlenecks. Besides bilateral RE procurement, we must improve RE availability on our power exchanges. Here, the government could consider supporting a Contract-for-Difference pool that can de-risk merchant RE capacities.

India's trust with RE has seen many successes in the last decade. Hopefully, it can also achieve the unthinkable – double the share of clean energy in its generation mix from 25% to 50% by 2030.

Disha Agarwal is senior programme lead and Shalu Agrawal is Director of Programmes at CEEW. Views are personal.

THE GIST

The summer of 2024 witnessed a 40-50% year-on-year growth in room air conditioner sales, driven by rising incomes and record-breaking temperatures. All-India peak demand crossed 250 GW on May 30, 2024, which was 6.3% higher than projections.

CEEW found that failure to achieve 500 GW of clean energy capacity by 2030 will lead to power shortages and higher power costs, even if demand grows moderately.

The Central and State governments must promote the co-location of wind and energy storage systems with existing and new solar projects. This would help effectively utilise land and transmission networks and support grid integration of renewables.

How Can India Meet Its Rising Power Demand?



भारत अपनी बढ़ती बिजली मांग को कैसे पूरा कर सकता है?

1. Factors Driving India's Rising Electricity Demand

1. भारत में बढ़ती बिजली मांग के कारक

- Electricity consumption in India has grown at 9% per annum since FY21, compared to 5% in the previous decade.
वित्त वर्ष 2021 से भारत में बिजली की खपत प्रति वर्ष 9% की दर से बढ़ रही है, जबकि पिछले दशक में यह 5% थी।
- Key factors include economic growth, urbanisation, and climate change-induced heat stress, leading to higher use of cooling appliances.
मुख्य कारकों में आर्थिक वृद्धि, शहरीकरण और जलवायु परिवर्तन से उत्पन्न गर्मी शामिल हैं, जिससे शीतलन उपकरणों का उपयोग बढ़ रहा है।
- In 2024, air conditioner sales increased by 40-50% due to record-breaking temperatures.
2024 में रिकॉर्ड तोड़ तापमान के कारण एयर कंडीशनर की बिक्री 40-50% बढ़ गई।
- Peak electricity demand on May 30, 2024, was 250 GW, exceeding projections by 6.3%.
30 मई 2024 को पीक बिजली मांग 250 गीगावॉट थी, जो अनुमान से 6.3% अधिक थी।

2. How Has India Managed Rising Demand So Far?

2. अब तक भारत ने बढ़ती मांग को कैसे पूरा किया?

- Power generation capacity has quadrupled since the early 2000s, reaching 460 GW, making India the third-largest electricity producer.
2000 के दशक की शुरुआत से भारत की बिजली उत्पादन क्षमता चार गुना बढ़कर 460 गीगावॉट हो गई, जिससे यह दुनिया का तीसरा सबसे बड़ा बिजली उत्पादक बन गया।
- Renewable Energy (RE) has grown significantly; India now has 165 GW of RE capacity.
नवीकरणीय ऊर्जा (RE) में उल्लेखनीय वृद्धि हुई है; भारत की RE क्षमता अब 165 गीगावॉट है।
- Government targets 500 GW of non-fossil fuel capacity by 2030, requiring an addition of 50 GW annually.
सरकार का लक्ष्य 2030 तक 500 गीगावॉट गैर-जीवाश्म ईंधन क्षमता हासिल करना है, जिसके लिए हर साल 50 गीगावॉट जोड़ने की आवश्यकता होगी।



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- In 2024, India added a record 28 GW of RE capacity, increasing its share in the energy mix to 13.5%.
2024 में, भारत ने रिकॉर्ड 28 गीगावॉट RE क्षमता जोड़ी, जिससे इसकी ऊर्जा मिश्रण में हिस्सेदारी 13.5% हो गई।
- Coal still supplies 75% of India's power, though its share in total capacity has fallen below 50%.
कोयला अभी भी भारत की 75% बिजली की आपूर्ति करता है, हालांकि इसकी कुल क्षमता में हिस्सेदारी 50% से कम हो गई है।

3. Why Should India Further Increase Clean Energy Ambitions?

3. भारत को स्वच्छ ऊर्जा लक्ष्यों को क्यों बढ़ाना चाहिए?

- Power shortages in the past two years highlight the need for long-term planning.
पिछले दो वर्षों में बिजली की कमी से दीर्घकालिक योजना की आवश्यकता स्पष्ट होती है।
- A study by the Council on Energy, Environment, and Water (CEEW) predicts that failing to meet the 500 GW target by 2030 will lead to higher power costs and shortages.
ऊर्जा, पर्यावरण और जल परिषद (CEEW) के अध्ययन के अनुसार, 2030 तक 500 गीगावॉट लक्ष्य पूरा नहीं करने से बिजली की लागत बढ़ेगी और कमी होगी।
- If India reaches only 400 GW, about 0.26% of demand will remain unmet, affecting power supply to ~1 million households for 2.5 hours daily.
यदि भारत केवल 400 गीगावॉट तक पहुंचता है, तो 0.26% मांग अधूरी रहेगी, जिससे लगभग 10 लाख घरों की बिजली आपूर्ति प्रतिदिन 2.5 घंटे तक प्रभावित होगी।
- North Indian states will suffer the most due to grid constraints.
उत्तर भारतीय राज्य ग्रिड सीमाओं के कारण सबसे अधिक प्रभावित होंगे।
- If demand grows at 6.4% CAGR instead of 5.8%, even 500 GW will be insufficient, requiring additional capacity.
यदि मांग 5.8% के बजाय 6.4% CAGR से बढ़ती है, तो 500 गीगावॉट भी अपर्याप्त होगी और अतिरिक्त क्षमता की आवश्यकता होगी।
- **India has two options:
 1. Add 6 GW of new coal capacity, increasing grid stress.
 2. Add 100 GW of new RE capacity, reducing risks and costs**.

**भारत के पास दो विकल्प हैं:



3. 6 गीगावाॅट नई कोयला क्षमता जोड़ें, जिससे ग्रिड पर दबाव बढ़ेगा।
 4. 100 गीगावाॅट नई नवीकरणीय ऊर्जा क्षमता जोड़ें, जिससे जोखिम और लागत कम होगी।**
- The second option (100 GW RE) is the preferred choice due to sustainability and cost-effectiveness.
दूसरा विकल्प (100 गीगावाॅट RE) स्थिरता और लागत प्रभावशीलता के कारण बेहतर है।

Conclusion: India's Energy Future

निष्कर्ष: भारत का ऊर्जा भविष्य

- India must rapidly expand clean energy to meet growing demand and prevent power shortages.
भारत को बढ़ती मांग को पूरा करने और बिजली की कमी को रोकने के लिए स्वच्छ ऊर्जा का तेजी से विस्तार करना चाहिए।
- Coal reliance should reduce gradually while integrating more solar and wind energy into the grid.
कोयले पर निर्भरता को धीरे-धीरे कम करना चाहिए और ग्रिड में अधिक सौर और पवन ऊर्जा को शामिल करना चाहिए।
- Government policies should focus on large-scale RE adoption and grid modernization.
सरकारी नीतियों को बड़े पैमाने पर RE अपनाने और ग्रिड आधुनिकीकरण पर ध्यान देना चाहिए।
- A proactive approach will ensure reliable, affordable, and sustainable energy for India's future.
एक सक्रिय दृष्टिकोण से भारत के भविष्य के लिए विश्वसनीय, सस्ती और स्थायी ऊर्जा सुनिश्चित होगी।

How Can India Aim for 600 GW by 2030?

भारत 2030 तक 600 गीगावाॅट लक्ष्य कैसे हासिल कर सकता है?

1. Importance of Achieving 600 GW by 2030

1. 2030 तक 600 गीगावाॅट हासिल करने का महत्व

- 600 GW of clean energy is essential to meet demand and reduce costs, saving ₹42,400 crore (\$5 billion) in 2030 alone.
600 गीगावाॅट स्वच्छ ऊर्जा मांग को पूरा करने और लागत कम करने के लिए आवश्यक है, जिससे 2030 में अकेले ₹42,400 करोड़ (\$5 बिलियन) की बचत होगी।



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- It will create 1,00,000 new jobs (2025-2030) and reduce air pollution emissions by 23%.
यह 2025-2030 के बीच 1,00,000 नई नौकरियां पैदा करेगा और वायु प्रदूषण उत्सर्जन को 23% तक कम करेगा।
- Achieving this goal requires adding 70 GW of renewable energy (RE) annually until 2030.
इस लक्ष्य को प्राप्त करने के लिए 2030 तक हर साल 70 गीगावॉट नवीकरणीय ऊर्जा (RE) जोड़ने की आवश्यकता होगी।

2. Challenges in Achieving 600 GW Target

2. 600 गीगावॉट लक्ष्य प्राप्त करने में चुनौतियां

- Delays in securing conflict-free land and transmission equipment availability.
विवाद-मुक्त भूमि और ट्रांसमिशन उपकरणों की उपलब्धता में देरी।
- Uncertainty around incentives for inter-State RE plants.
अंतर-राज्यीय RE संयंत्रों के लिए प्रोत्साहनों को लेकर अनिश्चितता।
- Challenges in grid balancing and integration of RE into the power network.
ग्रिड संतुलन और नवीकरणीय ऊर्जा को बिजली नेटवर्क में एकीकृत करने में कठिनाई।
- Reliance on coal power plants is costly and takes over seven years to become operational.
कोयला बिजली संयंत्रों पर निर्भरता महंगी है और इन्हें चालू होने में सात साल से अधिक का समय लगता है।
- RE plants, being modular, can be deployed faster and provide cheaper electricity.
मॉड्यूलर होने के कारण, नवीकरणीय ऊर्जा संयंत्र तेजी से लगाए जा सकते हैं और सस्ती बिजली प्रदान कर सकते हैं।

3. How Can India Add Renewables Faster?

3. भारत तेजी से नवीकरणीय ऊर्जा कैसे जोड़ सकता है?

A. Expanding RE Projects to More States

A. नवीकरणीय ऊर्जा परियोजनाओं का विस्तार अधिक राज्यों तक

- Currently, five states house 75% of total RE capacity, leading to land pressure.
वर्तमान में, पांच राज्यों में कुल नवीकरणीय ऊर्जा क्षमता का 75% केंद्रित है, जिससे भूमि पर दबाव बढ़ रहा है।



- Government should promote RE in states like Odisha, Madhya Pradesh, Bihar, Punjab, and Kerala.
सरकार को ओडिशा, मध्य प्रदेश, बिहार, पंजाब और केरल जैसे राज्यों में नवीकरणीय ऊर्जा को बढ़ावा देना चाहिए।
- Inter-State Transmission System (ISTS) waiver should end after June 2025, except for storage plants.
अंतर-राज्यीय ट्रांसमिशन सिस्टम (ISTS) छूट को जून 2025 के बाद समाप्त किया जाना चाहिए, सिवाय भंडारण संयंत्रों के।
- Encourage distributed RE plants under PM-KUSUM and PM Surya Ghar Scheme.
पीएम-कुसुम और पीएम सूर्य घर योजना के तहत विकेन्द्रीकृत नवीकरणीय ऊर्जा संयंत्रों को बढ़ावा देना।

B. Promoting Wind and Energy Storage Systems

B. पवन और ऊर्जा भंडारण प्रणाली को बढ़ावा देना

- Co-locating wind and energy storage systems with solar projects can improve land and grid efficiency.
सौर परियोजनाओं के साथ पवन और ऊर्जा भंडारण प्रणालियों को सह-स्थित करने से भूमि और ग्रिड दक्षता में सुधार हो सकता है।
- India will need 280 GWh of battery energy storage (BESS) and 100 GWh of pumped hydro storage by 2030.
भारत को 2030 तक 280 GWh बैटरी ऊर्जा भंडारण (BESS) और 100 GWh पंप हाइड्रो स्टोरेज की आवश्यकता होगी।
- BESS should be prioritized as it can be built within six months and is becoming more affordable.
BESS को प्राथमिकता दी जानी चाहिए क्योंकि इसे छह महीने के भीतर बनाया जा सकता है और यह सस्ता हो रहा है।

c. Improving RE Procurement and Market Design

C. नवीकरणीय ऊर्जा की खरीद और बाजार संरचना में सुधार

- Large solar and hybrid RE tenders in FY24 did not attract enough interest from states.
वित्त वर्ष 2024 में बड़े सौर और हाइब्रिड नवीकरणीय ऊर्जा टेंडर राज्यों से पर्याप्त रुचि नहीं प्राप्त कर सके।



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- **Government must work with states to generate demand for RE procurement.**
सरकार को राज्यों के साथ मिलकर नवीकरणीय ऊर्जा खरीद की मांग उत्पन्न करनी चाहिए।
- **Introducing a Contract-for-Difference (CfD) pool can help de-risk merchant RE capacities.**
एक कॉन्ट्रैक्ट-फॉर-डिफरेंस (CfD) पूल शुरू करना मर्चेट नवीकरणीय ऊर्जा क्षमता को जोखिम-मुक्त कर सकता है।
- **Enhancing RE availability in power exchanges to improve integration.**
नवीकरणीय ऊर्जा की उपलब्धता को बिजली बाजार में बढ़ाकर एकीकरण में सुधार करना।

Conclusion: A Sustainable Future for India

निष्कर्ष: भारत का स्थायी भविष्य

- **India's renewable energy transition has been successful so far, and the 600 GW target is achievable with the right policies.**
भारत का नवीकरणीय ऊर्जा परिवर्तन अब तक सफल रहा है, और सही नीतियों के साथ 600 गीगावाट लक्ष्य प्राप्त किया जा सकता है।
- **Expanding RE projects to new states and co-locating wind and storage systems will improve energy security.**
नए राज्यों में नवीकरणीय ऊर्जा परियोजनाओं का विस्तार और पवन तथा भंडारण प्रणालियों को सह-स्थित करने से ऊर्जा सुरक्षा में सुधार होगा।
- **India can double the share of clean energy in its power mix from 25% to 50% by 2030.**
भारत 2030 तक अपनी बिजली उत्पादन मिश्रण में स्वच्छ ऊर्जा की हिस्सेदारी को 25% से बढ़ाकर 50% कर सकता है।
- **A strong policy framework will ensure affordable, reliable, and sustainable energy for the future.**
एक मजबूत नीतिगत ढांचा भविष्य के लिए सस्ती, विश्वसनीय और स्थायी ऊर्जा सुनिश्चित करेगा।



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Understanding the neurobiological basis of substance abuse addiction

The human brain is perhaps the most complex living structure in the universe. Recent findings reveal that addiction is not isolated to discrete brain regions but rather involves a unified circuit encompassing areas associated with craving, emotional regulation, and decision-making processes

GS Paper III: S&T

Ethics and Essay

Baby Chakrapani P. S.

In the complex landscape of public health challenges, substance use disorders stand as a testament to the intricate relationship between the brain and behaviour. As Brain Awareness Week (March 10-16) brings neuroscience into focus, it becomes imperative to examine addiction not merely as a moral failing but also as a chronic brain condition with neurobiological underpinnings that can be understood, treated, and potentially reversed.

Revelations from a new study

The human brain, with around 86-100 billion neurons, represents perhaps the most complex living structure in the known universe. Each neuron, equipped with an axon, dendrites, and a cell body, forms an elaborate communication network that regulates everything from basic bodily functions to complex cognitive processes. This communication occurs through neurotransmitters – chemical messengers that can either excite or inhibit neural activity.

Recent advances in neuroscience have illuminated how specific neural networks become disrupted during addiction.

The ground-breaking multi-centre study by Dr. Michael D. Fox and Dr. Jacob L. Stubbins at the University of British Columbia, published in *Nature Mental Health*, analysed data from 144 imaging studies involving over 9,000 participants. Their findings reveal that addiction is not isolated to discrete brain regions but rather involves a unified circuit encompassing areas associated with craving, emotional regulation, and decision-making processes.

This discovery marks a paradigm shift in our understanding of addiction. Rather than focusing on isolated brain regions, research suggests a more holistic approach is necessary – one that considers the interconnected nature of neural pathways involved in substance use disorders.

Three interconnected brain regions emerge as central players in the

development and maintenance of addiction – the basal ganglia, the extended amygdala, and the prefrontal cortex. Each contributes uniquely to what researchers describe as the three-stage cycle of addiction: binge or intoxication, withdrawal, and preoccupation or anticipation.

The basal ganglia, particularly the nucleus accumbens (NAC), plays a decisive role in processing rewards. This region teaches the brain to repeat activities that produce pleasure, whether derived from food, social interaction, or addictive substances. Working in close coordination with neurotransmitters like dopamine and serotonin, the NAC reinforces behaviours that “feel good” – a natural mechanism that becomes hijacked during addiction.

Meanwhile, the extended amygdala governs stress responses and the negative emotional states that accompany withdrawal from substances. This region helps explain why discontinuing substance use often leads to profound feelings of anxiety, irritability, and unease – symptoms that drive continued use despite negative consequences.

The prefrontal cortex, responsible for executive functions such as decision-making, time management, and prioritisation, completes this triad. Impairment in this region helps explain the seeming irrationality of continued substance use despite awareness of harmful consequences – a hallmark of addiction.

Vulnerability of the brain

Adolescence represents a critical “at-risk period” for substance use and addiction. During this developmental stage, the brain undergoes significant reorganisation, with the prefrontal cortex – the region responsible for impulse control and rational decision making – being among the last areas to fully mature. This neurobiological reality helps explain why adolescents are particularly vulnerable to substance use disorders and why early intervention is crucial.

The neuroadaptations that occur with ongoing substance use not only impair

brain function but accelerate the transition from controlled to compulsive use. Perhaps most concerning is that these alterations may persist long after substance use ceases, contributing to relapse vulnerability and periodic cravings even after prolonged periods of abstinence.

Beyond simplistic narratives

It is essential to recognise that while substance use can lead to addiction, it does not inevitably do so on its own. A complex interplay of genetic predisposition, psychological history, environmental factors, and the age of first-use determines individual vulnerability.

This multifactorial understanding challenges simplistic narratives and underscores the need for more nuanced approaches to prevention and treatment. The scientific community has made significant strides in understanding addiction through animal models, which provide controlled conditions for examining how substances affect the brain. These studies have elucidated the impact of genes, developmental processes, and environmental factors on substance-taking behaviour. Human studies using brain imaging technologies like MRI and PET scans have further illuminated the biochemical, functional, and structural changes induced by substance use.

However, despite these advances, our understanding of how the brain changes during recovery remains incomplete. What factors support or hinder long-term recovery from substance use disorders? What neurobiological processes allow individuals to sustain behavioural changes and build resilience against relapse? These questions represent the frontier of addiction research.

A deeper comprehension of the recovery process will undoubtedly influence the development of more effective treatment and support programs. It may also help address the broader social, educational, and professional functioning challenges that often accompany substance use

disorders.

The path ahead

Perhaps one of the most significant contributions of neurobiological research on addiction has been its role in reducing stigma. By framing addiction as a chronic brain condition rather than a moral weakness, this research has encouraged the integration of substance use disorder treatment into mainstream healthcare. Clinical trials continue to explore effective medications for various substance use disorders, with promising developments, particularly in the realm of opioid addiction. As our understanding of the neurobiological basis of addiction evolves, so too will our treatment approaches, potentially leading to more targeted interventions that address the specific neural circuits disrupted in addiction.

As we observe Brain Awareness Week, it behoves us to reflect on how neuroscientific insights can inform public policy, treatment approaches, and societal attitudes toward addiction. Embracing a neurobiological framework, we can move beyond simplistic blame narratives toward more compassionate and effective responses.

The brain's remarkable plasticity – its ability to reorganise and adapt – offers hope even in the face of addiction's persistent challenges. With continued research, improved public understanding, and evidence-based interventions, we can work toward a future where substance use disorders are prevented where possible and treated effectively where necessary.

In this endeavour, we must remember that behind every statistic and brain scan lies a human being – someone whose neural circuitry has been altered but whose capacity for recovery remains. This is fundamental in guiding our scientific inquiry, clinical practice, and public discourse on addiction.

The writer is a neuroscientist, Director of the Centre of Excellence in Neurodegeneration and Brain Health, and Director, Centre for Neuroscience at Cochin University of Science and Technology.

Understanding the Neurobiological Basis of Substance Abuse Addiction

मादक पदार्थों की लत के तंत्रिका जैविक आधार को समझना

The human brain is perhaps the most complex living structure in the universe.

मानव मस्तिष्क संभवतः ब्रह्मांड की सबसे जटिल जीवित संरचना है।



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- **Addiction** is not isolated to discrete **brain regions** but involves a **unified circuit** encompassing areas associated with **craving, emotional regulation, and decision-making processes**.

लत केवल विशिष्ट मस्तिष्क क्षेत्रों तक सीमित नहीं है, बल्कि यह एकीकृत तंत्र को प्रभावित करती है, जिसमें लालसा, भावनात्मक नियंत्रण और निर्णय लेने की प्रक्रियाएं शामिल हैं।

Public Health Challenges and Addiction

सार्वजनिक स्वास्थ्य चुनौतियाँ और नशे की लत

- In the **complex landscape** of public health, **substance use disorders** highlight the intricate relationship between the **brain and behavior**.
सार्वजनिक स्वास्थ्य की जटिल परिदृश्य में, मादक पदार्थों के उपयोग की विकृतियाँ मस्तिष्क और व्यवहार के जटिल संबंध को दर्शाती हैं।
- **Brain Awareness Week (March 10-16)** emphasizes the need to understand **addiction** as a **chronic brain condition** rather than a **moral failing**.
मस्तिष्क जागरूकता सप्ताह (10-16 मार्च) इस बात पर बल देता है कि नशे की लत को नैतिक कमजोरी के बजाय एक दीर्घकालिक मस्तिष्क स्थिति के रूप में समझा जाना चाहिए।

Revelations from a New Study

एक नए अध्ययन से खुलासे

- The **human brain** has around **86-100 billion neurons**, forming a complex **communication network** through **neurotransmitters**.
मानव मस्तिष्क में लगभग 86-100 अरब न्यूरोन्स होते हैं, जो न्यूरोट्रांसमीटर के माध्यम से एक जटिल संचार नेटवर्क बनाते हैं।
- A **multi-centre study** by **Dr. Michael D. Fox** and **Dr. Jacob L. Stubbs** at the **University of British Columbia**, published in **Nature Mental Health**, analyzed data from **144 imaging studies** involving over **9,000 participants**.
ब्रिटिश कोलंबिया विश्वविद्यालय के डॉ. माइकल डी. फॉक्स और डॉ. जैकब एल. स्टब्स द्वारा किए गए बहु-केंद्र अध्ययन, जिसे नेचर मेंटल हेल्थ में प्रकाशित किया गया, ने 144 इमेजिंग अध्ययनों और 9,000 से अधिक प्रतिभागियों का विश्लेषण किया।
- Findings indicate that **addiction is not confined to specific brain regions**, but involves a **unified neural circuit** that affects **craving, emotional regulation, and decision-making**.
निष्कर्ष बताते हैं कि लत केवल कुछ विशिष्ट मस्तिष्क क्षेत्रों तक सीमित नहीं है, बल्कि यह एकीकृत न्यूरोल सर्किट को प्रभावित करती है, जो लालसा, भावनात्मक नियंत्रण और निर्णय लेने की क्षमता से जुड़ा है।



Three Key Brain Regions Involved in Addiction

नशे की लत में शामिल तीन प्रमुख मस्तिष्क क्षेत्र

- **Basal Ganglia** (especially **Nucleus Accumbens - NAc**) regulates **reward processing**. It interacts with **dopamine and serotonin** to reinforce pleasurable behaviors.
बेसल गैंग्लिया (विशेष रूप से न्युक्लियस अकंबेंस - NAc) इनाम प्रसंस्करण को नियंत्रित करता है। यह डोपामिन और सेरोटोनिन के साथ मिलकर आनंददायक गतिविधियों को मजबूत करता है।
- **Extended Amygdala** governs **stress responses** and is responsible for **negative emotions** experienced during withdrawal, leading to continued substance use.
एक्सटेंडेड अमिगडाला तनाव प्रतिक्रियाओं को नियंत्रित करता है और नकारात्मक भावनाओं का कारण बनता है, जो पदार्थ उपयोग को बनाए रखने में योगदान देता है।
- **Prefrontal Cortex** manages **executive functions** like **decision-making, time management, and prioritization**. Its impairment leads to **continued substance use** despite awareness of harm.
प्रीफ्रंटल कॉर्टेक्स निर्णय लेने, समय प्रबंधन और प्राथमिकता निर्धारण जैसी कार्यकारी प्रक्रियाओं को नियंत्रित करता है। इसकी क्षति के कारण हानि की जागरूकता के बावजूद पदार्थों का उपयोग जारी रहता है।

The Three-Stage Cycle of Addiction

नशे की लत का तीन-चरणीय चक्र

- **Binge/Intoxication**: **Basal Ganglia** promotes **repetitive substance use** by reinforcing pleasurable experiences.
बिंज/नशा: बेसल गैंग्लिया आनंददायक अनुभवों को मजबूत करके दोहराए जाने वाले पदार्थ उपयोग को बढ़ावा देता है।
- **Withdrawal/Negative Affect**: **Extended Amygdala** induces **anxiety, irritability, and discomfort**, pushing individuals toward continued use.
वापसी/नकारात्मक प्रभाव: एक्सटेंडेड अमिगडाला चिंता, चिड़चिड़ापन और असहजता उत्पन्न करता है, जिससे व्यक्ति पदार्थ उपयोग जारी रखता है।
- **Preoccupation/Anticipation**: **Prefrontal Cortex** impairment weakens **self-control**, leading to compulsive drug-seeking behavior.
ध्यानाकर्षण/अपेक्षा: प्रीफ्रंटल कॉर्टेक्स की क्षति आत्म-नियंत्रण को कमजोर करती है, जिससे अनिवार्य रूप से नशीले पदार्थों की खोज की प्रवृत्ति बढ़ती है।

Vulnerability of the brain

मस्तिष्क की संवेदनशीलता

- **Adolescence** represents a critical **“at-risk period”** for **substance use and addiction**.
किशोरावस्था नशीली दवाओं के सेवन और लत के लिए एक महत्वपूर्ण "जोखिम भरा समय" होता है।



- During this developmental stage, the **brain undergoes significant reorganisation**, with the **prefrontal cortex**—the region responsible for **impulse control and rational decision-making**—being among the **last areas to fully mature**.
इस विकासात्मक चरण में, **मस्तिष्क में महत्वपूर्ण पुनर्गठन** होता है, और **प्रीफ्रंटल कॉर्टेक्स**—जो आवेग नियंत्रण और तार्किक निर्णय लेने के लिए जिम्मेदार होता है—**सबसे अंतिम क्षेत्रों में से एक होता है जो पूर्ण रूप से विकसित होता है।**
- This **neurobiological reality** helps explain why **adolescents are particularly vulnerable to substance use disorders** and why **early intervention** is crucial.
यह **न्यूरोबायोलॉजिकल वास्तविकता** यह समझाने में मदद करती है कि **किशोर विशेष रूप से नशीली दवाओं के दुरुपयोग के प्रति संवेदनशील होते हैं और जल्दी हस्तक्षेप क्यों आवश्यक है।**
- The **neuroadaptations** that occur with **ongoing substance use** not only **impair brain function** but also **accelerate the transition from controlled to compulsive use**.
निरंतर नशीली दवाओं के सेवन के कारण होने वाले न्यूरोएडेप्टेशन न केवल **मस्तिष्क के कार्य को प्रभावित करते हैं बल्कि नियंत्रित उपयोग से मजबूरी वाले उपयोग की ओर संक्रमण को तेज कर देते हैं।**
- Perhaps most concerning is that these **alterations may persist long after substance use ceases**, contributing to **relapse vulnerability** and **periodic cravings** even after **prolonged abstinence**.
सबसे चिंताजनक बात यह है कि ये परिवर्तन लंबे समय तक बने रह सकते हैं, भले ही नशीली दवाओं का सेवन बंद हो गया हो, जिससे पुनः वापसी (रीलैप्स) की संभावना और समय-समय पर लालसा बनी रहती है, यहां तक कि लंबे समय तक परहेज के बाद भी।

Beyond simplistic narratives

सरल कथाओं से परे

- It is essential to recognise that while **substance use can lead to addiction**, it does not **inevitably** do so on its own.
यह समझना आवश्यक है कि हालांकि **नशीली दवाओं का सेवन लत की ओर ले जा सकता है**, लेकिन यह अपने आप में **अनिवार्य रूप से ऐसा नहीं करता।**
- A **complex interplay of genetic predisposition, psychological history, environmental factors, and the age of first use** determines **individual vulnerability**.
आनुवंशिक प्रवृत्ति, मनोवैज्ञानिक इतिहास, पर्यावरणीय कारक, और पहली बार उपयोग की आयु का जटिल परस्पर प्रभाव व्यक्ति की संवेदनशीलता को निर्धारित करता है।



- This **multifactorial understanding** challenges **simplistic narratives** and underscores the need for **more nuanced approaches** to **prevention and treatment**.
यह बहु-कारक समझ सरल कथाओं को चुनौती देती है और रोकथाम और उपचार के लिए अधिक परिष्कृत दृष्टिकोण की आवश्यकता को उजागर करती है।
- The **scientific community** has made **significant strides** in understanding **addiction** through **animal models**, which provide **controlled conditions** for examining how substances affect the brain.
वैज्ञानिक समुदाय ने पशु मॉडल के माध्यम से लत को समझने में महत्वपूर्ण प्रगति की है, जो यह जांचने के लिए नियंत्रित परिस्थितियाँ प्रदान करते हैं कि नशीली दवाएं मस्तिष्क को कैसे प्रभावित करती हैं।
- **Human studies** using **brain imaging technologies** like **MRI and PET scans** have further illuminated the **biochemical, functional, and structural changes** induced by **substance use**.
मस्तिष्क इमेजिंग तकनीकों जैसे MRI और PET स्कैन का उपयोग करने वाले मानव अध्ययन ने जैव-रासायनिक, कार्यात्मक और संरचनात्मक परिवर्तनों को और स्पष्ट किया है जो नशीली दवाओं के सेवन से प्रेरित होते हैं।
- However, despite these advances, our **understanding of how the brain changes during recovery** remains **incomplete**.
हालांकि, इन प्रगति के बावजूद, हमारी समझ कि मस्तिष्क पुनर्प्राप्ति (रिकवरी) के दौरान कैसे बदलता है, अभी भी अपूर्ण बनी हुई है।

The path ahead

आगे का रास्ता

- Perhaps one of the most significant contributions of **neurobiological research on addiction** has been its role in **reducing stigma**.
लत पर न्यूरोबायोलॉजिकल शोध का सबसे महत्वपूर्ण योगदान कलंक (स्टिग्मा) को कम करने में इसकी भूमिका रही है।
- By framing **addiction as a chronic brain condition** rather than a **moral weakness**, this research has encouraged the **integration of substance use disorder treatment into mainstream healthcare**.
लत को एक नैतिक कमजोरी के बजाय एक पुरानी मस्तिष्क स्थिति के रूप में प्रस्तुत करके, इस शोध ने नशीली दवाओं के दुरुपयोग विकार के इलाज को मुख्यधारा की स्वास्थ्य सेवाओं में एकीकृत करने को प्रोत्साहित किया है।
- **Clinical trials** continue to explore **effective medications** for **various substance use disorders**, with **promising developments**, particularly in the realm of **opioid addiction**.



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क्लिनिकल ट्रायल विभिन्न नशीली दवाओं के दुरुपयोग विकारों के लिए प्रभावी दवाओं की खोज जारी रखे हुए हैं, जिनमें विशेष रूप से ओपिऑइड (opioid) की लत के क्षेत्र में आशाजनक प्रगति हुई है।

- As our understanding of the neurobiological basis of addiction evolves, so too will our treatment approaches, potentially leading to more targeted interventions that address the specific neural circuits disrupted in addiction.

जैसे-जैसे हमारी लत के न्यूरोबायोलॉजिकल आधार को समझने की क्षमता विकसित होगी, वैसे-वैसे हमारे उपचार के दृष्टिकोण भी विकसित होंगे, जो संभवतः अधिक लक्षित हस्तक्षेपों की ओर ले जाएंगे, जो लत में बाधित विशेष न्यूरोल सर्किट्स को संबोधित करेंगे।

- As we observe Brain Awareness Week, it is important to reflect on how neuroscientific insights can inform public policy, treatment approaches, and societal attitudes toward addiction.

जब हम मस्तिष्क जागरूकता सप्ताह मना रहे हैं, तो यह महत्वपूर्ण है कि हम विचार करें कि न्यूरोविज्ञान संबंधी अंतर्दृष्टि कैसे सार्वजनिक नीति, उत और अनुकूलित करने की क्षमता देती है—लत की स्थायी चुनौतियों के बावजूद भी आशा प्रदान करती है।

- With continued research, improved public understanding, and evidence-based interventions, we can work toward a future where substance use disorders are prevented where possible and treated effectively where necessary.

निरंतर शोध, बेहतर सार्वजनिक समझ, और साक्ष्य-आधारित हस्तक्षेपों के साथ, हम एक ऐसे भविष्य की ओर काम कर सकते हैं जहां नशीली दवाओं के उपयोग विकारों को जहां संभव हो रोका जाए और जहां आवश्यक हो प्रभावी रूप से इलाज किया जाए।



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Auction of licences to explore critical minerals launched

GS Paper III: Mining and Exploration

PANAJI

Union Coal and Mines Minister G. Kishan Reddy on Thursday launched the country's first-ever auction of exploration licences (ELs) for 13 exploration blocks for critical minerals.

Mr. Reddy launched the ELs in the presence of Goa Chief Minister Pramod Sawant in Dona Paula near here, a major reform aimed to unlock India's untapped critical and deep-seated mineral resources.

The licences are for the exploration blocks for minerals such as REE (rare earth elements), zinc, diamond, copper, PGE (platinum group minerals) and others.

Mr. Reddy said that in the last 10 years, India's mining sector has achieved many milestones and emerged as one of the fas-

test and most dynamic sectors. "We are laying the foundation for a new era in mineral exploration," he said.

"We have established ourselves as a serious player in the global mineral landscape, it has also opened floodgates of opportunities for the private sector," he said. Mr. Reddy added even greater milestones will be achieved in the coming years and it will pave the way for the rise of India as a global leader.

The exploration access would be granted exclusively, which would empower private companies to explore up to 1,000 square metres per licence, Mr. Reddy said. This new framework will encourage transparency, efficiency, innovation, ensuring that only the most promising areas remain for a detailed exploration, he said.

- The licences are for the exploration blocks for minerals such as REE (rare earth elements), zinc, diamond, copper, PGE (platinum group minerals) and others. लाइसेंस REE (रेयर अर्थ एलिमेंट्स), जिंक, हीरा, तांबा, PGE (प्लैटिनम ग्रुप मिनरल्स) और अन्य

Auction of licences to explore critical minerals launched

महत्वपूर्ण खनिजों की खोज के लिए लाइसेंस की नीलामी शुरू

Union Coal and Mines Minister G. Kishan Reddy on Thursday launched the country's first-ever auction of exploration licences (ELs) for 13 exploration blocks for critical minerals.

केंद्रीय कोयला और खनन मंत्री जी.

किशन रेड्डी ने गुरुवार को देश की पहली बार 13 अन्वेषण ब्लॉकों के लिए अन्वेषण लाइसेंस (ELs) की नीलामी शुरू की।

Mr. Reddy launched the ELs in the presence of Goa Chief Minister Pramod Sawant in Dona Paula, a major reform aimed to unlock India's untapped critical and deep-seated mineral resources.

श्री रेड्डी ने गोवा के मुख्यमंत्री प्रमोद सावंत की उपस्थिति में दोना पाउला में ELs लॉन्च किए, जो भारत के अप्रयुक्त महत्वपूर्ण और गहरे स्थित खनिज संसाधनों को खोलने के लिए एक बड़ा सुधार है।



खनिजों के अन्वेषण ब्लॉकों के लिए हैं।

- Mr. Reddy said that in the last 10 years, India's mining sector has achieved many milestones and emerged as one of the fastest and most dynamic sectors.
श्री रेड्डी ने कहा कि पिछले 10 वर्षों में, भारत के खनन क्षेत्र ने कई उपलब्धियाँ हासिल की हैं और यह सबसे तेज़ी से विकसित होने वाले और गतिशील क्षेत्रों में से एक बन गया है।
- "We are laying the foundation for a new era in mineral exploration," he said.
उन्होंने कहा, "हम खनिज अन्वेषण के एक नए युग की नींव रख रहे हैं।"
- "We have established ourselves as a serious player in the global mineral landscape, it has also opened floodgates of opportunities for the private sector," he said.
उन्होंने कहा, "हमने खुद को वैश्विक खनिज परिदृश्य में एक महत्वपूर्ण खिलाड़ी के रूप में स्थापित किया है," और इससे निजी क्षेत्र के लिए भी असीमित अवसरों के द्वार खुल गए हैं।
- Mr. Reddy added that even greater milestones will be achieved in the coming years, paving the way for India to rise as a global leader.
श्री रेड्डी ने कहा कि आने वाले वर्षों में और भी बड़ी उपलब्धियाँ हासिल की जाएंगी, जिससे भारत को एक वैश्विक नेता के रूप में उभरने का मार्ग मिलेगा।
- The exploration access would be granted exclusively, empowering private companies to explore up to 1,000 square metres per licence, Mr. Reddy said.
श्री रेड्डी ने कहा कि अन्वेषण पहुंच विशेष रूप से प्रदान की जाएगी, जिससे निजी कंपनियों को प्रति लाइसेंस 1,000 वर्ग मीटर तक अन्वेषण करने का अधिकार मिलेगा।
- This new framework will encourage transparency, efficiency, and innovation, ensuring that only the most promising areas remain for detailed exploration, he said.
उन्होंने कहा कि यह नया ढांचा पारदर्शिता, दक्षता और नवाचार को बढ़ावा देगा, जिससे यह सुनिश्चित होगा कि केवल सबसे संभावित क्षेत्रों को विस्तृत अन्वेषण के लिए रखा जाए।



ISRO undocks SpaDex satellites in first attempt

Satellites are orbiting independently and their health is normal, says space agency; on January 16, ISRO successfully executed satellites' docking, making India the fourth country to achieve the feat

GS Paper III: S&T

The Hindu Bureau
BENGALURU

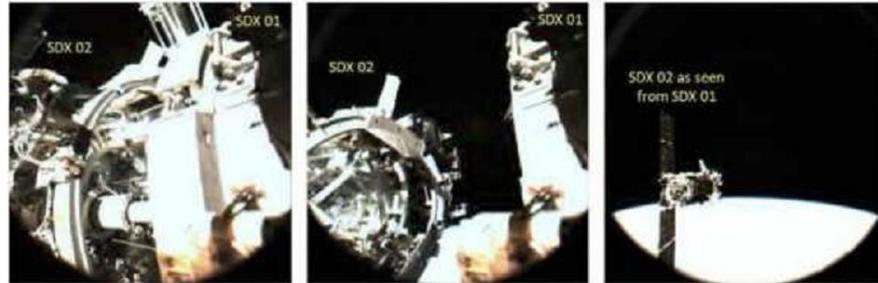
Nearly two months after the Indian Space Research Organisation (ISRO) carried out the docking of the two satellites which are part of the Space Docking Experiment (SpaDeX) mission, the space agency on Thursday accomplished their undocking.

The space agency said that it had accomplished the feat in its very first attempt. The undocking operation was executed at 9.20 a.m.

"The undocking of the satellites took place in a 460 km circular orbit with 45-degree inclination. The satellites are now orbiting independently and their health is normal," the agency said.

"With this, ISRO has now successfully demonstrated all the capabilities required for rendezvous, docking and undocking operations in a circular orbit."

It said that the in-orbit performance of the docked satellites was extensively analysed and an immediate opportunity was



Mission accomplished: On-board images of SpaDex undocking. ISRO

found to be feasible from March 10 to 25.

"All operations were monitored through ground stations located in Bengaluru, Lucknow and Mauritius. Having accomplished this major milestone of undocking, further experiments with satellites are planned for the coming days," the ISRO said.

It further said that exhaustive ground simulations and analysis were the cornerstones of achieving the undocking in the first attempt itself. "Various tests replicating on-orbit conditions were meticulously planned and carried out in preparation for the earliest opportunity for undocking operations," it said.

On January 16, the ISRO successfully executed the

Having accomplished the undocking, more experiments are planned for coming days, says ISRO

SpaDeX docking experiment, 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), which were launched by the PSLV C60 on December 30, were successfully docked on January 16.

Following this historic feat, the space agency had said that the undocking would be carried out in the coming days.

The SpaDeX mission is an important project by the ISRO. It is designed to

develop and demonstrate the technology needed for spacecraft rendezvous, docking and undocking using two small satellites.

Objectives of mission

The demonstration of this technology is essential for futuristic missions such as sending an Indian astronaut to the moon, returning samples from the moon, and building and operation of an Indian Space Station.

The other objectives of the SpaDeX mission include demonstration of the transfer of electric power between the docked spacecraft, which is essential for future applications, such as in-space robotics, composite spacecraft control and payload operations after undocking.

ISRO undocks SpaDeX satellites in first attempt

ISRO ने पहले प्रयास में SpaDeX उपग्रहों को अनडॉक किया



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Nearly two months after the Indian Space Research Organisation (ISRO) carried out the docking of two satellites as part of the Space Docking Experiment (SpaDeX) mission, the agency accomplished their undocking on Thursday.

लगभग दो महीने बाद, जब भारतीय अंतरिक्ष अनुसंधान संगठन (ISRO) ने Space Docking Experiment (SpaDeX) मिशन के तहत दो उपग्रहों को डॉक किया था, एजेंसी ने गुरुवार को उनका अनडॉकिंग सफलतापूर्वक पूरा किया।

- The undocking operation was executed at 9.20 a.m. in a 460 km circular orbit with 45-degree inclination.
अनडॉकिंग ऑपरेशन को सुबह 9:20 बजे 460 किमी की वृत्ताकार कक्षा में 45-डिग्री झुकाव पर निष्पादित किया गया।
- The satellites are now orbiting independently, and their health is normal, the agency said.
एजेंसी के अनुसार, उपग्रह अब स्वतंत्र रूप से कक्षा में घूम रहे हैं और उनकी स्थिति सामान्य है।
- "With this, ISRO has now successfully demonstrated all capabilities required for rendezvous, docking, and undocking operations in a circular orbit," ISRO stated.
"इसके साथ, ISRO ने वृत्ताकार कक्षा में मिलने, डॉकिंग और अनडॉकिंग संचालन के लिए आवश्यक सभी क्षमताओं का सफलतापूर्वक प्रदर्शन किया है," ISRO ने कहा।
- The in-orbit performance of the docked satellites was extensively analyzed, and an immediate opportunity was identified between March 10 to 25 for undocking.
कक्षा में डॉक किए गए उपग्रहों के प्रदर्शन का विस्तृत विश्लेषण किया गया, और अनडॉकिंग के लिए 10 से 25 मार्च के बीच तत्काल अवसर पाया गया।
- All operations were monitored through ground stations in Bengaluru, Lucknow, and Mauritius.
सभी ऑपरेशनों की निगरानी बेंगलुरु, लखनऊ और मॉरीशस में स्थित ग्राउंड स्टेशनों के माध्यम से की गई।
- Having accomplished this major milestone, further experiments with satellites are planned for the coming days, ISRO said.
ISRO ने कहा कि इस महत्वपूर्ण उपलब्धि को हासिल करने के बाद, आने वाले दिनों में उपग्रहों के साथ और प्रयोग किए जाएंगे।

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- Exhaustive ground simulations and analysis played a key role in achieving the undocking in the first attempt.
व्यापक ग्राउंड सिमुलेशन और विश्लेषण ने पहले ही प्रयास में अनडॉकिंग हासिल करने में महत्वपूर्ण भूमिका निभाई।

Historic docking on January 16

16 जनवरी को ऐतिहासिक डॉकिंग

- On January 16, ISRO successfully executed the SpaDeX docking experiment, making India the fourth country after the U.S., Russia, and China to achieve this historic feat.
16 जनवरी को, ISRO ने SpaDeX डॉकिंग प्रयोग सफलतापूर्वक पूरा किया, जिससे भारत अमेरिका, रूस और चीन के बाद यह उपलब्धि हासिल करने वाला चौथा देश बन गया।
- The two satellites – SDX01 (Chaser) and SDX02 (Target) – were launched by PSLV C60 on December 30 and successfully docked on January 16.
दो उपग्रह – SDX01 (Chaser) और SDX02 (Target) – को PSLV C60 द्वारा 30 दिसंबर को लॉन्च किया गया और 16 जनवरी को सफलतापूर्वक डॉक किया गया।
- After this historic feat, ISRO had announced that the undocking would be carried out in the coming days.
इस ऐतिहासिक उपलब्धि के बाद, ISRO ने घोषणा की थी कि अनडॉकिंग आने वाले दिनों में की जाएगी।

Objectives of the SpaDeX Mission

SpaDeX मिशन के उद्देश्य

- The SpaDeX mission is designed to develop and demonstrate the technology required for spacecraft rendezvous, docking, and undocking using two small satellites.
SpaDeX मिशन को दो छोटे उपग्रहों का उपयोग करके अंतरिक्ष यान के मिलने, डॉकिंग और अनडॉकिंग की तकनीक विकसित और प्रदर्शित करने के लिए डिज़ाइन किया गया है।
- This technology demonstration is crucial for futuristic missions, such as:
यह तकनीकी प्रदर्शन भविष्य की मिशनों के लिए महत्वपूर्ण है, जैसे:
 - Sending an Indian astronaut to the Moon
एक भारतीय अंतरिक्ष यात्री को चंद्रमा पर भेजना
 - Returning samples from the Moon
चंद्रमा से नमूने वापस लाना

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- **Building and operating an Indian Space Station**
एक भारतीय अंतरिक्ष स्टेशन का निर्माण और संचालन करना
- Another key objective is the **demonstration of electric power transfer** between **docked spacecraft**, which is essential for:
एक और प्रमुख उद्देश्य डॉक किए गए अंतरिक्ष यान के बीच विद्युत ऊर्जा हस्तांतरण का प्रदर्शन करना है, जो निम्नलिखित के लिए आवश्यक है:
 - **In-space robotics**
अंतरिक्ष रोबोटिक्स
 - **Composite spacecraft control**
संयुक्त अंतरिक्ष यान नियंत्रण
 - **Payload operations after undocking**
अनडॉकिंग के बाद पेलोड संचालन

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'Hubs to develop quantum technology made operational'

GS Paper III: S&T

Jacob Koshy

NEW DELHI

The Centre has made operational "hubs" in four leading institutions to develop quantum computer technology and earmarked funds for them, according to information made public in the Lok Sabha on Wednesday.

Uttar Pradesh, with an allocation of ₹28.7 crore during 2024-25, leads the States funded by the Department of Science and Technology (DST) for developing quantum computer technology. The next two highest-funded States are Maharashtra at ₹3.34 crore and Karnataka at ₹3.7 crore. Delhi and Tamil Nadu follow at ₹2.4 crore and ₹1.7 crore, respectively.

The National Quantum Mission (NQM) was approved by the Union Cabinet in April 2023 at an outlay of ₹6,003.65 crore for a period of eight years. Under the NQM, four Thematic Hubs (T-Hubs) have been established in key technology verticals of quantum computing, quantum communication, quantum sensing & metrology and quantum materials & devices. These T-Hubs consist of 14 technical groups, covering 17 States and two Union Territories. Activi-

NQM was approved by the Cabinet in April 2023 at an outlay of ₹6,003.65 crore for eight years

ties in these T-Hubs would include technology development, human resource development, entrepreneurship development and industry collaborations and international collaborations, Union Minister Jitendra Singh said as part of a written response.

Abhay Karandikar, Secretary, DST told *The Hindu* that the Indian Institute of Technology in Kanpur had been designated as a management coordinating centre for the hubs.

"Allocation to hubs, which started working two months ago, would be done in the forthcoming financial year and the money reflected was seed money for two months," he added.

The four hubs were to be located at the Indian Institute of Science, Bengaluru; IIT-Bombay; IIT-Delhi and IIT-Madras. IIT-Kanpur was not one of the hubs. "All the hubs will get roughly equal amounts. The expected spend is nearly ₹1,500 crore in the coming year," he said.

Hubs to develop quantum technology made operational
क्वांटम तकनीक विकसित करने के लिए हब किए गए संचालित

The Centre has made operational "hubs" in four leading institutions to develop quantum computer technology and earmarked funds for them.

केंद्र सरकार ने चार प्रमुख संस्थानों में "हब" संचालित किए हैं ताकि क्वांटम कंप्यूटर तकनीक विकसित की जा सके और इसके लिए निधि आवंटित की गई है।

• Uttar Pradesh, with an allocation of ₹28.7 crore during 2024-25, leads the States funded by the Department of Science and Technology (DST) for developing quantum computer technology.

उत्तर प्रदेश को 2024-25 में ₹28.7 करोड़ आवंटित किए गए हैं, जिससे यह विज्ञान और प्रौद्योगिकी विभाग (DST) द्वारा वित्त पोषित राज्यों में अग्रणी है।

• The next two highest-funded States are Maharashtra at ₹3.34 crore and Karnataka at ₹3.7 crore. Delhi and Tamil Nadu follow at ₹2.4 crore and ₹1.7 crore, respectively.

इसके बाद महाराष्ट्र को ₹3.34 करोड़ और कर्नाटक को ₹3.7 करोड़ मिले हैं। दिल्ली और तमिलनाडु को क्रमशः ₹2.4 करोड़ और ₹1.7 करोड़ आवंटित किए गए हैं।

National Quantum Mission (NQM)
राष्ट्रीय क्वांटम मिशन (NQM)

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- The National Quantum Mission (NQM) was approved by the Union Cabinet in April 2023 at an outlay of ₹6,003.65 crore for a period of eight years.
राष्ट्रीय क्वांटम मिशन (NQM) को अप्रैल 2023 में केंद्रीय मंत्रिमंडल द्वारा मंजूरी दी गई थी, जिसकी कुल लागत ₹6,003.65 करोड़ है और यह आठ वर्षों की अवधि के लिए है।
- Under the NQM, four Thematic Hubs (T-Hubs) have been established in key technology verticals:
NQM के तहत, चार थीमैटिक हब (T-Hubs) स्थापित किए गए हैं, जो निम्नलिखित प्रमुख तकनीकी क्षेत्रों में कार्य करेंगे:
 - Quantum computing
क्वांटम कंप्यूटिंग
 - Quantum communication
क्वांटम संचार
 - Quantum sensing & metrology
क्वांटम संवेदीकरण और मेट्रोलॉजी
 - Quantum materials & devices
क्वांटम सामग्री और उपकरण
- These T-Hubs consist of 14 technical groups, covering 17 States and two Union Territories.
ये T-Hubs कुल 14 तकनीकी समूहों से मिलकर बने हैं, जो 17 राज्यों और दो केंद्र शासित प्रदेशों को कवर करते हैं।
- Activities in these hubs include:
इन हब्स में निम्नलिखित गतिविधियाँ शामिल होंगी:
 - Technology development
प्रौद्योगिकी विकास
 - Human resource development
मानव संसाधन विकास
 - Entrepreneurship development
उद्यमिता विकास



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- Industry collaborations and international partnerships
उद्योग सहयोग और अंतरराष्ट्रीय साझेदारी

Management and Funding

प्रबंधन और वित्त पोषण

- **Abhay Karandikar, Secretary, DST**, stated that the **Indian Institute of Technology in Kanpur (IIT-Kanpur)** has been designated as the **management coordinating centre** for the hubs.
DST सचिव अभय करंदीकर ने कहा कि भारतीय प्रौद्योगिकी संस्थान कानपुर (IIT-कानपुर) को हब्स के लिए प्रबंधन समन्वय केंद्र के रूप में नामित किया गया है।
- The **allocation to hubs started two months ago**, and the **funds reflected were seed money for two months**.
हब्स के लिए धनराशि का आवंटन दो महीने पहले शुरू हुआ, और यह दो महीने के लिए प्रारंभिक (सीड) धनराशि थी।
- The **four hubs** are located at:
चार हब्स निम्नलिखित संस्थानों में स्थित हैं:
 - **Indian Institute of Science (IISc), Bengaluru**
भारतीय विज्ञान संस्थान (IISc), बेंगलुरु
 - **IIT-Bombay**
IIT-बॉम्बे
 - **IIT-Delhi**
IIT-दिल्ली
 - **IIT-Madras**
IIT-मद्रास
- **IIT-Kanpur was not one of the hubs**, but it was designated as the **management coordinating centre**.
IIT-कानपुर हब्स में शामिल नहीं था, लेकिन इसे प्रबंधन समन्वय केंद्र के रूप में नियुक्त किया गया।
- **All hubs will receive roughly equal amounts**, and the **expected expenditure in the coming year is nearly ₹1,500 crore**.
सभी हब्स को लगभग समान राशि मिलेगी, और आगामी वर्ष में अनुमानित खर्च लगभग ₹1,500 करोड़ होगा।



‘Lenders funding emerging green projects at higher risk’

RBI Governor flags credit risk due to borrowers’ use of new and emerging green technologies with limited track record; seeks effective mechanism for risk appraisal in financing such projects

GS Paper III: Economy: Banking System

MUMBAI

Reserve Bank of India (RBI) Governor Sanjay Malhotra flagged higher credit risks for lenders financing emerging green technologies with limited track record.

“One important aspect of green financing/lending for sustainable finance is the higher credit risk due to borrowers’ use of new and emerging green technologies, which have relatively limited track record in terms of reliability, efficiency, and effectiveness,” he said at an RBI event in New Delhi on Thursday.

Climate of safety

RBI Governor has emphasised on developing strategies to better appraise risks in financing projects that use green technologies



Sanjay Malhotra

■ Impact of climate change risks is not limited to financial system, but extends to real economy

■ A holistic approach needs to be adopted for mitigation of climate change risks

■ Regulated entities should set up a pool via appropriate institutional arrangement to deal with the issue

“Regulated entities, therefore, need to develop suitable capacity and technical know-hows to better appraise risks in financing projects which use such green technologies,” Mr. Malhotra emphasised.

Stating that the impact of climate change risks was not limited to the financial system alone, but extended to the real economy, he called for a “cohesive coordination and harmonisation” in approach among

financial sector regulators, regulated entities and various government agencies. “There is a need to adopt a holistic approach towards mitigation of climate change risks considering the country specific requirements and circumstances,” he said.

“Capacity and expertise constraints limit the ability to appraise and thus finance climate change mitigation. It also enhances the risk of funding such projects,” he pointed out.

He urged regulated entities to ‘seriously consider’ setting up such a pool through an ‘appropriate institutional arrangement’ to deal with the issue.

Lenders funding emerging green projects at higher risk

नए हरित परियोजनाओं को वित्तपोषित करने वाले ऋणदाताओं के लिए उच्च जोखिम

Reserve Bank of India (RBI) Governor Sanjay Malhotra flagged higher credit risks for lenders financing emerging green technologies with limited track record.

भारतीय रिज़र्व बैंक (RBI) के गवर्नर संजय मल्होत्रा ने नए हरित प्रौद्योगिकियों को वित्तपोषित करने वाले ऋणदाताओं के लिए उच्च क्रेडिट जोखिम को उजागर किया,



क्योंकि इनकी सीमित कार्यक्षमता का रिकॉर्ड है।

- "One important aspect of green financing/lending for sustainable finance is the higher credit risk due to borrowers' use of new and emerging green technologies," he said at an RBI event in New Delhi on Thursday.
उन्होंने गुरुवार को नई दिल्ली में एक RBI कार्यक्रम में कहा, "हरित वित्तपोषण/ऋण का एक महत्वपूर्ण पहलू यह है कि नए और उभरते हुए हरित तकनीकों के उपयोग के कारण उधारकर्ताओं के लिए उच्च क्रेडिट जोखिम होता है।"
- "Regulated entities need to develop suitable capacity and technical know-how to better appraise risks in financing projects which use such green technologies," Mr. Malhotra emphasised.
श्री मल्होत्रा ने जोर देकर कहा कि "विनियमित संस्थानों को इन हरित तकनीकों का उपयोग करने वाली परियोजनाओं के वित्तपोषण में जोखिम का बेहतर मूल्यांकन करने के लिए उपयुक्त क्षमता और तकनीकी विशेषज्ञता विकसित करने की आवश्यकता है।"

Climate change risks and financial sector

जलवायु परिवर्तन जोखिम और वित्तीय क्षेत्र

- He stated that the **impact of climate change risks is not limited to the financial system alone**, but extends to the **real economy**.
उन्होंने कहा कि जलवायु परिवर्तन जोखिमों का प्रभाव केवल वित्तीय प्रणाली तक सीमित नहीं है, बल्कि यह वास्तविक अर्थव्यवस्था तक फैला हुआ है।
- He called for a "**cohesive coordination and harmonisation**" in approach among **financial sector regulators, regulated entities, and various government agencies**.
उन्होंने "वित्तीय क्षेत्र के नियामकों, विनियमित संस्थाओं और विभिन्न सरकारी एजेंसियों के बीच समन्वय और सामंजस्य" स्थापित करने की आवश्यकता पर बल दिया।
- "There is a need to adopt a holistic approach towards mitigation of climate change risks, considering the country-specific requirements and circumstances," he said.
उन्होंने कहा कि "जलवायु परिवर्तन जोखिमों को कम करने के लिए एक समग्र दृष्टिकोण अपनाने की आवश्यकता है, जिसमें देश की विशिष्ट आवश्यकताओं और परिस्थितियों को ध्यान में रखा जाए।"

Challenges in financing green projects

हरित परियोजनाओं के वित्तपोषण में चुनौतियाँ



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- "Capacity and expertise constraints limit the ability to appraise and thus finance climate change mitigation. It also enhances the risk of funding such projects," he pointed out.
उन्होंने कहा कि "क्षमता और विशेषज्ञता की सीमाएँ जलवायु परिवर्तन को कम करने के लिए परियोजनाओं के मूल्यांकन और वित्तपोषण की क्षमता को सीमित करती हैं। इससे ऐसे परियोजनाओं को वित्तपोषित करने का जोखिम भी बढ़ता है।"
- He urged regulated entities to "seriously consider" setting up a pool through an "appropriate institutional arrangement" to deal with the issue.
उन्होंने विनियमित संस्थाओं से "गंभीरता से विचार" करने का अनुरोध किया कि वे इस समस्या से निपटने के लिए "उपयुक्त संस्थागत व्यवस्था" के तहत एक पूल स्थापित करें।

PATRIOTIC IAS



Kidney disease no longer just for the elderly, say experts

Doctors stress that **maintaining an ideal body weight, following a balanced diet, and ensuring six to eight hours of sleep** are crucial steps toward kidney health, despite the increasing prevalence of kidney-related issues among young Indians, awareness remains alarmingly low

GS Paper III: S&T

Siddharth Kumar Singh

As the world observed **World Kidney Day** on March 13, medical experts are sounding the alarm over the increasing prevalence of kidney-related ailments among young Indians. Traditionally considered a health concern for older individuals, chronic kidney disease (CKD) is now showing up even among teenagers and young adults, fueled by poor lifestyle choices, unregulated supplement consumption, and lack of awareness.

Studies indicate that kidney problems affect approximately 10% to 15% of Indians, cutting across all age groups, including teenagers. Unlike other ailments, early-stage kidney disease does not present obvious warning signs like swelling or changes in urine output, making regular screening essential, says Manisha Sahay, professor and head of the department of nephrology at Osmania General Hospital. She warns that kidney disease is a silent killer, often showing no symptoms in its early stages.

"In many countries, routine kidney function tests such as urine albumin and creatinine blood tests are conducted annually. These tests are inexpensive yet provide crucial insights into kidney health. In India, at the very least, high-risk individuals should undergo these tests," Dr. Manisha says. She identifies high-risk groups, as those individuals with diabetes, hypertension, cardiac conditions, obesity, or a family history of kidney disease. Young people exposed to pesticides, frequent users of painkillers, and women with pregnancy-related hypertension are also vulnerable.

Addressing the need for lifestyle modifications, Dr. Manisha stresses the importance of maintaining ideal body weight through regular exercise, and following a balanced diet, and limiting salt intake to five grams per day. She advises against excessive fast food consumption and hidden sources of sodium, such as soy sauce, recommending natural seasonings like lemon and black pepper instead. Staying hydrated, ensuring six to eight hours of sleep, and managing blood sugar, blood pressure, and cholesterol levels are crucial steps toward kidney health.

Inadequate water increase risk

The rising concern over kidney health among young people is echoed by Avula Naveen Reddy, consultant nephrologist at the Asian Institute of **Nephrology and Urology (AINU)**. He has observed a significant increase in kidney-related cases among Gen-Z (individuals born between 1997 and 2012). "Many gym-goers report elevated serum creatinine levels, while some experience protein leakage in their urine. Additionally, stress and inadequate water intake among students are leading to a higher incidence of urinary infections," he explains.

At AINU, three to four kidney-related cases involving individuals aged 16 to 20 years are reported each month, a noticeable rise compared to previous years. Routine screenings, particularly for



An artist crafting a sand sculpture at R.K. Beach, Visakhapatnam, on the eve of World Kidney Day. K.R DEEPAK

students planning to study abroad, have revealed underlying kidney issues that may have otherwise gone undiagnosed. Dr. Reddy urges young individuals to avoid over-the-counter painkillers, minimise whey protein supplements, and focus on plant-based protein sources. He also highlights the importance of proper hydration, noting that many students reduce their water intake due to poorly maintained restrooms in schools and colleges, increasing their risk of kidney stones and urinary infections.

Symptoms such as excessive foaming in urine (a sign of protein leakage), fever with abdominal pain, a burning sensation while urinating, and traces of blood in urine should not be ignored. While these conditions may not always be life-threatening, early detection and timely intervention are crucial, Dr. Reddy notes.

Despite the increasing prevalence of kidney-related issues among young Indians, awareness remains alarmingly low. Experts stress that prevention is far more effective than treatment, as dialysis and kidney transplants remain inaccessible for many due to limited resources.

"India performs around 15,000 kidney transplants per year, while the demand is nearly two lakh. With each dialysis session requiring around 125 litres of water, even expanding dialysis facilities cannot meet the growing need. The only viable solution is to prevent kidney failure in the first place," Dr. Manisha points out.

D. Sree Bhushan Raju, professor and head of the department of nephrology at Nizam's Institute of Medical Sciences (NIMS), highlights additional risk factors. Preterm babies with a birth weight below

Symptoms such as excessive foaming in urine (a sign of protein leakage), fever with abdominal pain, a burning sensation while urinating, and traces of blood in urine should not be ignored

2.5 kilograms are at a higher risk of developing kidney-related complications later in life. Teenagers and young adults aged 15 to 20 who are obese, as well as those with a family history of kidney disease, also face increased vulnerability. Additionally, individuals with childhood kidney conditions such as nephrotic syndrome, which leads to excessive protein loss and body swelling must be closely monitored. Structural kidney abnormalities requiring early surgery further heighten the risk of kidney disease in adulthood.

One of the most ignored warning signs is the presence of blood in urine, which many dismiss as a one-time occurrence. Dr. Raju also raises concerns over the widespread use of protein supplements like whey protein and creatine among gym-goers, which can contribute to kidney damage.

The prolonged use of painkillers, antacids, and other medications without medical supervision only exacerbates the risk.

Hypertension and diabetes, sometimes detected accidentally, are also significant contributors to kidney disease. Dr. Raju explains that CKD often remains asymptomatic until nearly 90% of kidney function is lost. Even when symptoms appear, they are frequently mistaken for

unrelated issues, such as back pain.

A common misconception is that kidney failure leads to reduced urine output; in reality, many patients on dialysis still pass normal amounts of urine, he said.

To combat this silent progression, Dr. Raju recommends that individuals at high risk undergo creatinine tests every six months. Those with a family history of kidney problems or other risk factors should opt for annual check-ups. He also advises preterm and low-birth-weight individuals to avoid excessive physical exertion aimed at rapid weight gain and warns against the unregulated use of supplements and medications.

Kidney disease in children

For children, kidney disease can arise from conditions such as cystic dysplastic kidneys, polycystic kidneys, hereditary kidney diseases, and chronic glomerular and tubular disorders. According to V.V.R. Satya Prasad, senior consultant paediatric nephrologist at Rainbow Children's Hospital, CKD is irreversible and requires dialysis or kidney transplantation for survival. Since kidneys filter waste and fluids from the blood, their failure results in harmful waste accumulation, leading to high blood pressure and, ultimately, kidney failure. End-stage renal disease (ESRD) occurs when kidneys lose 90% of function, necessitating urgent medical intervention.

With kidney disease cases rising among the younger generation, prioritising routine screenings, maintaining a healthy lifestyle, and staying vigilant about early symptoms can help curb this growing health crisis before it escalates further. (siddharth.kumar@thehindu.co.in)



Kidney disease no longer just for the elderly, say experts

गुर्दे की बीमारी अब केवल बुजुर्गों तक सीमित नहीं, विशेषज्ञों का मत

As the world observed World Kidney Day on March 13, medical experts warned about the increasing prevalence of kidney-related ailments among young Indians.

जब दुनिया ने 13 मार्च को विश्व किडनी दिवस मनाया, तो चिकित्सा विशेषज्ञों ने युवा भारतीयों में गुर्दे से जुड़ी बीमारियों के बढ़ते मामलों पर चिंता जताई।

- Traditionally considered a **health concern for older individuals, chronic kidney disease (CKD)** is now appearing even among **teenagers and young adults**.
आमतौर पर बुजुर्गों की स्वास्थ्य समस्या मानी जाने वाली क्रोनिक किडनी डिजीज (CKD) अब किशोरों और युवाओं में भी देखी जा रही है।
- The rise in CKD among young people is **driven by poor lifestyle choices, unregulated supplement consumption, and lack of awareness**.
खराब जीवनशैली, अनियमित सप्लीमेंट का सेवन और जागरूकता की कमी के कारण युवाओं में CKD के मामले बढ़ रहे हैं।

Prevalence and Lack of Early Symptoms

बीमारी की व्यापकता और शुरुआती लक्षणों की कमी

- Studies indicate that **kidney problems affect approximately 10% to 15% of Indians, including teenagers**.
अध्ययनों के अनुसार, गुर्दे की समस्याएँ लगभग 10% से 15% भारतीयों को प्रभावित करती हैं, जिनमें किशोर भी शामिल हैं।
- Unlike other ailments, **early-stage kidney disease does not present obvious warning signs like swelling or changes in urine output, making regular screening essential**.
अन्य बीमारियों के विपरीत, शुरुआती अवस्था में गुर्दे की बीमारी के स्पष्ट लक्षण नहीं दिखते, जैसे सूजन या मूत्र उत्पादन में बदलाव, इसलिए नियमित जांच अनिवार्य है।
- **Dr. Manisha Sahay**, professor and head of nephrology at **Osmania General Hospital**, warns that **kidney disease is a silent killer**, often showing **no symptoms in its early stages**.



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डॉ. मनीषा सहाय, जो उस्मानिया जनरल हॉस्पिटल में नेफ्रोलॉजी विभाग की प्रमुख हैं, बताती हैं कि गुर्दे की बीमारी एक मौन घातक रोग है, जो शुरुआती चरण में कोई लक्षण नहीं दिखाती।

Need for Routine Kidney Tests

नियमित किडनी जांच की आवश्यकता

- In many countries, **routine kidney function tests**, such as **urine albumin and creatinine blood tests**, are conducted annually.
कई देशों में नियमित किडनी फंक्शन टेस्ट, जैसे यूरिन एलबुमिन और क्रिएटिनिन ब्लड टेस्ट, सालाना किए जाते हैं।
- These tests are **inexpensive but provide crucial insights into kidney health**.
ये परीक्षण सस्ते होते हैं लेकिन गुर्दे के स्वास्थ्य की महत्वपूर्ण जानकारी प्रदान करते हैं।
- In India, at the very least, **high-risk individuals should undergo these tests**.
भारत में, कम से कम उच्च जोखिम वाले व्यक्तियों को ये परीक्षण करवाने चाहिए।
- **High-risk groups** include people with **diabetes, hypertension, cardiac conditions, obesity, or a family history of kidney disease**.
उच्च जोखिम वाले समूहों में मधुमेह, उच्च रक्तचाप, हृदय रोग, मोटापा, या गुर्दे की बीमारी का पारिवारिक इतिहास रखने वाले लोग शामिल हैं।
- **Young people exposed to pesticides, frequent users of painkillers, and women with pregnancy-related hypertension** are also vulnerable.
कीटनाशकों के संपर्क में रहने वाले युवा, दर्द निवारक दवाओं का बार-बार उपयोग करने वाले, और गर्भावस्था में उच्च रक्तचाप से प्रभावित महिलाएँ भी जोखिम में हैं।

Lifestyle Modifications for Kidney Health

गुर्दे के स्वास्थ्य के लिए जीवनशैली में बदलाव

- **Maintaining an ideal body weight through regular exercise** is crucial for kidney health.
नियमित व्यायाम के माध्यम से आदर्श शरीर का वजन बनाए रखना गुर्दे के स्वास्थ्य के लिए महत्वपूर्ण है।
- **Following a balanced diet and limiting salt intake to five grams per day** is essential.
संतुलित आहार का पालन करना और नमक का सेवन प्रतिदिन पांच ग्राम तक सीमित रखना आवश्यक

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हैं।

- Avoiding **excessive fast food consumption** and **hidden sources of sodium**, such as **soy sauce**, is recommended.
अत्यधिक जंक फूड के सेवन से बचना और छिपे हुए सोडियम स्रोतों, जैसे सोया सॉस, का उपयोग कम करना चाहिए।
- Instead, **natural seasonings like lemon and black pepper** should be used.
इसकी जगह नींबू और काली मिर्च जैसे प्राकृतिक मसालों का उपयोग करना बेहतर है।
- **Staying hydrated** and ensuring **six to eight hours of sleep** are crucial steps toward kidney health.
पर्याप्त मात्रा में पानी पीना और छह से आठ घंटे की नींद लेना गुर्दे के स्वास्थ्य के लिए अत्यंत महत्वपूर्ण है।
- **Managing blood sugar, blood pressure, and cholesterol levels** also plays a vital role in preventing kidney disease.
रक्त शर्करा, रक्तचाप और कोलेस्ट्रॉल के स्तर को नियंत्रित करना भी गुर्दे की बीमारी को रोकने में महत्वपूर्ण भूमिका निभाता है।

Inadequate water increases risk

अपर्याप्त पानी से जोखिम बढ़ता है

- The rising concern over kidney health among young people is echoed by Avula Naveen Reddy, consultant nephrologist at the Asian Institute of Nephrology and Urology (AINU).
युवाओं में बढ़ती गुर्दे की समस्याओं पर चिंता व्यक्त की गई है एशियन इंस्टीट्यूट ऑफ नेफ्रोलॉजी एंड यूरोलॉजी (AINU) के सलाहकार नेफ्रोलॉजिस्ट अवुला नवीन रेड्डी द्वारा।
- He has observed a **significant increase in kidney-related cases among Gen-Z** (individuals born between 1997 and 2012).
उन्होंने Gen-Z (1997 से 2012 के बीच जन्मे) में गुर्दे से संबंधित मामलों में उल्लेखनीय वृद्धि देखी है।
- **Many gym-goers report elevated serum creatinine levels**, while some experience protein leakage in their urine.
कई जिम जाने वालों में सीरम क्रिएटिनिन स्तर बढ़ा हुआ पाया गया, जबकि कुछ में मूत्र में प्रोटीन का रिसाव देखा गया।



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- Stress and inadequate water intake among students are leading to a higher incidence of urinary infections.

छात्रों में तनाव और पानी की कमी के कारण मूत्र मार्ग संक्रमण (UTI) के मामले बढ़ रहे हैं।

Increase in Kidney Cases Among Young Individuals

युवाओं में गुर्दे की बीमारियों के मामले बढ़ रहे हैं

- At AINU, three to four kidney-related cases involving individuals aged 16 to 20 years are reported each month, showing a noticeable rise compared to previous years.

AINU में हर महीने 16 से 20 वर्ष के 3 से 4 किडनी से जुड़ी बीमारियों के मामले दर्ज किए जाते हैं, जो पिछले वर्षों की तुलना में अधिक हैं।

- Routine screenings, particularly for students planning to study abroad, have revealed underlying kidney issues that may have otherwise gone undiagnosed.

रूटीन जांच, विशेष रूप से विदेश में पढ़ाई की योजना बना रहे छात्रों के लिए, ने ऐसे किडनी रोगों का पता लगाया जो अन्यथा अनदेखे रह जाते।

Preventive Measures for Kidney Health

गुर्दे के स्वास्थ्य के लिए रोकथाम के उपाय

- Dr. Reddy urges young individuals to avoid over-the-counter painkillers, minimize whey protein supplements, and focus on plant-based protein sources.

डॉ. रेड्डी ने युवाओं से बिना डॉक्टर की सलाह के दर्द निवारक दवाओं का उपयोग न करने, व्हे प्रोटीन सप्लीमेंट को कम करने, और पौधों से प्राप्त प्रोटीन स्रोतों पर ध्यान देने की सलाह दी।

- He also highlights the importance of proper hydration, noting that many students reduce their water intake due to poorly maintained restrooms in schools and colleges.

उन्होंने पर्याप्त पानी पीने पर जोर दिया, क्योंकि कई छात्र स्कूलों और कॉलेजों में साफ-सुथरे शौचालयों की कमी के कारण पानी कम पीते हैं।

- This increases their risk of kidney stones and urinary infections.

इससे गुर्दे में पथरी और मूत्र संक्रमण (UTI) का खतरा बढ़ जाता है।

Warning Signs of Kidney Disease

गुर्दे की बीमारी के चेतावनी संकेत

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- Symptoms such as:
निम्नलिखित लक्षण दिखाई दें तो सतर्क रहें:
 - **Excessive foaming in urine** (a sign of protein leakage)
मूत्र में अत्यधिक झाग (जो प्रोटीन रिसाव का संकेत हो सकता है)
 - **Fever with abdominal pain**
पेट दर्द के साथ बुखार
 - **Burning sensation while urinating**
मूत्रत्याग के दौरान जलन
 - **Traces of blood in urine**
मूत्र में खून के धब्बे
- While these conditions may **not always be life-threatening**, **early detection and timely intervention are crucial**.
ये समस्याएँ हमेशा जानलेवा नहीं होतीं, लेकिन समय पर पहचान और इलाज आवश्यक होता है।

Low Awareness and Limited Treatment Options

कम जागरूकता और सीमित उपचार विकल्प

- Despite the **increasing prevalence of kidney-related issues among young Indians**, awareness remains **alarmingly low**.
भारत में युवाओं में बढ़ती गुर्दे की समस्याओं के बावजूद, इस बारे में जागरूकता काफी कम है।
- Experts stress that **prevention is far more effective than treatment**, as **dialysis and kidney transplants remain inaccessible for many due to limited resources**.
विशेषज्ञों का कहना है कि रोकथाम इलाज से अधिक प्रभावी है, क्योंकि सीमित संसाधनों के कारण डायलिसिस और किडनी ट्रांसप्लांट अधिकांश लोगों के लिए सुलभ नहीं हैं।
- **India performs around 15,000 kidney transplants per year**, while the demand is nearly two lakh.
भारत में हर साल लगभग 15,000 किडनी ट्रांसप्लांट होते हैं, जबकि मांग करीब दो लाख है।
- **Each dialysis session requires around 125 litres of water**, making it difficult to expand dialysis facilities to meet growing demand.
प्रत्येक डायलिसिस सत्र में लगभग 125 लीटर पानी की आवश्यकता होती है, जिससे डायलिसिस सुविधाओं का विस्तार करना मुश्किल हो जाता है।



- The only viable solution is to prevent kidney failure in the first place, says Dr. Manisha.
डॉ. मनीषा के अनुसार, एकमात्र व्यावहारिक समाधान यह है कि गुर्दे की विफलता को पहले ही रोका जाए।

Additional Risk Factors for Kidney Disease

गुर्दे की बीमारी के अन्य जोखिम कारक

- D. Sree Bhushan Raju, professor and head of nephrology at NIMS, highlights additional risk factors:
डी. श्री भूषण राजू, NIMS में नेफ्रोलॉजी विभाग के प्रमुख, ने अन्य जोखिम कारकों पर प्रकाश डाला:
 - Preterm babies with a birth weight below 2.5 kg are at higher risk of kidney complications later in life.
जिन शिशुओं का जन्म समय से पहले और वजन 2.5 किलोग्राम से कम होता है, वे बाद में गुर्दे की जटिलताओं के उच्च जोखिम में होते हैं।
 - Teenagers and young adults aged 15 to 20 who are obese, or those with a family history of kidney disease, also face increased vulnerability.
15 से 20 वर्ष के मोटे किशोर और युवा, या जिनके परिवार में गुर्दे की बीमारी का इतिहास है, वे भी अधिक जोखिम में होते हैं।
 - Individuals with childhood kidney conditions like nephrotic syndrome, which leads to excessive protein loss and body swelling, must be closely monitored.
बचपन में नेफ्रोटिक सिंड्रोम जैसी गुर्दे की बीमारी से पीड़ित लोग, जो अत्यधिक प्रोटीन हानि और शरीर में सूजन का कारण बनती है, उन्हें नियमित रूप से निगरानी में रखा जाना चाहिए।
 - Structural kidney abnormalities requiring early surgery further increase the risk of kidney disease in adulthood.
संरचनात्मक गुर्दे की समस्याएं जिनके लिए बचपन में सर्जरी की आवश्यकता होती है, वे बड़े होने पर गुर्दे की बीमारी के जोखिम को बढ़ा देती हैं।

Common Misconceptions About Kidney Disease

गुर्दे की बीमारी के बारे में आम भ्रांतियाँ

- One of the most ignored warning signs is the presence of blood in urine, which many dismiss as a one-time occurrence.
गुर्दे की बीमारी के सबसे अनदेखे चेतावनी संकेतों में से एक मूत्र में खून आना है, जिसे कई लोग एक बार



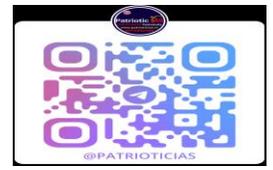
की घटना समझकर नजरअंदाज कर देते हैं।

- Dr. Raju warns against excessive use of protein supplements like whey protein and creatine, which can contribute to kidney damage.
डॉ. राजू ने व्हे प्रोटीन और क्रिएटिन जैसे प्रोटीन सप्लीमेंट्स के अत्यधिक उपयोग के खिलाफ चेतावनी दी, क्योंकि ये गुर्दे की क्षति में योगदान कर सकते हैं।
- Regular creatinine tests every six months are recommended for high-risk individuals.
उच्च जोखिम वाले व्यक्तियों को हर छह महीने में क्रिएटिनिन परीक्षण कराने की सलाह दी जाती है।

Kidney disease in children

बच्चों में गुर्दे की बीमारी

- For children, kidney disease can arise from conditions such as cystic dysplastic kidneys, polycystic kidneys, hereditary kidney diseases, and chronic glomerular and tubular disorders.
बच्चों में गुर्दे की बीमारी सिस्टिक डिसप्लास्टिक किडनी, पॉलीसिस्टिक किडनी, आनुवंशिक गुर्दे की बीमारियाँ, और क्रोनिक ग्लोमेरुलर व ट्यूब्यूलर विकारों के कारण हो सकती है।
- According to V.V.R. Satya Prasad, senior consultant paediatric nephrologist at Rainbow Children's Hospital, CKD is irreversible and requires dialysis or kidney transplantation for survival.
रेनबो चिल्ड्रन हॉस्पिटल के वरिष्ठ सलाहकार बाल नेफ्रोलॉजिस्ट वी.वी.आर. सत्य प्रसाद के अनुसार, क्रोनिक किडनी डिजीज (CKD) अपरिवर्तनीय होती है और जीवित रहने के लिए डायलिसिस या किडनी ट्रांसप्लांट की आवश्यकता होती है।
- Since kidneys filter waste and fluids from the blood, their failure results in harmful waste accumulation, leading to high blood pressure and, ultimately, kidney failure.
क्योंकि गुर्दे रक्त से अपशिष्ट और तरल पदार्थ को फ़िल्टर करते हैं, उनकी विफलता से हानिकारक अपशिष्ट शरीर में जमा हो जाता है, जिससे उच्च रक्तचाप और अंततः गुर्दे की विफलता हो सकती है।
- End-stage renal disease (ESRD) occurs when kidneys lose 90% of function, necessitating urgent medical intervention.
अंतिम चरण की गुर्दे की बीमारी (ESRD) तब होती है जब गुर्दे अपनी 90% कार्यक्षमता खो देते हैं, जिससे तत्काल चिकित्सा हस्तक्षेप की आवश्यकता पड़ती है।
- With kidney disease cases rising among the younger generation, prioritizing routine screenings, maintaining a healthy lifestyle, and staying vigilant about early symptoms can help curb this growing issue.



युवा पीढ़ी में गुर्दे की बीमारी के मामलों में वृद्धि के साथ, नियमित जांच को प्राथमिकता देना, स्वस्थ जीवनशैली बनाए रखना और शुरुआती लक्षणों के प्रति सतर्क रहना इस बढ़ती समस्या को नियंत्रित करने में मदद कर सकता है।

What is Hantavirus and how does it spread?

Athira Elssa Johnson

GS Paper III: S&T

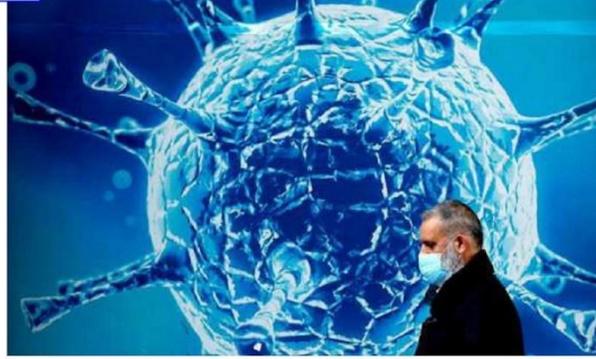
According to the U.S. Centers for Disease Control and Prevention (CDC), hantaviruses are a family of viruses that can cause severe, potentially fatal illnesses including hantavirus pulmonary syndrome (HPS) and hemorrhagic fever with renal syndrome (HFRS), characterised by severe respiratory illness and internal bleeding with kidney failure.

The recent passing of Betsy Hackman, wife of renowned American actor Gene Hackman, has drawn attention to this deadly virus. Although cases are rare, the severity of the illness makes understanding its spread, symptoms, and treatment options crucial.

How does hantavirus occur?

Hantaviruses are a family of viruses carried by certain rodents, such as deer mice, white-footed mice, rice rats, and cotton rats. According to the CDC, humans typically contract hantavirus through contact with infected rodent waste, primarily via aerosolisation when disturbing contaminated materials, such as sweeping or cleaning infested areas.

According to the World Health Organiza-



Hantavirus has no specific cure, but early medical care can improve survival rates. REUTERS

sation's manual, hantaviruses are a family of viruses with several strains exhibiting varying degrees of severity.

The infection cause flu-like symptoms such as fever, muscle aches, and fatigue within 1-8 weeks of exposure, followed by a severe respiratory phase characterised by shortness of breath, coughing, and

chest tightness, which can rapidly escalate to acute respiratory distress and potentially fatal outcomes without prompt medical intervention.

High-risk groups include people who work or live in rodent-prone areas, such as farmers, construction workers, campers, and homeowners with rodent infestations.

The infection cause flu-like symptoms such as fever, muscle aches, and fatigue, followed by respiratory phase characterised by shortness of breath, coughing

The CDC also emphasize that children under five, pregnant women, and individuals with weakened immune systems should avoid handling pet rodents.

What are the treatment options?

Currently, even though there is no specific antiviral treatment or cure for hantavirus, medical care focuses on managing symptoms and supporting the patient through the most dangerous phases of the illness. In cases of HPS, patients are often given oxygen therapy to ease breathing difficulties. Severe cases may require intensive care, including mechanical ventilation to assist lung function.

Early detection and immediate medical attention are crucial for preventing severe respiratory distress. Preventive methods through rodent control and adherence to proper sanitation protocols is crucial. (athira.elssa@thehindu.co.in)

What is Hantavirus and how does it spread?

हंटावायरस क्या है और यह कैसे फैलता है?

According to the U.S. Centers for Disease Control and Prevention (CDC), hantaviruses are a family of viruses that can cause severe, potentially fatal illnesses including:

अमेरिकी रोग नियंत्रण और रोकथाम केंद्र (CDC) के अनुसार, हंटावायरस वायरस का एक समूह है, जो गंभीर और संभावित रूप से घातक बीमारियाँ पैदा कर सकता है, जिनमें शामिल हैं:

- Hantavirus Pulmonary Syndrome (HPS) – Severe respiratory illness
हंटावायरस पल्मोनरी सिंड्रोम (HPS) – गंभीर श्वसन संबंधी बीमारी
- Hemorrhagic Fever with Renal Syndrome (HFRS) – Internal bleeding and kidney failure



हेमरेजिक फीवर विद रीनल सिंड्रोम (HFRS) – आंतरिक रक्तस्राव और गुर्दे की विफलता

- The recent passing of Betsy Hackman, wife of American actor Gene Hackman, has drawn attention to this deadly virus.
प्रसिद्ध अमेरिकी अभिनेता जीन हैकमैन की पत्नी, बेट्सी हैकमैन के हाल ही में निधन के कारण इस घातक वायरस की ओर ध्यान आकर्षित हुआ है।
- Although cases are rare, the severity of the illness makes understanding its spread, symptoms, and treatment crucial.
हालांकि इसके मामले दुर्लभ हैं, लेकिन बीमारी की गंभीरता के कारण इसके प्रसार, लक्षणों और उपचार को समझना आवश्यक हो जाता है।

How does hantavirus occur?

हंटावायरस कैसे होता है?

- Hantaviruses are carried by certain rodents such as deer mice, white-footed mice, rice rats, and cotton rats.
हंटावायरस कुछ कृतक (चूहों) द्वारा फैलता है, जैसे हिरण चूहे, सफेद पंजों वाले चूहे, राइस रैट्स और कॉटन रैट्स।
- According to the CDC, humans typically contract hantavirus through contact with infected rodent waste, primarily via aerosolisation when disturbing contaminated materials, such as sweeping or cleaning infested areas.
CDC के अनुसार, मनुष्य आमतौर पर संक्रमित कृतकों के मल-मूत्र के संपर्क में आने से संक्रमित होते हैं, विशेष रूप से जब दूषित सतहों की सफाई या झाड़ू लगाने से हवाई कणों के माध्यम से वायरस फैलता है।
- The World Health Organization (WHO) states that hantaviruses have several strains exhibiting varying degrees of severity.
विश्व स्वास्थ्य संगठन (WHO) के अनुसार, हंटावायरस के विभिन्न प्रकार होते हैं, जिनकी गंभीरता अलग-अलग होती है।
- The infection causes flu-like symptoms such as fever, muscle aches, and fatigue within 1-8 weeks of exposure.
संक्रमण के लक्षण एक्सपोजर के 1-8 सप्ताह के भीतर दिखाई देते हैं, जिनमें बुखार, मांसपेशियों में दर्द और थकान शामिल हैं।
- It is followed by a severe respiratory phase characterized by:
इसके बाद गंभीर श्वसन चरण होता है, जिसमें शामिल हैं:



- Shortness of breath
सांस लेने में तकलीफ
- Coughing
खांसी
- Chest tightness
सीने में जकड़न
- Acute respiratory distress that can lead to fatal outcomes without prompt medical intervention
गंभीर श्वसन संकट, जो समय पर इलाज न मिलने पर घातक हो सकता है।

Who is at high risk?

कौन उच्च जोखिम में है?

- High-risk groups include:
उच्च जोखिम वाले समूहों में शामिल हैं:
 - People who work or live in rodent-prone areas, such as farmers, construction workers, campers, and homeowners with rodent infestations.
वे लोग जो कृंतकों (चूहों) से ग्रसित क्षेत्रों में काम या रहते हैं, जैसे किसान, निर्माण श्रमिक, कैंपर और जिनके घर में चूहे पाए जाते हैं।
 - Children under five, pregnant women, and individuals with weakened immune systems should avoid handling pet rodents.
पांच साल से छोटे बच्चे, गर्भवती महिलाएं और कमजोर प्रतिरक्षा प्रणाली वाले लोग को पालतू कृंतकों (चूहों) को छूने से बचना चाहिए।

What are the treatment options?

हंटावायरस का उपचार क्या है?

- Currently, there is no specific antiviral treatment or cure for hantavirus.
फिलहाल, हंटावायरस के लिए कोई विशिष्ट एंटीवायरल उपचार या इलाज उपलब्ध नहीं है।
- Medical care focuses on managing symptoms and supporting the patient through the most dangerous phases of the illness.
चिकित्सा देखभाल मुख्य रूप से लक्षणों को नियंत्रित करने और रोगी को बीमारी के सबसे खतरनाक चरणों से बचाने पर केंद्रित होती है।



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- In cases of HPS, patients are often given oxygen therapy to ease breathing difficulties.
HPS के मामलों में, रोगियों को अक्सर ऑक्सीजन थेरेपी दी जाती है ताकि सांस लेने में कठिनाई कम हो।
- Severe cases may require intensive care, including mechanical ventilation to assist lung function.
गंभीर मामलों में गहन चिकित्सा की आवश्यकता हो सकती है, जिसमें फेफड़ों के कार्य को बनाए रखने के लिए मैकेनिकल वेंटिलेशन शामिल है।
- Early detection and immediate medical attention are crucial for preventing severe respiratory distress.
समय पर पहचान और त्वरित चिकित्सा उपचार गंभीर श्वसन संकट को रोकने के लिए अत्यंत आवश्यक है।
- Preventive methods through rodent control and proper sanitation are crucial to avoiding infection.
संक्रमण से बचने के लिए कृंतक नियंत्रण और उचित स्वच्छता उपाय आवश्यक हैं।

TOPICS COVERED (GS Paper IV and Essay)

1. India's choice between progress and parochialism

भारत की प्रगति और संकीर्णता के बीच की दुविधा



India's choice between progress and parochialism

Essay

India stands at a critical juncture, caught between the anvil of technological disruption and the hammer of cultural nationalism. While the Union government champions economic independence and global technological leadership – exemplified by Prime Minister Narendra Modi's co-chairing of the Artificial Intelligence (AI) Action Summit in Paris in February – its linguistic policies risk undermining these ambitions.

The call by the Rashtriya Swayamsevak Sangh (RSS) chief recently to reject English, western attire, and customs – echoed by Maharashtra's push for Marathi use/promotion to be mandatory in government offices – reveals a deepening ideological contradiction. English, which is one of India's official languages, and also the de-facto medium of higher education, law, health care, and aspirational jobs, as well as the gateway to global opportunities, remains accessible to just 10% of Indians.

This staggering disparity is not incidental but also a product of political choices, creating two divergent educational tracks: privileged private-school students ride the wave of globalisation, while 65% of India's children in government schools remain shackled by linguistic nationalism. As AI reshapes the future of work, India's reluctance to democratise English risks entrenching a linguistic apartheid, with profound consequences for equity and economic mobility.

The 21st century's defining competition revolves not around military might but human capital. While India debates language as identity, Asian peers treat English as economic infrastructure. Israel, often romanticised by cultural nationalists for its ethnoreligious cohesion, offers an instructive counterpoint. Its technological prowess stems not from cultural isolation but a strategic embrace of global knowledge systems. By mandating English fluency alongside science, technology, engineering, and mathematics (STEM) education, Israel ensures that all its citizens access innovation ecosystems. India's leaders must recognise that empowering citizens through English is not cultural betrayal but strategic necessity.

Language policy, equality meets pragmatism
A nation's language policy must balance equality and economic pragmatism. China, South Korea, and Vietnam now prioritise English proficiency as a mass skill, diverging from earlier elite-centric approaches.

China's mandate, in 2001, to teach English from primary school catalysed its shift from an outsource destination for low-value manufacturing units to a dominant driver in the tech-driven economy. The Gaokao, China's national college entrance examination, is the sole gateway to higher education for over 10 million students annually. English, accounting for 150



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points (equal to Chinese and mathematics), is a mandatory component, reflecting its status as a core pillar of human capital strategy. This systemic emphasis ensures that even students from rural provinces gain foundational English skills, aligning with China's Belt and Road Initiative (BRI). As the BRI expanded China's global infrastructure footprint, English became critical for diplomats, engineers and project managers interfacing with 140-plus partner nations. State media now explicitly links English proficiency to "telling China's story well", transforming the language from a colonial relic to a soft power tool.

South Korea's Suneung, the college scholastic ability test, is an eight-hour marathon taken by 5,00,000 students yearly. English constitutes 25% of the examination's "mandatory" section, with listening, reading and writing components modelled on global proficiency benchmarks such as TOEFL. This rigour stems from a national consensus: cultural pride (evident in the K-wave's global dominance) need not conflict with linguistic pragmatism. Firms such as Samsung and Hyundai mandate English for research and development roles, while K-pop giants such as BIBI release English tracks to capture western markets. The result? A workforce equally adept at preserving hanbok traditions and negotiating semiconductor export controls – a duality India's cultural nationalists dismiss as untenable.

Vietnam's National Foreign Language Project (NFLP), launched in 2008 and extended to 2030, targets English proficiency for 70% of high school graduates and 100% of civil servants. Unlike India's ad hoc policies, the NFLP integrates teacher training (50,000 educators upskilled), rural digital classrooms, and sector-specific benchmarks (for example, tourism workers must achieve B1 level).

The project's \$1.4 billion budget underscores its centrality to Vietnam's goal of becoming a middle-tech manufacturing hub by 2045. From Ho Chi Minh City's AI parks to Da Nang's beachfront startups, English operates as the operating system for foreign direct investment-driven growth.

Crucially, these nations treat English as a utilitarian tool – like coding or calculus – divorced from identity politics.

The AI era's linguistic realities

A recent NITI Aayog report highlights English proficiency as a major barrier to employment, noting it as the biggest contributing factor forcing industries in many States to hire outside talent, forcing industries in many States to hire outside talent. The Future of Jobs Report 2025 from the World Economic Forum underscores English's non-negotiable role: 86% of employers cite AI and data analytics as primary growth drivers, fields where English dominates research, patents, and collaboration. Just as 19th-century

industrialisation rewarded nations with coal, progress in the 21st century hinges on technical literacy coupled with linguistic agility. Vietnam's English-proficient semiconductor engineers and South Korea's bilingual AI researchers exemplify this shift. In advanced manufacturing, English enables a navigation of global supply chains, technical manuals, and AI-driven machinery. India's aspiration to become a manufacturing hub falters without this fluency; 82% of remote tech roles demand English, while workers lacking proficiency face 68%-85% reduced access to high-growth sectors.

A persistent myth suggests that China thrived without English. In reality, its pivot in the 1990s to advanced manufacturing necessitated sweeping English adoption. Today, 400 million Chinese learn English, aligning with initiatives such as Huawei's in-house language programmes. India cannot replicate China's 1970s low-cost model; modern manufacturing demands that workers who are fluent in both regional languages and English to operate cyber-physical systems and global interfaces.

In India, constitutional parity and reality

India's constitutional equality between Hindi and English has collapsed into a false dichotomy. The National Education Policy 2020's vague multilingualism allows non-Hindi States to prioritise English and mother tongues (for example, Kerala, Tamil Nadu), yielding higher STEM enrolment and economic mobility. Conversely, regions emphasising Hindi-first policies lag in educational outcomes. With 93% of global technical courses in English, State curricula that marginalise it perpetuate colonial-era divides, reserving fluency for the elite.

By 2050, India will account for 23% of the global workforce. Yet, without English proficiency, this demographic dividend risks becoming a disaster. The World Economic Forum identifies AI, cybersecurity, and green energy as future job engines – all English-dominated. Kerala's model, teaching Malayalam and English from Class one, proves that linguistic pride and pragmatism coexist. Conversely, States treating English as optional violate constitutional equality, restricting youth from national growth.

Asia's rise offers a stark lesson: nations that weaponise language skills stagnate; those that treat English as constitutional infrastructure, not ideological collateral. This is not a contest between English and regional languages but between preparing workers for AI and quantum computing – fields where English is the global standard – or risking obsolescence. Proficiency in English is not just helpful, it is essential. Vietnam's now 22-year language project shows transformation is possible with resolve. For India, the countdown to 2047 begins now.

Linguistic policies risk undermining India's global and technological ambitions

India's choice between progress and parochialism

भारत की प्रगति और संकीर्णता के बीच की दुविधा

India stands at a critical juncture, caught between technological disruption and cultural nationalism.

भारत एक महत्वपूर्ण मोड़ पर खड़ा है, जहाँ उसे प्रौद्योगिकीगत बदलाव और सांस्कृतिक राष्ट्रवाद के बीच संतुलन बनाना है।



- While the Union government promotes economic independence and global technological leadership, its linguistic policies may undermine these ambitions.
जहां केंद्र सरकार आर्थिक स्वतंत्रता और वैश्विक तकनीकी नेतृत्व को बढ़ावा दे रही है, वहीं उसकी भाषा नीतियाँ इन महत्वाकांक्षाओं को कमजोर कर सकती हैं।
- Prime Minister Narendra Modi co-chaired the Artificial Intelligence (AI) Action Summit in Paris in February, highlighting India's commitment to global technology.
प्रधानमंत्री नरेंद्र मोदी ने फरवरी में पेरिस में आर्टिफिशियल इंटेलिजेंस (AI) एक्शन समिट की सह-अध्यक्षता की, जिससे वैश्विक प्रौद्योगिकी में भारत की प्रतिबद्धता प्रदर्शित होती है।
- However, the RSS chief's recent call to reject English, Western attire, and customs exposes a deep ideological contradiction.
हालांकि, RSS प्रमुख द्वारा हाल ही में अंग्रेजी, पश्चिमी पहनावे और रीति-रिवाजों को अस्वीकार करने की अपील गहरे वैचारिक विरोधाभास को उजागर करती है।
- English is one of India's official languages and the de facto medium of higher education, law, healthcare, and global jobs.
अंग्रेजी भारत की आधिकारिक भाषाओं में से एक है और उच्च शिक्षा, कानून, स्वास्थ्य सेवाओं और वैश्विक नौकरियों की प्राथमिक भाषा भी है।
- Yet, only 10% of Indians have access to English, creating a massive educational and economic divide.
फिर भी, केवल 10% भारतीयों को अंग्रेजी का अवसर मिलता है, जिससे शिक्षा और आर्थिक असमानता बढ़ रही है।

The impact of linguistic policies on education and economy

भाषाई नीतियों का शिक्षा और अर्थव्यवस्था पर प्रभाव

- India's dual-track education system benefits private-school students, while 65% of government school students remain limited by linguistic nationalism.
भारत की द्विस्तरीय शिक्षा प्रणाली निजी स्कूलों के छात्रों को लाभ देती है, जबकि 65% सरकारी स्कूलों के छात्र भाषाई राष्ट्रवाद से प्रभावित होते हैं।
- As AI reshapes the job market, India's reluctance to democratize English could lead to linguistic apartheid.
जैसे-जैसे AI रोजगार के क्षेत्र को बदल रहा है, भारत में अंग्रेजी को सभी के लिए सुलभ न बनाना भाषाई भेदभाव को बढ़ा सकता है।



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- The 21st century's competition is about human capital, not just military power.
21वीं सदी की प्रतिस्पर्धा सैन्य शक्ति से अधिक मानव संसाधन पर केंद्रित है।
- Asian nations like Israel treat English as an economic infrastructure, not a cultural threat.
इज़राइल जैसे एशियाई देश अंग्रेजी को एक आर्थिक बुनियादी ढांचे के रूप में देखते हैं, न कि सांस्कृतिक खतरे के रूप में।

Global language policies: Lessons from other nations

वैश्विक भाषा नीतियाँ: अन्य देशों से सीखने योग्य बातें

China's approach

चीन का दृष्टिकोण

- In 2001, China mandated English education from primary school, making it a core subject in national exams.
2001 में, चीन ने प्राथमिक विद्यालय से अंग्रेजी शिक्षा अनिवार्य की, जिससे यह राष्ट्रीय परीक्षाओं का एक प्रमुख विषय बन गया।
- The Gaokao exam (China's national college entrance test) assigns equal weightage to English, Chinese, and Mathematics (150 points each).
Gaokao परीक्षा (चीन की राष्ट्रीय प्रवेश परीक्षा) में अंग्रेजी, चीनी और गणित को समान 150 अंकों का महत्व दिया जाता है।
- China's Belt and Road Initiative (BRI) requires diplomats, engineers, and managers to be fluent in English.
चीन की बेल्ट एंड रोड इनिशिएटिव (BRI) के तहत राजनयिकों, इंजीनियरों और प्रबंधकों को अंग्रेजी में निपुण होना आवश्यक है।

South Korea's model

दक्षिण कोरिया का मॉडल

- Suneung (College Entrance Exam) is an eight-hour test taken by 5,00,000 students annually.
Suneung (कॉलेज प्रवेश परीक्षा) एक आठ घंटे की परीक्षा होती है, जिसमें हर साल 5,00,000 छात्र बैठते हैं।



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- English comprises 25% of the mandatory section, tested through listening, reading, and writing.
अंग्रेजी परीक्षा के अनिवार्य भाग का 25% हिस्सा होती है, जिसमें सुनने, पढ़ने और लिखने के कौशल का परीक्षण किया जाता है।
- Companies like Samsung and Hyundai require English proficiency for R&D roles.
सैमसंग और हंडई जैसी कंपनियों में अनुसंधान और विकास (R&D) कार्यों के लिए अंग्रेजी आवश्यक है।

Vietnam's strategy

वियतनाम की रणनीति

- National Foreign Language Project (NFLP) was launched in 2008, targeting 70% English proficiency among high school graduates by 2030.
राष्ट्रीय विदेशी भाषा परियोजना (NFLP) 2008 में शुरू की गई, जिसका लक्ष्य 2030 तक हाई स्कूल स्नातकों में 70% अंग्रेजी दक्षता हासिल करना है।
- The project trains 50,000 teachers, develops rural digital classrooms, and sets sector-specific English benchmarks.
इस परियोजना के तहत 50,000 शिक्षकों को प्रशिक्षित किया गया, ग्रामीण डिजिटल कक्षाओं को विकसित किया गया और विभिन्न क्षेत्रों के लिए अंग्रेजी दक्षता के मानक तय किए गए।
- \$1.4 billion budget ensures English is a key tool for economic growth and foreign investment.
\$1.4 बिलियन के बजट के तहत अंग्रेजी को आर्थिक विकास और विदेशी निवेश का एक प्रमुख साधन बनाया गया।

The path forward for India

भारत के लिए आगे का रास्ता

- India must balance cultural identity with economic pragmatism, recognizing that English is a tool, not a threat.
भारत को सांस्कृतिक पहचान और आर्थिक यथार्थवाद के बीच संतुलन बनाना चाहिए, और यह समझना चाहिए कि अंग्रेजी एक उपकरण है, न कि कोई खतरा।
- Countries like China, South Korea, and Vietnam treat English as a workforce skill, independent of politics.
चीन, दक्षिण कोरिया और वियतनाम जैसे देश अंग्रेजी को कार्यबल कौशल के रूप में देखते हैं, न कि किसी राजनीतिक मुद्दे के रूप में।



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- **Expanding English education in government schools can reduce inequality and boost economic mobility.**
सरकारी स्कूलों में अंग्रेजी शिक्षा का विस्तार करने से असमानता कम हो सकती है और आर्थिक अवसर बढ़ सकते हैं।
- **India's global aspirations in AI, trade, and innovation require an inclusive language strategy.**
AI, व्यापार और नवाचार में भारत की वैश्विक महत्वाकांक्षाएँ समावेशी भाषा नीति की मांग करती हैं।
- **The choice between progress and parochialism will shape India's position in the 21st-century knowledge economy.**
प्रगति और संकीर्णता के बीच का चुनाव निर्धारित करेगा कि भारत 21वीं सदी की ज्ञान-आधारित अर्थव्यवस्था में कहाँ खड़ा होगा।

The AI era's linguistic realities

AI युग की भाषाई वास्तविकताएँ

- A recent **NITI Aayog report** highlights **English proficiency as a major barrier to employment**, forcing industries in many States to **hire outside talent**.
हाल ही में प्रकाशित नीति आयोग की रिपोर्ट ने अंग्रेजी दक्षता की कमी को रोजगार के लिए एक बड़ी बाधा बताया है, जिससे कई राज्यों में बाहरी प्रतिभाओं को नियुक्त करना पड़ रहा है।
- The **Future of Jobs Report 2025 (World Economic Forum)** states that **86% of employers cite AI and data analytics as primary growth drivers**, where **English dominates research, patents, and collaboration**.
वर्ल्ड इकोनॉमिक फोरम की 'फ्यूचर ऑफ जॉब्स रिपोर्ट 2025' के अनुसार, 86% नियोजकों का मानना है कि AI और डेटा एनालिटिक्स प्रमुख विकास कारक हैं, और इन क्षेत्रों में अंग्रेजी अनुसंधान, पेटेंट और सहयोग की प्रमुख भाषा है।
- Just as **coal powered industrialisation in the 19th century, technical literacy and linguistic agility drive 21st-century progress**.
जैसे 19वीं सदी में कोयले ने औद्योगीकरण को बढ़ावा दिया था, वैसे ही तकनीकी साक्षरता और भाषाई दक्षता 21वीं सदी की प्रगति को गति देती है।
- **Vietnam's English-proficient semiconductor engineers and South Korea's bilingual AI researchers exemplify this shift**.
वियतनाम के अंग्रेजी में दक्ष सेमीकंडक्टर इंजीनियर और द्विभाषी दक्षिण कोरियाई AI शोधकर्ता इस बदलाव का उदाहरण हैं।



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- 82% of remote tech roles demand English proficiency, while workers lacking English skills face 68%–85% reduced access to high-growth sectors.
82% दूरस्थ (रिमोट) तकनीकी नौकरियों में अंग्रेजी आवश्यक है, जबकि अंग्रेजी न आने वाले कर्मचारियों के लिए उच्च-विकास वाले क्षेत्रों में अवसर 68%-85% तक कम हो जाते हैं।

Debunking the China myth

चीन से जुड़ी गलतफहमी

- A persistent myth suggests that China thrived without English, but in reality, China's shift to advanced manufacturing in the 1990s required widespread English adoption.
एक आम धारणा है कि चीन बिना अंग्रेजी के आगे बढ़ा, लेकिन वास्तव में, 1990 के दशक में उन्नत विनिर्माण (मैन्युफैक्चरिंग) की ओर बढ़ने के लिए चीन ने बड़े पैमाने पर अंग्रेजी को अपनाया।
- Today, 400 million Chinese are learning English, supported by initiatives such as Huawei's in-house language programmes.
आज 400 मिलियन (40 करोड़) चीनी लोग अंग्रेजी सीख रहे हैं, जिसमें हुआवेई जैसी कंपनियों के इन-हाउस भाषा कार्यक्रम मदद कर रहे हैं।
- Unlike China's low-cost manufacturing model of the 1970s, modern manufacturing demands fluency in both regional languages and English to operate cyber-physical systems.
चीन के 1970 के दशक के सस्ते विनिर्माण मॉडल से अलग, आधुनिक उत्पादन (मैन्युफैक्चरिंग) के लिए साइबर-फिजिकल सिस्टम्स के संचालन हेतु क्षेत्रीय भाषाओं और अंग्रेजी दोनों में दक्षता आवश्यक है।

In India, constitutional parity vs. reality

भारत में संवैधानिक समानता बनाम वास्तविकता

- India's constitutional equality between Hindi and English has collapsed into a false dichotomy.
भारत में हिंदी और अंग्रेजी की संवैधानिक समानता अब एक झूठे द्वंद्व में बदल गई है।
- The National Education Policy (NEP) 2020 promotes vague multilingualism, allowing non-Hindi States like Kerala and Tamil Nadu to prioritize English and mother tongues.
राष्ट्रीय शिक्षा नीति (NEP) 2020 अस्पष्ट बहुभाषावाद को बढ़ावा देती है, जिससे केरल और तमिलनाडु जैसे गैर-हिंदी राज्यों को अंग्रेजी और अपनी मातृभाषा को प्राथमिकता देने का मौका मिलता है।
- Regions that emphasize Hindi-first policies lag in educational outcomes, while 93% of global technical courses are in English.
वे क्षेत्र जो हिंदी-प्रथम नीति पर जोर देते हैं, वे शैक्षिक प्रदर्शन में पीछे रह जाते हैं, जबकि दुनिया में 93%



तकनीकी पाठ्यक्रम अंग्रेजी में उपलब्ध हैं।

- By 2050, India will account for 23% of the global workforce, but without English proficiency, this demographic dividend could turn into a disaster.
2050 तक भारत वैश्विक कार्यबल का 23% हिस्सा होगा, लेकिन अंग्रेजी दक्षता के बिना, यह जनसंख्या लाभ एक बड़ी समस्या बन सकता है।

Lessons from Asia's linguistic strategies

एशिया की भाषा नीतियों से सीखने योग्य बातें

- Vietnam's National Foreign Language Project (NFLP) aims for 70% English proficiency among high school graduates and 100% among civil servants by 2030.
वियतनाम की राष्ट्रीय विदेशी भाषा परियोजना (NFLP) का लक्ष्य 2030 तक हाई स्कूल स्नातकों में 70% और सरकारी कर्मचारियों में 100% अंग्रेजी दक्षता हासिल करना है।
- Kerala's education model, which teaches Malayalam and English from Class 1, shows that linguistic pride and pragmatism can coexist.
केरल का शिक्षा मॉडल, जहां पहली कक्षा से मलयालम और अंग्रेजी सिखाई जाती है, यह दर्शाता है कि भाषाई गौरव और व्यावहारिकता एक साथ चल सकते हैं।
- States that treat English as optional violate constitutional equality, restricting youth from national and global growth opportunities.
वे राज्य जो अंग्रेजी को वैकल्पिक मानते हैं, वे संवैधानिक समानता का उल्लंघन करते हैं, और युवाओं को राष्ट्रीय और वैश्विक विकास के अवसरों से दूर रखते हैं।

The road ahead: English as India's strategic tool

आगे का रास्ता: अंग्रेजी को भारत की रणनीतिक शक्ति बनाना

- Nations that politicize language stagnate; those that weaponize language skills dominate.
वे देश जो भाषा को राजनीति से जोड़ते हैं, वे पिछड़ जाते हैं; जबकि जो इसे कौशल के रूप में अपनाते हैं, वे आगे बढ़ते हैं।
- India must treat English as constitutional infrastructure, not ideological collateral.
भारत को अंग्रेजी को एक संवैधानिक संरचना के रूप में देखना चाहिए, न कि वैचारिक बोझ के रूप में।
- This is not a contest between English and regional languages, but a choice between preparing for AI and quantum computing or risking obsolescence.
यह अंग्रेजी और क्षेत्रीय भाषाओं के बीच प्रतिस्पर्धा नहीं, बल्कि AI और क्वांटम कंप्यूटिंग के लिए तैयार



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होने और अप्रासंगिक होने के खतरे के बीच का चुनाव है।

- English proficiency is not just helpful; it is essential.
अंग्रेजी में दक्षता केवल लाभदायक नहीं, बल्कि अनिवार्य है।
- Vietnam's 22-year English language project proves that transformation is possible with resolve.
वियतनाम के 22-वर्षीय अंग्रेजी भाषा कार्यक्रम ने दिखाया है कि दृढ़ संकल्प के साथ बदलाव संभव है।
- For India, the countdown to 2047 begins now.
भारत के लिए, 2047 की तैयारी अभी से शुरू होनी चाहिए।

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