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THE HINDU NEWSPAPER

DAILY CURRENT AFFAIRS

10 JUNE 2025

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10_06_2025 DAILY CURRENT AFFAIRS

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

1. The Census and the Remaking of a People

जनगणना और एक समाज के पुनर्निर्माण की प्रक्रिया

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खाद्य सुरक्षा के लिए कृषि में महिलाओं को सशक्त बनाना

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The Census and the remaking of a people

ISS Paper I: Society

A population is a group of inhabitants in a particular place. A people, as in 'We the People,' in the preamble of the Constitution, is a political community. The counting and the labelling of the population under multiple categories, i.e., a census, is not merely a technical exercise. It mediates the transformation of the population to a people in a significant manner. The people – a political community – have a shared view of how they govern themselves and allocate their resources. The 2027 Census will so impact the notion of people that it is going to be a centennial event, like the COVID-19 pandemic that delayed the decadal census which was to happen in 2021.

A census counts the total population, and under various categories and qualities – rural and urban, Scheduled Castes (SC) and Scheduled Tribes (ST), economic activity, literacy and education, housing and household amenities, migration, fertility and mortality. It also enumerates the latest administrative map of the country. A census, technically speaking, only captures the reality that exists. But the very act of capturing it under definitive categories alters and creates realities. There are organic, natural demographic trends which are underway, whether you document them or not. For instance, we know that more people in Chennai or Mumbai speak Hindi today than 20 years ago. In the same time period, we know that Kerala received and sent out a large number of migrants, but we do not know the exact numbers. These patterns of birth, death, migration, languages, and economic activity will have political implications; their recording itself is an influencer of that process. The study of this link, between demography and politics (political demography), is an underdeveloped field the world over.

Issue of parliamentary representation

After half a century, India's parliamentary representation will be redistributed between the States. Article 81 of the Constitution mandates that the next inter-State redistribution representation according to population will be done after "the relevant figures for the first census taken after the year 2026 have been published". The Census of 2021 was delayed due to the pandemic, but it could have been done much earlier than now. In normal course, the first Census after 2026 would have been in 2031, with the new delimitation exercise after that. The delay in the 2021 Census has advanced delimitation by at least five years. This is going to be the first census in which all data will be captured digitally, and its processing can be much faster than previous ones which took up to three years.

The work of past Delimitation Commissions took years, but that too will be much quicker in the next round. All things considered, it is



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The new Census will accelerate the social and political impacts of demographic changes

possible, and even likely, that the general election in 2029 can be conducted on the basis of a new parliamentary map of India.

What happens if the distribution of population becomes the sole criteria for the redistribution of parliamentary seats? Some States have grown faster population-wise and slower economy-wise; for some States, the inverse holds true. People are moving from where there are more of them to where there are fewer of them such as from the north and central regions of the country to the west and southern regions, and also to Delhi NCR which is in the heartland. This movement is linked to demography and the economy. People are moving in search of better opportunities, and, in many cases, to escape distress. Regions of higher economic growth attract people from elsewhere, while their native populations age. If relative population remains the only and sole criteria for an inter-State reallocation of parliamentary representation, political power will move from regions with a 'stronger economy-low birth rate' combination to regions that have a 'weaker economy-high birth rate' combination. The Centre has said that the demand for fair delimitation from States that fear a reduction in their political representation will be discussed at the appropriate time, but there is no clarity as yet on its thoughts on this issue.

Factors of caste, revenue sharing

There are other adjacent factors that are inherent and contingent upon Census 2027, which will be determinants in this remaking of the people. For the first time since Independence, all castes will be counted separately as against the counting of only SCs and STs now. The caste census until 1931, during British rule, triggered multiple claims and resultant politics. It will be difficult to predict the political impact of a new caste census, but it is certain that the clamour for removal of the 50% ceiling on quotas will get louder. The next delimitation will allocate one third of the seats in Parliament and Assemblies for women. The Centre has made it clear that it will push for simultaneous elections to Parliament and the State Assemblies.

The individual citizen is considered to constitute the elementary unit of people, in liberal democracy. But a simple reading of the relevant provisions of the Constitution makes it clear how group identities were accepted in the constitutional scheme of things – before that in the national movement, and later in governance. National unity of the modern Republic of India was designed in three dimensions – unity of religions, castes and regions as highlighted in an article in this daily, "National unity, a three-dimensional view" (Editorial page, October 6, 2023). That contract of unity is now being renegotiated to make place for the changes and the learnings of at least 50 years. Census 2027 is a

milestone in this ongoing process and will unleash unpredictable forces.

There is also a simultaneous development that is also relevant in this context. The Sixteenth Finance Commission (tasked with making recommendations for revenue sharing across States and between the Centre and the State for five years and commencing its work from April 1, 2026), is in deliberations with stakeholders. It is required to make its recommendations available by October 31, 2025. The mechanism devised by the previous Finance Commission for revenue sharing remains a source of grievance for many States. The Sixteenth Finance Commission's report will have the additional import of its timing, coming as it does on the cusp of a dramatic realignment of political power across social groups and regions.

From a population to a people, the transition is achieved by administrative measures and politics. Census categories have been a key determinant in Indian identities. The first Census of 1881, under the colonial administration, had rigid religious and caste categories of its Indian subjects – which have remained key determinants of politics since then. All politics in India has been about various attempts to slice and dice and aggregate and disaggregate these categories. Population management involves the absolute numbers of people, their spatial distribution and their quality through health care and education. None of this is apolitical; education is a particularly notable field.

Integral to political strategies

The Bharatiya Janata Party (BJP) seeks to achieve its goal of national consolidation through a change in thinking of how Indians see themselves as a people. It is not a disinterested actor in this emerging scenario of a demographic transition. A population-based inter-State delimitation will shift political power to its strongholds and weaken its political opponents. Gender and caste are national categories. By introducing these factors, the BJP can shift the delimitation debate beyond the conflicting demands of regions, and create new political constituencies. The Congress and the Left too are theoretically national formations, which require them to balance regional aspirations and national requirements. The Congress is trying to reclaim some space in heartland politics by joining the caste debate, but it remains to be seen how its contest with the BJP will progress on this count. The BJP has a totalising vision of national identity, and a population-based delimitation is a tempting route for it to follow. Alternatively, if it wants to emerge as a truly national party which reassures interests across castes, regions and religions, then this is a good opportunity for it.

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The Census and the Remaking of a People जनगणना और एक समाज के पुनर्निर्माण की प्रक्रिया

The 2027 Census will have deep social and political effects.

2027 की जनगणना सामाजिक और राजनीतिक प्रभावों को गहराई से प्रभावित करेगी।



- **A population** refers to a group of inhabitants in a particular place, while **"a people"** means a **political community**, as mentioned in **"We the People"** in the Constitution's preamble.
जनसंख्या का अर्थ किसी विशेष स्थान पर निवास करने वाले लोगों से है, जबकि **"एक समाज"** का अर्थ है एक राजनीतिक समुदाय, जैसा कि संविधान की प्रस्तावना में **"हम भारत के लोग"** कहा गया है।
- **Census** is not just a technical counting of population under various categories, but it transforms **population into a political community**.
जनगणना केवल विभिन्न वर्गों में जनसंख्या की तकनीकी गणना नहीं है, बल्कि यह **जनसंख्या को एक राजनीतिक समुदाय में परिवर्तित** करती है।
- **The people** share a common vision of how to **govern themselves and distribute resources**.
एक समाज इस बात की साझा दृष्टि रखता है कि वे **स्वयं को कैसे शासित करें और संसाधनों का वितरण कैसे करें**।
- The **2027 Census** will significantly influence the concept of **"people"** and will be a **centennial event**, much like the **COVID-19 pandemic** that delayed the **2021 Census**.
2027 की जनगणना "समाज" की धारणा को गहराई से प्रभावित करेगी और यह **एक शताब्दी में होने वाली महत्वपूर्ण घटना** होगी, जैसे कि **कोविड-19 महामारी** जिसके कारण **2021 की जनगणना स्थगित** हुई थी।

Nature and Influence of Census

जनगणना की प्रकृति और प्रभाव

- A census records the **total population** along with details like **rural-urban status, SC/ST categories, economic activity, literacy, housing, migration, fertility, and mortality**.
जनगणना में कुल जनसंख्या के साथ-साथ **ग्रामीण-शहरी स्थिति, एससी/एसटी वर्ग, आर्थिक गतिविधि, साक्षरता, आवास, प्रवासन, जन्मदर और मृत्युदर** जैसी जानकारी दर्ज की जाती है।
- It also includes the **current administrative map** of the country.
यह देश का **वर्तमान प्रशासनिक नक्शा** भी शामिल करती है।
- Though technically a census only **captures existing realities**, by classifying people, it also **reshapes those realities**.
हालांकि तकनीकी रूप से जनगणना केवल **वर्तमान वास्तविकताओं को दर्ज** करती है, लेकिन लोगों को वर्गीकृत करके यह उन वास्तविकताओं को **पुनः आकार देती है**।
- **Demographic trends** such as **language shifts, migration, birth, and death occur naturally, but their documentation influences politics**.
जनसांख्यिक प्रवृत्तियाँ जैसे **भाषा में बदलाव, प्रवासन, जन्म और मृत्यु** स्वाभाविक रूप से होती हैं, लेकिन उनका **दस्तावेजीकरण राजनीति को प्रभावित करता है**।
- For example, in the last **20 years**, more people in **Mumbai and Chennai** speak **Hindi**, and **Kerala** has seen large **migration in and out**, though exact numbers are missing.



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उदाहरण के लिए, पिछले 20 वर्षों में मुंबई और चेन्नई में अधिक लोग हिंदी बोलते हैं, और केरल में बड़े पैमाने पर प्रवासन हुआ है, हालांकि सटीक आंकड़े उपलब्ध नहीं हैं।

- These trends have **political consequences**, and their **recording** in the census accelerates that impact.
ये प्रवृत्तियाँ राजनीतिक प्रभाव डालती हैं, और जनगणना में उनका दर्ज किया जाना इस प्रभाव को तेज कर देता है।
- The field of **political demography** — the intersection of **demographics and politics** — remains underdeveloped globally.
राजनीतिक जनसांख्यिकी — यानी जनसांख्यिकी और राजनीति का संबंध — एक ऐसा क्षेत्र है जो अभी भी वैश्विक स्तर पर कम विकसित है।

Issue of Parliamentary Representation

संसदीय प्रतिनिधित्व का मुद्दा

- After **50 years**, India will undertake **redistribution of parliamentary seats** among the States.
50 वर्षों बाद, भारत में राज्यों के बीच **संसदीय सीटों का पुनर्वितरण** किया जाएगा।
- **Article 81** of the Constitution says this will be based on **the first census figures published after 2026**.
संविधान का **अनुच्छेद 81** कहता है कि यह **2026 के बाद प्रकाशित पहली जनगणना** के आंकड़ों पर आधारित होगा।
- The **2021 Census** was **delayed due to the pandemic**, but could have been done earlier.
2021 की जनगणना **महामारी के कारण** विलंबित हुई, लेकिन इसे पहले भी किया जा सकता था।
- Normally, **2031** would have been the **first Census after 2026**, followed by **delimitation**.
सामान्यतः, **2026 के बाद पहली जनगणना 2031** में होती और उसके बाद **सीमांकन** किया जाता।
- But the **delay** in the 2021 Census has **advanced delimitation by five years**.
लेकिन **2021 की जनगणना में देरी** के कारण **सीमांकन प्रक्रिया पांच वर्ष पहले** हो जाएगी।
- The **2027 Census** will be the **first digital census**, allowing **faster data processing** than previous ones.
2027 की जनगणना **पहली डिजिटल जनगणना** होगी, जिससे डेटा तेजी से प्रोसेस हो सकेगा।
- **Earlier, it took up to three years to process data; now, this will happen much quicker**.
पहले डेटा प्रोसेसिंग में **तीन साल तक** लगते थे; अब यह प्रक्रिया **काफी तेजी से** होगी।
- Even the work of **Delimitation Commissions**, which used to take **years**, will now be **completed more swiftly**.
सीमांकन आयोगों का कार्य, जो पहले **कई वर्षों** में होता था, अब **जल्दी पूरा** हो सकेगा।
- Hence, it is possible that the **2029 general election** may be held using a **new parliamentary map**.
इसलिए संभव है कि **2029 का आम चुनाव** एक **नए संसदीय नक्शे** के आधार पर कराया जाए।



Consequences of Population-Based Delimitation

जनसंख्या आधारित परिसीमन के परिणाम

- If the **distribution of population** becomes the only criterion for redistribution of **parliamentary seats**, it may create **regional imbalances** in political power.
यदि जनसंख्या का वितरण ही संसदीय सीटों के पुनर्वितरण का एकमात्र आधार बन जाए, तो यह राजनीतिक शक्ति में क्षेत्रीय असंतुलन पैदा कर सकता है।
- Some **States** have experienced **faster population growth** but **slower economic growth**, while others have shown the opposite pattern.
कुछ राज्यों में तेज़ जनसंख्या वृद्धि के साथ धीमी आर्थिक वृद्धि हुई है, जबकि अन्य में इसका उल्टा हुआ है।
- People are moving from **high-population** areas to **low-population** areas such as the **south, west, and Delhi NCR**, mainly due to **economic reasons**.
लोग अधिक जनसंख्या वाले क्षेत्रों से कम जनसंख्या वाले क्षेत्रों जैसे दक्षिण, पश्चिम, और दिल्ली एनसीआर की ओर आर्थिक कारणों से जा रहे हैं।
- This migration is driven by the **search for better opportunities** or to escape **distress**.
यह प्रवास बेहतर अवसरों की तलाश या संकट से बचने की वजह से हो रहा है।
- Regions with **higher economic growth** are attracting more migrants, while their **native populations are ageing**.
अधिक आर्थिक विकास वाले क्षेत्र ज्यादा प्रवासियों को आकर्षित कर रहे हैं, जबकि वहाँ की स्थानीय जनसंख्या वृद्ध हो रही है।
- If only **relative population** is used for redistributing seats, **political power will shift from low-birth-rate strong economies to high-birth-rate weaker economies**.
यदि केवल सापेक्ष जनसंख्या को ही सीटों के पुनर्वितरण का आधार बनाया जाए, तो राजनीतिक शक्ति कम जन्म दर वाली मजबूत अर्थव्यवस्थाओं से अधिक जन्म दर वाली कमजोर अर्थव्यवस्थाओं की ओर स्थानांतरित हो जाएगी।
- The Centre has said that the issue of **fair delimitation** for States fearing reduced representation will be addressed later, but there is **no clarity** yet.
केंद्र ने कहा है कि जिन राज्यों को राजनीतिक प्रतिनिधित्व में कमी का डर है, उनके लिए उचित परिसीमन की मांग पर उचित समय पर चर्चा होगी, लेकिन इस पर अभी कोई स्पष्टता नहीं है।

Caste Census and Revenue Sharing

जातिगत जनगणना और राजस्व साझाकरण

- For the **first time since Independence**, all **castes** will be counted separately in **Census 2027**, unlike earlier when only **SCs and STs** were counted.
स्वतंत्रता के बाद पहली बार, जनगणना 2027 में सभी जातियों की अलग-अलग गिनती की जाएगी, जबकि पहले केवल अनुसूचित जातियों और जनजातियों की गिनती होती थी।



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- The last such **caste census** was in **1931**, during British rule, which led to **multiple political demands** and identity-based politics.
इस तरह की अंतिम जातिगत जनगणना 1931 में ब्रिटिश शासन के दौरान हुई थी, जिससे कई राजनीतिक दावे और पहचान आधारित राजनीति शुरू हुई थी।
- The **new caste census** could lead to **stronger demands for removal of the 50% quota cap**.
नई जातिगत जनगणना से 50% आरक्षण सीमा हटाने की मांग तेज़ हो सकती है।
- The next **delimitation** will reserve **one-third of seats** in Parliament and Assemblies for **women**.
अगले परिसीमन में संसद और विधानसभाओं में एक-तिहाई सीटें महिलाओं के लिए आरक्षित की जाएंगी।
- The **Centre** also plans to push for **simultaneous elections** to **Parliament and State Assemblies**.
केंद्र संसद और राज्य विधानसभाओं के एक साथ चुनाव कराने की योजना भी बना रहा है।

Unity and Constitutional Identity

एकता और संवैधानिक पहचान

- In a **liberal democracy**, the **individual citizen** is the basic unit, but the **Constitution** has accepted **group identities** in its structure.
एक उदार लोकतंत्र में व्यक्ति नागरिक को बुनियादी इकाई माना जाता है, लेकिन संविधान ने अपनी संरचना में सामूहिक पहचानों को स्वीकार किया है।
- The **national unity** of India was historically built on **three pillars** — **religion, caste, and region**.
भारत की राष्ट्रीय एकता ऐतिहासिक रूप से तीन स्तंभों — धर्म, जाति, और क्षेत्र — पर आधारित रही है।
- This **contract of unity** is now being **re-negotiated** to reflect the changes and experiences of the past **50 years**.
यह एकता का अनुबंध अब पिछले 50 वर्षों के परिवर्तनों और अनुभवों को ध्यान में रखते हुए पुनः परिभाषित किया जा रहा है।
- **Census 2027** will be a **milestone** in this process and could **unleash unpredictable political forces**.
जनगणना 2027 इस प्रक्रिया में एक मील का पत्थर होगी और इससे अप्रत्याशित राजनीतिक शक्तियाँ सक्रिय हो सकती हैं।

Sixteenth Finance Commission and Fiscal Concerns

सोलहवां वित्त आयोग और राजकोषीय चिंताएं

- The **Sixteenth Finance Commission** will begin work on **April 1, 2026**, and submit its report by **October 31, 2025**.



सोलहवां वित्त आयोग अपना कार्य 1 अप्रैल 2026 से शुरू करेगा और अपनी रिपोर्ट 31 अक्टूबर 2025 तक प्रस्तुत करेगा।

- Its role is to **recommend revenue sharing** between the **Centre and States** for five years.
इसका कार्य केंद्र और राज्यों के बीच राजस्व साझा करने की सिफारिश करना है।
- Previous methods of **revenue sharing** led to **discontent** in many States.
पिछले राजस्व साझाकरण के तरीकों से कई राज्यों में असंतोष उत्पन्न हुआ।
- The timing of the Commission's report coincides with a **potential political realignment** across **regions and social groups**.
आयोग की रिपोर्ट का समय क्षेत्रीय और सामाजिक समूहों में संभावित राजनीतिक पुनर्संरखण के साथ मेल खाता है।

Identity, Census, and Political Strategy

पहचान, जनगणना और राजनीतिक रणनीति

- The shift from a **population** to a **people** is shaped by **administrative and political processes**.
जनसंख्या से जनता की ओर संक्रमण प्रशासनिक और राजनीतिक प्रक्रियाओं द्वारा तय होता है।
- **Census categories** have played a central role in defining **Indian identities** since **1881**, when the first **colonial census** was conducted.
जनगणना की श्रेणियों ने 1881 से, जब पहली औपनिवेशिक जनगणना हुई थी, से भारतीय पहचान को परिभाषित करने में अहम भूमिका निभाई है।
- **Population management** includes **absolute numbers, spatial distribution, and quality via healthcare and education**.
जनसंख्या प्रबंधन में कुल संख्या, स्थानिक वितरण, और स्वास्थ्य सेवाओं और शिक्षा के माध्यम से गुणवत्ता शामिल होती है।
- These are **not apolitical issues**, especially **education**, which has strong **political implications**.
ये विषय राजनीति से अछूते नहीं हैं, विशेषकर शिक्षा, जिसका राजनीतिक प्रभाव गहरा है।

BJP's Demographic Strategy

भाजपा की जनसांख्यिकीय रणनीति

- The **BJP** is using demographic changes to shape a **new national identity** and consolidate its **political strength**.
भाजपा जनसांख्यिकीय परिवर्तनों का उपयोग एक नई राष्ट्रीय पहचान बनाने और अपनी राजनीतिक शक्ति को मजबूत करने के लिए कर रही है।
- A **population-based delimitation** may benefit the **BJP** by shifting power to its **strongholds**, while weakening its **opposition**.



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जनसंख्या आधारित परिसीमन से भाजपा को अपने गढ़ों में शक्ति बढ़ाने और विपक्ष को कमजोर करने में लाभ हो सकता है।

- The BJP is introducing **gender and caste** issues into the delimitation debate to create **new political constituencies**.

भाजपा परिसीमन बहस में लिंग और जाति के मुद्दों को शामिल कर नई राजनीतिक समीकरण बना रही है।

- Parties like **Congress** and the **Left** must balance **regional** and **national** interests to stay politically relevant.

कांग्रेस और वाम दलों को क्षेत्रीय और राष्ट्रीय हितों के बीच संतुलन बनाकर अपनी राजनीतिक प्रासंगिकता बनाए रखनी होगी।

- The BJP may use this as an opportunity to emerge as a **truly national party**, addressing interests across **castes, regions, and religions**.

भाजपा इस अवसर का उपयोग एक सचमुच की राष्ट्रीय पार्टी के रूप में उभरने के लिए कर सकती है, जो जातियों, क्षेत्रों और धर्मों के हितों को ध्यान में रखे।

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Empowering women in agriculture for food security

GS Paper I: Society

The United Nations General Assembly has declared 2026 as the International Year of the Woman Farmer, garnering the support of over 100 co-sponsors. The resolution celebrates the essential role of women in global agriculture while raising awareness of their challenges, which include property rights and market access.

This article highlights insights from a symposium on women in agriculture organised by the Royal Norwegian Embassy and the United Nations World Food Programme (WFP) in India (with participation and guidance from the Government of India). It distils the discussions over six months, with 200 participants from diverse fields and backgrounds coming together to address the challenges women in agriculture face.

Some of the observations here also stem from a collaborative project called ENACT, or Enhancing Climate Adaptation of Vulnerable Communities through Nature-based Solutions and Gender Transformative Approaches, in Assam, implemented by the WFP in partnership with the Government of Assam, in Nagaon. The project aims to empower smallholder farmers, particularly women, to access climate-related information and make informed decisions to enhance their resilience. The project is financed by the Government of Norway under its strategy to promote self-sufficiency in food production and strengthen women's rights and their role in food production.

Ownership, control and access

Nearly half the global food supply is made possible by the contributions of women, who are responsible for 60% to 80% of food production in developing countries and account for 39% of the agricultural labour in South Asia. These figures highlight the vital role of women in agriculture, who face barriers and inequalities.

In India, the percentage of women who own agricultural land is significantly lower than that of men, despite women constituting a substantial part of the farm workforce. Approximately 80% of economically active women are employed in agriculture. Yet, only 14% of landowners are women. According to the latest National Family



May-Elin Stener

is the Ambassador of Norway to India



Elisabeth Faure

is the Representative and Country Director of the United Nations World Food Programme in India

The International Year of the Woman Farmer, in 2026, must ensure the promotion of resilient agricultural development and gender equality

Health Survey, female land ownership is even lower, at 8.3%.

Women farmers in India report that their lack of land ownership makes it difficult to obtain credit and limits their access to financial institutions. Regular access to information on agricultural planning and advisory is essential for farmers, but women have more limited access to technology, such as mobile phones. These obstacles hinder investments, technology adoption and improvements in livelihoods. While microfinance and self-help groups provide some access, such loans are often insufficient for significant investments.

The Government of India supports small women farmers to enhance skills and promote sustainable agriculture. The Mahila Kisan Sashaktikaran Pariyojana upgrades skills and increases resource access for women, while the Sub-Mission on Agricultural Mechanisation offers 50% to 80% subsidies for machinery. Additionally, 30% of the National Food Security Mission's budget is allocated for women farmers in a number of States and Union Territories.

Empowerment for resilience

Climate change disproportionately affects women farmers by increasing their domestic responsibilities and elevating their exposure to agricultural risks. "Our area has been witnessing rapid weather changes. The variety introduced by the project is designed to resist flood damage, and the crops can survive underwater. We are hoping for a better harvest," says Nirmali Bora Hazarika from Roba village in Nagaon.

By engaging with women farmers, it is possible to develop replicable models of climate adaptation at the village and community levels.

The women in agriculture symposia generated forward-looking ideas. The ENACT project primarily connects women farmers with experts through information technology, providing actionable agricultural and climate advisories weekly via their phones to over 300 farmers in 17 villages of Nagaon district.

Additionally, the Climate Adaptation Information Centres facilitate video conferencing and meetings, informing women farmers about

agriculture and livelihoods. This shows how scalable impact can be achieved by combining technical expertise, diversification through farm-based livelihoods, information and weather advisories, use of technologies and social behaviour change interventions.

The project is leveraging partnerships with State and district administrations, which include the Department of Agriculture, the State Rural Livelihoods Mission, and the Departments of Meteorology and Environment. The technology partners include agricultural universities, institutions for sourcing climate-resilient crop varieties.

Rural ecosystems and dependent livelihoods are vulnerable. Responses to risks should reflect community needs and capabilities. The ENACT-project emphasises the promotion of flood-resistant rice varieties, livelihood diversification, and market linkages to mitigate crop damage from flooding and promote the cultivation of nutritious local varieties. Women's farmer groups engage in a community-based smart seed production system to enhance sustainability.

Steps to take

Policy design and implementation should take into account the unique needs of women farmers. Granular data with a gender lens are needed to develop solutions tailored to women's needs. These could range from rethinking farming tools to financial needs and practices around saving or credit.

There should be a strong focus on agri-value chains that support women farmers and are managed by women. Part of this could be to enhance women's access to financing mechanisms and information while supporting their collective action and networks, such as women's self-help groups.

We have a historic opportunity to mark 2026 as the International Year of the Woman Farmer, to promote resilient agricultural development and gender equality by recognising, supporting, and enhancing the role of women in ensuring food security, fostering economic prosperity, and promoting sustainability.

Empowering Women in Agriculture for Food Security

खाद्य सुरक्षा के लिए कृषि में महिलाओं को सशक्त बनाना

The United Nations General Assembly has declared 2026 as the International Year of the Woman Farmer, with support from over 100 co-sponsors.

संयुक्त राष्ट्र महासभा ने 2026 को अंतरराष्ट्रीय महिला किसान वर्ष घोषित किया है, जिसे 100 से अधिक सह-प्रायोजकों का समर्थन प्राप्त है।

- The resolution celebrates the essential role of women in global agriculture and raises awareness about their challenges, such as property rights and market access.

यह प्रस्ताव वैश्विक कृषि में महिलाओं की महत्वपूर्ण भूमिका का उत्सव मनाता है और संपत्ति अधिकारों तथा बाज़ार तक पहुँच जैसी उनकी चुनौतियों के प्रति जागरूकता बढ़ाता है।



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Insights from Symposium and ENACT Project संगोष्ठी और ENACT परियोजना से मिली जानकारीयाँ

- A symposium on **women in agriculture** was organised by the **Royal Norwegian Embassy** and the **UN World Food Programme (WFP)** in India, with participation from the **Government of India**.
भारत में महिलाओं और कृषि पर एक संगोष्ठी का आयोजन रॉयल नॉर्वेजियन एम्बेसी और संयुक्त राष्ट्र विश्व खाद्य कार्यक्रम (WFP) द्वारा भारत सरकार की भागीदारी से किया गया।
- The discussions took place over **six months**, with **200 participants** from various fields. चर्चा छह महीनों तक चली, जिसमें 200 प्रतिभागियों ने विभिन्न क्षेत्रों से भाग लिया।
- The article also includes insights from the **ENACT project in Nagaon, Assam, implemented by WFP** and the **Government of Assam**.
लेख में नगांव, असम में WFP और असम सरकार द्वारा लागू की गई ENACT परियोजना से मिली जानकारीयाँ भी शामिल हैं।
- The project aims to empower **smallholder farmers, especially women**, by improving access to **climate information** and encouraging **resilience**.
इस परियोजना का उद्देश्य छोटे किसानों, विशेषकर महिलाओं, को जलवायु जानकारी तक पहुँच और लचीलापन बढ़ाने में सक्षम बनाना है।
- The project is funded by the **Government of Norway**, focusing on **food self-sufficiency** and **women's rights** in food production.
यह परियोजना नॉर्वे सरकार द्वारा वित्त पोषित है, जो खाद्य आत्मनिर्भरता और खाद्य उत्पादन में महिलाओं के अधिकारों को बढ़ावा देने पर केंद्रित है।

Ownership, Access, and Barriers

स्वामित्व, पहुँच और बाधाएँ

- Women contribute to **60%–80% of food production** in developing countries and make up **39% of the agricultural labour** in South Asia.
महिलाएँ विकासशील देशों में 60% से 80% खाद्य उत्पादन में योगदान देती हैं और दक्षिण एशिया में कृषि श्रमिकों का 39% हिस्सा हैं।
- Despite this, **only 14% of agricultural landowners in India are women**, and **female land ownership** is just **8.3%** according to the latest **NFHS**.
इसके बावजूद, भारत में केवल 14% कृषि भूमि मालिक महिलाएँ हैं, और राष्ट्रीय परिवार स्वास्थ्य सर्वेक्षण (NFHS) के अनुसार महिला भूमि स्वामित्व मात्र 8.3% है।
- Around **80% of economically active women in India work in agriculture**, but their **lack of land ownership** restricts access to **credit and financial institutions**.
भारत में लगभग 80% आर्थिक रूप से सक्रिय महिलाएँ कृषि में कार्यरत हैं, लेकिन भूमि स्वामित्व की कमी के कारण उन्हें ऋण और वित्तीय संस्थानों तक पहुँच में बाधा आती है।

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- Women also have **limited access to technology**, including **mobile phones**, which affects their ability to receive **agricultural information and advisory**.
महिलाओं को तकनीक, जैसे कि मोबाइल फोन, तक सीमित पहुँच है, जिससे उन्हें कृषि जानकारी और सलाह प्राप्त करने में कठिनाई होती है।
- This **limits investment, technology adoption, and livelihood improvements**.
इससे निवेश, तकनीक अपनाने, और जीवनयापन सुधार की संभावनाएँ सीमित हो जाती हैं।
- While **microfinance** and **self-help groups** provide some support, their **loans** are often **insufficient** for larger investments.
माइक्रोफाइनेंस और स्वयं सहायता समूह कुछ सहायता प्रदान करते हैं, लेकिन उनके ऋण अक्सर बड़े निवेशों के लिए अपर्याप्त होते हैं।

Government Initiatives for Women Farmers

महिला किसानों के लिए सरकारी पहलें

- The **Mahila Kisan Sashaktikaran Pariyojana** aims to **upgrade skills and enhance resource access** for women in agriculture.
महिला किसान सशक्तिकरण परियोजना का उद्देश्य कृषि में महिलाओं की क्षमताओं को बढ़ाना और संसाधनों की पहुँच में सुधार करना है।
- The **Sub-Mission on Agricultural Mechanisation** offers **50% to 80% subsidies** on **machinery** to support small women farmers.
कृषि यंत्रीकरण पर उप-मिशन के तहत मशीनों पर 50% से 80% तक सब्सिडी दी जाती है ताकि छोटे महिला किसानों को सहायता मिल सके।
- **30% of the National Food Security Mission's budget** is allocated for **women farmers in several States and Union Territories**.
राष्ट्रीय खाद्य सुरक्षा मिशन के बजट का 30% कई राज्यों और केंद्र शासित प्रदेशों में महिला किसानों के लिए निर्धारित है।

Empowerment for Resilience

लचीलापन के लिए सशक्तिकरण

- **Climate change** disproportionately affects **women farmers** by increasing their **domestic responsibilities** and exposure to **agricultural risks**.
जलवायु परिवर्तन महिलाओं किसानों को असमान रूप से प्रभावित करता है क्योंकि इससे उनकी घरेलू जिम्मेदारियाँ बढ़ती हैं और कृषि जोखिमों के प्रति संवेदनशीलता बढ़ती है।
- In Roha village of **Nagaon**, farmer **Nirmali Bora Hazarika** shared that the **new crop variety** introduced by the project can survive **underwater** and resist **flood damage**, offering hope for a **better harvest**.
नगांव के रोहा गांव की किसान निर्मली बोरा हजारिका ने बताया कि परियोजना द्वारा लाई गई नई

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फसल किस्म पानी में जीवित रह सकती है और बाढ़ से होने वाले नुकसान का सामना कर सकती है, जिससे बेहतर फसल की उम्मीद है।

- By involving **women farmers**, it is possible to develop **replicable models** of **climate adaptation** at the **village and community** levels.

महिला किसानों को शामिल करके गाँव और समुदाय स्तर पर जलवायु अनुकूलन के दोहराए जा सकने वाले मॉडल विकसित किए जा सकते हैं।

- The **women in agriculture symposia** produced **forward-looking ideas** for climate adaptation.

कृषि में महिलाओं पर आयोजित संगोष्ठी ने भविष्य उन्मुख विचार प्रस्तुत किए।

- The **ENACT project** connects women farmers with **experts through information technology**, delivering **weekly agricultural and climate advisories** via phones to **over 300 farmers in 17 villages of Nagaon**.

ENACT परियोजना महिला किसानों को सूचना प्रौद्योगिकी के माध्यम से विशेषज्ञों से जोड़ती है और नगांव जिले के 17 गांवों में 300 से अधिक किसानों को साप्ताहिक कृषि और जलवायु सलाह फोन पर भेजती है।

- **Climate Adaptation Information Centres** enable **video conferencing and meetings**, providing **critical updates on agriculture and livelihoods** to women farmers.

जलवायु अनुकूलन सूचना केंद्र वीडियो कॉन्फ्रेंसिंग और बैठकें संभव बनाते हैं और महिला किसानों को कृषि और आजीविका पर महत्वपूर्ण जानकारी प्रदान करते हैं।

- This demonstrates that combining **technical expertise**, **livelihood diversification**, **climate advisories**, **technology usage**, and **social behaviour change** can create **scalable impact**.

यह दिखाता है कि तकनीकी विशेषज्ञता, आजीविका विविधीकरण, मौसम और कृषि सलाह, तकनीक का उपयोग, और सामाजिक व्यवहार में परिवर्तन को जोड़ने से व्यापक प्रभाव डाला जा सकता है।

- The project works with **state and district administrations**, including the **Department of Agriculture**, **State Rural Livelihoods Mission**, and **Departments of Meteorology and Environment**.

यह परियोजना राज्य और जिला प्रशासन, जैसे कृषि विभाग, राज्य ग्रामीण आजीविका मिशन, और मौसम और पर्यावरण विभागों के साथ मिलकर कार्य करती है।

- **Technology partners** include **agricultural universities** and institutions developing **climate-resilient crop varieties**.

प्रौद्योगिकी साझेदारों में कृषि विश्वविद्यालय और जलवायु अनुकूल फसल किस्मों को विकसित करने वाले संस्थान शामिल हैं।

Localised and Sustainable Solutions

स्थानीय और टिकाऊ समाधान

- **Rural ecosystems** and **dependent livelihoods** are highly **vulnerable**. Risk responses must reflect **community needs and capacities**.

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ग्रामीण पारिस्थितिकी तंत्र और उन पर आधारित आजीविकाएँ अत्यधिक संवेदनशील होती हैं। जोखिम का समाधान समुदाय की जरूरतों और क्षमताओं के अनुसार होना चाहिए।

- The **ENACT project** promotes **flood-resistant rice varieties, livelihood diversification, and market linkages** to reduce crop damage and support nutritious local varieties.

ENACT परियोजना बाढ़-प्रतिरोधी धान की किस्में, आजीविका विविधीकरण, और बाज़ार से जोड़ाव को बढ़ावा देती है ताकि फसल नुकसान को कम किया जा सके और पोषणयुक्त स्थानीय किस्मों की खेती को प्रोत्साहन मिले।

- Women farmer groups also participate in **community-based smart seed production systems** to ensure sustainability.

महिला किसान समूह समुदाय-आधारित स्मार्ट बीज उत्पादन प्रणाली में भी भाग लेती हैं ताकि स्थायित्व सुनिश्चित किया जा सके।

Steps to Take

आवश्यक कदम

- **Policy design and implementation** must consider the **specific needs of women farmers**.

नीति निर्माण और क्रियान्वयन में महिला किसानों की विशिष्ट आवश्यकताओं को ध्यान में रखना चाहिए।

- **Granular gender-sensitive data** is needed to create solutions **tailored** to women's needs, such as changes in **farming tools, financial services, savings, or credit access**.

स्तरीय और लैंगिक दृष्टिकोण से विश्लेषण योग्य आंकड़ों की आवश्यकता है ताकि कृषि उपकरणों, वित्तीय सेवाओं, बचत, या ऋण पहुंच जैसे क्षेत्रों में महिलाओं की आवश्यकताओं के अनुसार समाधान तैयार किए जा सकें।

- Greater emphasis should be placed on **agri-value chains** that are both **supportive of and managed by women farmers**.

ऐसे कृषि मूल्य श्रृंखलाओं पर अधिक ध्यान देना चाहिए जो महिला किसानों द्वारा समर्थित और संचालित हों।

- This includes improving **women's access to financial mechanisms, agricultural information, and supporting their collective action** through platforms like **self-help groups**.

इसमें वित्तीय साधनों, कृषि जानकारी तक महिलाओं की पहुँच बढ़ाना और स्वयं सहायता समूहों जैसी सामूहिक पहलों को समर्थन देना शामिल है।

Marking 2026 as a Milestone

2026 को एक मील का पत्थर बनाना



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

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

CONTACT: 9971932488



2026, as the **International Year of the Woman Farmer**, is a historic opportunity to promote resilient agriculture, gender equality, and enhance women's role in food security and sustainability.

2026, को अंतरराष्ट्रीय महिला किसान वर्ष के रूप में मान्यता देना लचीली कृषि, लैंगिक समानता, और खाद्य सुरक्षा व स्थायित्व में महिलाओं की भूमिका को बढ़ावा देने का एक ऐतिहासिक अवसर है।

TOPICS COVERED GS Paper II: Polity, Governance, and International Relations)

1. After Series of Accidents, DGCA to Review Char Dham Yatra Helicopter Operations

हादसों की श्रृंखला के बाद, डीजीसीए चार धाम यात्रा के हेलीकॉप्टर संचालन की समीक्षा करेगा

2. Supreme Court Refuses Urgent Hearing of Tamil Nadu's Plea Against Centre on Education Funds

शिक्षा फंड को लेकर तमिलनाडु की याचिका पर सुप्रीम कोर्ट ने तत्काल सुनवाई से इनकार किया

3. PM to Visit Cyprus, Croatia During His Trip to Canada

प्रधानमंत्री की कनाडा यात्रा के दौरान साइप्रस और क्रोएशिया का दौरा

4. Foreign Aid and Financial Woes

विदेशी सहायता और वित्तीय संकट

5. Tighten the Process: On the Election Commission of India, Election Processes

चुनाव प्रक्रिया को सख्त बनाना: भारत के चुनाव आयोग और चुनावी प्रक्रियाओं पर

6. Delimiting by Electors Rather Than Population Offers a Fairer Approach



जनसंख्या के बजाय मतदाताओं के आधार पर परिसीमन अधिक न्यायसंगत तरीका है

After series of accidents, DGCA to review Char Dham yatra helicopter operations

UPSC Paper II: Governance
Jagriti Chandra
NEW DELHI

The Directorate General of Civil Aviation will review helicopter operations to determine if services for the Char Dham yatra in Uttarakhand need to be curtailed after as many as four accidents occurred in the past month, the DGCA said on Monday.

The aviation safety regulator barred Kestrel Aviation Private Limited from providing helicopter services, pending inquiry into a mishap on June 7 in Rudraprayag district when an Agusta Westland 119 chopper made a precautionary landing on a road stretch soon after taking off from the Sirsi helipad. Five passengers and a pilot on-



People gather outside Kedarnath temple ahead of its opening, in Rudraprayag district, Uttarakhand on May 1. PTI

board escaped unhurt.

The DGCA has also ordered "enhanced surveillance" for helicopter operators involved in shuttle services and charter operations in Uttarakhand, the

regulator said in a statement.

The incident on June 7 was the fourth such incident in a month and the DGCA has instituted an enquiry into all incidents.

After Series of Accidents, DGCA to Review Char Dham Yatra Helicopter Operations

हादसों की श्रृंखला के बाद, डीजीसीए चार धाम यात्रा के हेलीकॉप्टर संचालन की समीक्षा करेगा

The Directorate General of Civil Aviation (DGCA) will review helicopter operations to decide if the services for the Char Dham Yatra in Uttarakhand need to be restricted, after four accidents occurred in the past month, the DGCA announced on Monday.

नागरिक उड्डयन महानिदेशालय (DGCA) ने घोषणा की कि वह उत्तराखंड में चार धाम यात्रा के लिए हेलीकॉप्टर

संचालन की समीक्षा करेगा कि क्या इन्हें सीमित किया जाना चाहिए, क्योंकि पिछले एक महीने में चार हादसे हो चुके हैं। यह घोषणा सोमवार को की गई।

- The aviation safety regulator has barred Kestrel Aviation Private Limited from offering helicopter services, pending an inquiry into a June 7 incident in Rudraprayag



district.

हवाई सुरक्षा नियामक ने 7 जून को रुद्रप्रयाग ज़िले में हुए एक हादसे की जांच लंबित रहने तक Kestrel Aviation Private Limited को हेलीकॉप्टर सेवाएं देने से रोक दिया है।

- The incident involved an **Agusta Westland 119 chopper**, which made a **precautionary landing** on a road shortly after taking off from the **Sirsi helipad**.
इस हादसे में एक **Agusta Westland 119 हेलीकॉप्टर** ने **सिरसी हेलीपैड** से उड़ान भरने के तुरंत बाद **सावधानीपूर्ण लैंडिंग** एक सड़क पर की।
- There were **five passengers** and a **pilot** onboard, and all of them **escaped unhurt**.
हेलीकॉप्टर में **पाँच यात्री** और एक **पायलट** सवार थे, और सभी **सुरक्षित बच गए**।
- The DGCA has also ordered “**enhanced surveillance**” of helicopter operators involved in **shuttle and charter operations** in **Uttarakhand**, it said in a statement.
डीजीसीए ने अपने बयान में कहा कि उसने **उत्तराखंड** में **शटल और चार्टर सेवाएं** देने वाले हेलीकॉप्टर ऑपरेटरों पर “**बढ़ी हुई निगरानी**” का आदेश दिया है।
- The **June 7 incident** was the **fourth such event** in a **single month**, and the DGCA has initiated an **inquiry into all incidents**.
7 जून की घटना एक महीने में **चौथा मामला** था, और डीजीसीए ने **सभी घटनाओं की जांच शुरू** कर दी है।

Directorate General of Civil Aviation (DGCA) नागर विमानन महानिदेशालय (DGCA)

- The Directorate General of Civil Aviation (DGCA) is a **statutory body** of the Government of India to regulate **civil aviation** in India.
- नागर विमानन महानिदेशालय (DGCA) भारत सरकार की एक **वैधानिक संस्था** है जो भारत में **नागर विमानन** को नियंत्रित करती है।
- It became a **statutory body** under the **Aircraft (Amendment) Act, 2020**.
- यह **एयरक्राफ्ट (संशोधन) अधिनियम, 2020** के तहत एक **वैधानिक निकाय** बना।
- The DGCA **investigates aviation accidents and incidents**, maintains all regulations related to aviation and is responsible for **issuance of licenses** pertaining to aviation like **PPL's, SPL's and CPL's** in India.



- DGCA विमानन दुर्घटनाओं और घटनाओं की जांच करता है, विमानन से संबंधित सभी नियमों को बनाए रखता है, और भारत में PPL, SPL और CPL जैसे लाइसेंसों के निर्गमन के लिए जिम्मेदार है।
- It is headquartered along Sri Aurobindo Marg, opposite Safdarjung Airport, in New Delhi.
- इसका मुख्यालय नई दिल्ली में श्री अरबिंदो मार्ग पर, सफदरजंग हवाई अड्डे के सामने स्थित है।
- The Government of India is planning to **replace** the organisation with a **Civil Aviation Authority (CAA)**, modelled on the lines of the **American Federal Aviation Administration (FAA)**.
- भारत सरकार इस संगठन को अमेरिकी फेडरल एविएशन एडमिनिस्ट्रेशन (FAA) की तर्ज पर गठित नागरिक विमानन प्राधिकरण (CAA) से प्रतिस्थापित करने की योजना बना रही है।

Vision

दृष्टिकोण

- Endeavour to promote **safe and efficient Air Transportation** through regulation and proactive **safety oversight system**.
- नियमों और सक्रिय सुरक्षा निगरानी प्रणाली के माध्यम से सुरक्षित और कुशल हवाई परिवहन को बढ़ावा देने का प्रयास करना।



Supreme Court refuses urgent hearing of Tamil Nadu's plea against Centre on education funds

GS Paper II: Government Scheme

The Hindu Bureau
NEW DELHI

The Supreme Court on Monday declined Tamil Nadu's oral plea for an urgent listing of its original suit accusing the Centre of stopping its annual share of education funds to the tune of over ₹2,000 crore under the **Samagra Shiksha Scheme**.

A Vacation Bench headed by Justice Prashant Kumar Mishra found no urgency in the case.

Senior Advocate P. Wilson, who mentioned the suit, said the lack of funds would impact the future of nearly 48 lakh students in the State. The suit, drafted by advocates Richardson Wilson and Apoorv Malhotra, said the "glaring and apparent reason" for the non-disbursement of Samagra Shiksha funds was linked to the State's vociferous opposition to the imposition of the National

Education Policy (NEP) 2020, with its three-language formula and the PM Shri Schools Scheme.

The PM SHRI Schools Scheme mandates the implementation of NEP 2020 in its entirety in the State.

The suit, filed through Tamil Nadu State counsel Sabarish Subramanian, said the Samagra Shiksha Scheme was not connected to NEP 2020 or the PM Shri Schools Scheme in any way.

"The Union government, by withholding funds under the Samagra Shiksha Scheme, is in ignorance of the doctrine of cooperative federalism. The halt of education funds amounts to the usurpation of the constitutional power of the State to legislate under Entry 25, List III. The Union government seeks to coerce and force the State to implement NEP 2020 in its entirety, and to deviate from the



The State says the lack of funds will impact the future of nearly 48 lakh students in the State.

education regime followed in the State," the suit said.

The Centre's unilateral refusal to provide education funds amounted to a "blatant diktat" for the implementation of NEP 2020 and the linking of the **Samagra Shiksha Scheme with the PM SHRI Schools Scheme**, it added.

The non-disbursement of over ₹2,000 crore towards its obligatory 60% contribution under the Samagra Shiksha Scheme to Tamil Nadu for 2025-2026

had affected the Samagra Shiksha Scheme and the implementation of the RTE Act, 2009. The lack of funds had affected 43,94,906 students, 2,21,817 teachers and 32,701 staff members in the State, it said. The Board had allocated ₹3,585.99 crore as the total outlay for expenditure under the Samagra Shiksha Scheme.

Judicial declaration

The State had sought a judicial declaration that NEP 2020 and the **PM SHRI Schools' Scheme** were not binding on Tamil Nadu. It had urged the court to declare the linking of the State's entitlement to the Central share of education funds under the Samagra Shiksha Scheme with the implementation of NEP 2020 and the PM SHRI Schools "unconstitutional, illegal, arbitrary and unreasonable". The suit wanted the Centre to pay

up ₹2,291 crore to the State within a specified time fixed by the top court along with 6% interest per annum on the principal sum from May 1, 2025 till the date of realisation of the decree.

The State said Chief Minister M.K. Stalin had written to the Prime Minister objecting to the linking of the Samagra Shiksha Scheme with the full implementation of NEP 2020 and the PM SHRI Schools Scheme, and had sought his intervention for the release of the education funds. Mr. Stalin had said the linking of these initiatives amounted to a pressure tactic to coerce the State to accept Centrally-mandated programmes instead of time-tested State policies, in a blatant violation of cooperative federalism. The Union government had rejected the Chief Minister's concerns, the suit said.

Supreme Court Refuses Urgent Hearing of Tamil Nadu's Plea Against Centre on Education Funds

शिक्षा फंड को लेकर तमिलनाडु की याचिका पर सुप्रीम कोर्ट ने तत्काल सुनवाई से इनकार किया

The Supreme Court on Monday declined Tamil Nadu's oral plea for an urgent hearing of its suit accusing the Centre of halting over ₹2,000 crore in annual education funds under the **Samagra Shiksha Scheme**.

सुप्रीम कोर्ट ने सोमवार को तमिलनाडु की उस मौखिक याचिका पर तत्काल सुनवाई से इनकार कर दिया जिसमें केंद्र पर समग्र शिक्षा योजना के तहत ₹2,000 करोड़ से अधिक की वार्षिक शिक्षा निधि रोकने का आरोप लगाया गया था।

- A Vacation Bench headed by Justice Prashant Kumar Mishra found no urgency in the matter.
न्यायमूर्ति प्रशांत कुमार मिश्रा की अध्यक्षता वाली अवकाश पीठ ने मामले में कोई तात्कालिकता नहीं पाई।



- Senior Advocate P. Wilson argued that the **lack of funds** would affect the future of nearly 48 lakh students in the State.
वरिष्ठ अधिवक्ता पी. विल्सन ने तर्क दिया कि फंड की कमी से राज्य के लगभग 48 लाख छात्रों का भविष्य प्रभावित होगा।
- The suit said the **real reason** behind the fund stoppage was Tamil Nadu's **opposition to the National Education Policy (NEP) 2020**, including its **three-language formula** and the **PM SHRI Schools Scheme**.
याचिका में कहा गया कि फंड न मिलने का मुख्य कारण तमिलनाडु द्वारा राष्ट्रीय शिक्षा नीति (एनईपी) 2020 और उसकी त्रि-भाषा फार्मूला व पीएम श्री स्कूल योजना का विरोध था।
- The **PM SHRI Schools Scheme mandates full implementation of NEP 2020** in the State.
पीएम श्री स्कूल योजना राज्य में एनईपी 2020 के पूर्ण कार्यान्वयन को अनिवार्य बनाती है।
- The State argued that the **Samagra Shiksha Scheme is independent and not linked** to either NEP 2020 or PM SHRI Schools.
राज्य ने तर्क दिया कि समग्र शिक्षा योजना स्वतंत्र है और उसका एनईपी 2020 या पीएम श्री स्कूलों से कोई संबंध नहीं है।
- The suit alleged that the **Centre's withholding of funds violates the doctrine of cooperative federalism** and **undermines the State's constitutional power under Entry 25, List III**.
याचिका में आरोप लगाया गया कि केंद्र द्वारा फंड रोकना सहकारी संघवाद के सिद्धांत का उल्लंघन है और यह अनुच्छेद 25, सूची III के तहत राज्य की संवैधानिक शक्ति को कमजोर करता है।
- It stated that the Centre's action was a form of **coercion** to force the State to implement **NEP 2020 fully**.
इसमें कहा गया कि केंद्र की कार्रवाई राज्य पर दबाव डालने का एक तरीका है जिससे वह एनईपी 2020 को पूरी तरह लागू करे।
- The **non-disbursement** of over **₹2,000 crore** (the **60% Centre share**) for **2025-2026** had disrupted the **Samagra Shiksha Scheme** and **RTE Act implementation**.
2025-2026 के लिए ₹2,000 करोड़ से अधिक की (जो कि केंद्र की 60% हिस्सेदारी है) राशि न मिलने से समग्र शिक्षा योजना और आरटीई अधिनियम का कार्यान्वयन प्रभावित हुआ है।
- This shortfall affected **43,94,906 students**, **2,21,817 teachers**, and **32,701 staff** in the State.
इस धनराशि की कमी से राज्य में 43,94,906 छात्र, 2,21,817 शिक्षक, और 32,701 कर्मचारी प्रभावित हुए।
- The **total approved outlay** under the scheme was **₹3,585.99 crore**.
योजना के तहत स्वीकृत कुल बजट ₹3,585.99 करोड़ था।
- The State sought a **judicial declaration** that **NEP 2020** and **PM SHRI Schools Scheme** were **not binding** on Tamil Nadu.
राज्य ने न्यायिक घोषणा की मांग की कि एनईपी 2020 और पीएम श्री स्कूल योजना तमिलनाडु पर बाध्यकारी नहीं हैं।



- It requested the Court to declare that linking **education funds** to NEP 2020 was **unconstitutional, illegal, arbitrary, and unreasonable**.
राज्य ने अदालत से यह घोषित करने की अपील की कि शिक्षा फंड को एनईपी 2020 से जोड़ना असंवैधानिक, अवैध, मनमाना और अविवेकपूर्ण है।
- The State demanded the Centre to pay **₹2,291 crore** with **6% annual interest** from **May 1, 2025** till the date of payment.
राज्य ने केंद्र से ₹2,291 करोड़ की राशि पर 1 मई 2025 से भुगतान की तारीख तक 6% वार्षिक ब्याज के साथ भुगतान करने की मांग की।
- **Chief Minister M.K. Stalin** had written to the **Prime Minister**, objecting to the **linking of education schemes with NEP 2020**, calling it a **pressure tactic**.
मुख्यमंत्री एम. के. स्टालिन ने प्रधानमंत्री को पत्र लिखकर शिक्षा योजनाओं को एनईपी 2020 से जोड़ने पर आपत्ति जताई और इसे एक दबाव की रणनीति करार दिया।
- The Centre, however, **rejected** the Chief Minister's concerns, according to the suit.
हालांकि, याचिका के अनुसार, केंद्र ने मुख्यमंत्री की चिंताओं को खारिज कर दिया।

Samagra Shiksha Scheme समग्र शिक्षा योजना

- **Launched in 2018**, the **Samagra Shiksha Scheme** is an **integrated initiative** by the Government of India aimed at **unifying and enhancing school education** from **pre-school to class XII**.
2018 में शुरू की गई, समग्र शिक्षा योजना भारत सरकार की एक समेकित पहल है, जिसका उद्देश्य पूर्व-प्राथमिक से कक्षा XII तक के स्कूल शिक्षा को एकीकृत और सशक्त बनाना है।
- It **merged three existing schemes** to **streamline resources and efforts**, ensuring a **cohesive educational experience** for students.
इस योजना ने तीन मौजूदा योजनाओं को समाहित किया ताकि संसाधनों और प्रयासों को सुव्यवस्थित किया जा सके और छात्रों को एक संगठित शैक्षिक अनुभव प्रदान किया जा सके।
- The three merged schemes are:
समाहित की गई तीन योजनाएं हैं:
 - **Sarva Shiksha Abhiyan (SSA)**
सर्व शिक्षा अभियान (SSA)
 - **Rashtriya Madhyamik Shiksha Abhiyan (RMSA)**
राष्ट्रीय माध्यमिक शिक्षा अभियान (RMSA)
 - **Teacher Education (TE)**
शिक्षक शिक्षा (TE)

Vision and Objectives

दृष्टि एवं उद्देश्य

- The primary vision is to provide **quality, equitable, and inclusive education** that caters to **diverse learning needs**.



इस योजना का मुख्य उद्देश्य गुणवत्तापूर्ण, समतामूलक और समावेशी शिक्षा प्रदान करना है, जो विभिन्न शिक्षण आवश्यकताओं को पूरा करती हो।

• **Key objectives of Samagra Shiksha:**

समग्र शिक्षा के प्रमुख उद्देश्य:

- **Implementing the recommendations** of the **National Education Policy (NEP) 2020**.
राष्ट्रीय शिक्षा नीति (NEP) 2020 की सिफारिशों को लागू करना।
- Supporting the **Right of Children to Free and Compulsory Education (RTE) Act, 2009**.
बच्चों के लिए निःशुल्क और अनिवार्य शिक्षा का अधिकार (RTE) अधिनियम, 2009 का समर्थन करना।
- Focusing on **Early Childhood Care and Education (ECCE)**.
प्रारंभिक बचपन देखभाल और शिक्षा (ECCE) पर ध्यान केंद्रित करना।
- Emphasizing **Foundational Literacy and Numeracy (FLN)**.
मौलिक साक्षरता और संख्यात्मकता (FLN) को बढ़ावा देना।
- Promoting a **holistic, integrated, and activity-based curriculum and pedagogy**.
समग्र, एकीकृत और गतिविधि-आधारित पाठ्यक्रम एवं शिक्षाशास्त्र को प्रोत्साहित करना।
- **Enhancing learning outcomes** and **bridging social and gender gaps**.
सीखने के परिणामों में सुधार करना और सामाजिक एवं लैंगिक अंतर को पाटना।
- Ensuring **equity and inclusion** at **all levels of school education**.
स्कूली शिक्षा के सभी स्तरों पर समानता और समावेशन सुनिश्चित करना।
- Strengthening **teacher education institutions** like **SCERTs and DIETs**.
SCERTs और **DIETs** जैसे शिक्षक शिक्षा संस्थानों को सशक्त बनाना।
- Providing a **safe and conducive learning environment**.
सुरक्षित और अनुकूल शिक्षण वातावरण प्रदान करना।
- **Promoting vocationalization** of education.
शिक्षा के व्यावसायीकरण को बढ़ावा देना।

Alignment with Sustainable Development Goals (SDGs)

संयुक्त राष्ट्र सतत विकास लक्ष्यों (SDGs) के साथ संरेखण

Samagra Shiksha is closely aligned with **SDG 4**, particularly targets **4.1** and **4.5**.

समग्र शिक्षा योजना **एसडीजी 4** के साथ घनिष्ठ रूप से जुड़ी हुई है, विशेष रूप से **लक्ष्य 4.1 और 4.5** के साथ।

- **SDG 4.1:** By **2030**, ensure that all boys and girls complete **free, equitable, and quality primary and secondary education** leading to relevant and effective learning outcomes.
एसडीजी 4.1: 2030 तक, सभी लड़कों और लड़कियों को **निःशुल्क, समान और गुणवत्तापूर्ण प्राथमिक और माध्यमिक शिक्षा** प्राप्त हो, जिससे वे प्रभावी और प्रासंगिक शिक्षा के परिणाम प्राप्त कर सकें।
- **SDG 4.5:** By **2030**, eliminate **gender disparities** in education and ensure **equal access** to all levels of education and vocational training for vulnerable groups, including **persons with disabilities, indigenous peoples, and children in vulnerable situations**.
एसडीजी 4.5: 2030 तक, शिक्षा में **लैंगिक असमानताओं** को समाप्त करना और **विकलांग व्यक्तियों,**



आदिवासियों और कमजोर परिस्थितियों वाले बच्चों सहित सभी संवेदनशील समूहों को सभी स्तरों की शिक्षा और व्यावसायिक प्रशिक्षण तक समान पहुंच सुनिश्चित करना।

The scheme's emphasis on **inclusivity, equity, and quality education** reflects these global targets. योजना का समावेशिता, समानता और गुणवत्तापूर्ण शिक्षा पर जोर इन वैश्विक लक्ष्यों को दर्शाता है।

Implementation and Coverage

कार्यान्वयन और कवरेज

- In **August 2021**, the scheme was extended for **five years (2021-22 to 2025-26)** with a total financial outlay of **₹2,94,283.04 crore**, including a **central share of ₹1,85,398.32 crore**.
अगस्त 2021 में, इस योजना को पांच वर्षों (2021-22 से 2025-26) तक बढ़ाया गया, जिसमें कुल ₹2,94,283.04 करोड़ का वित्तीय प्रावधान है, जिसमें ₹1,85,398.32 करोड़ की केंद्रीय हिस्सेदारी शामिल है।
- The scheme covers approximately **1.16 million schools**, benefiting **over 156 million students** and **5.7 million teachers** across government and aided institutions.
यह योजना लगभग **11.6 लाख स्कूलों** को कवर करती है, जिससे **15.6 करोड़ से अधिक छात्र** और **57 लाख शिक्षक** सरकारी और सहायता प्राप्त संस्थानों में लाभान्वित हो रहे हैं।
- The scheme supports the new **pedagogical and curricular structure** proposed by **NEP 2020**, known as the **5+3+3+4 system**.
यह योजना **राष्ट्रीय शिक्षा नीति (NEP) 2020** द्वारा प्रस्तावित **शैक्षणिक और पाठ्यचर्या संरचना** का समर्थन करती है, जिसे **5+3+3+4 प्रणाली** के रूप में जाना जाता है।
 - **Foundational Stage (5 years): 3 years of pre-primary (Anganwadi/pre-school) and grades 1-2**, focusing on **multilevel, play/activity-based learning**.
आधारभूत स्तर (5 वर्ष): 3 वर्ष की प्री-प्राइमरी (आंगनवाड़ी/प्री-स्कूल) और कक्षा 1-2, जिसमें बहुस्तरीय, खेल/गतिविधि-आधारित शिक्षण पर ध्यान दिया जाता है।
 - **Preparatory Stage (3 years): Grades 3-5**, emphasizing **play, discovery, and activity-based interactive classroom learning**.
तैयारी स्तर (3 वर्ष): कक्षा 3-5, जिसमें खेल, खोज और गतिविधि-आधारित संवादात्मक कक्षा शिक्षण पर जोर दिया जाता है।
 - **Middle Stage (3 years): Grades 6-8**, centered on **experiential learning in sciences, mathematics, arts, social sciences, and humanities**.
मध्य स्तर (3 वर्ष): कक्षा 6-8, जिसमें विज्ञान, गणित, कला, सामाजिक विज्ञान और मानविकी में अनुभवात्मक शिक्षण पर ध्यान केंद्रित किया गया है।
 - **Secondary Stage (4 years): Grades 9-12**, promoting **multidisciplinary study, critical thinking, flexibility, and student choice of subjects**.
माध्यमिक स्तर (4 वर्ष): कक्षा 9-12, जिसमें बहु-विषयक अध्ययन, आलोचनात्मक सोच, लचीलापन और छात्रों को विषयों की पसंद प्रदान की जाती है।

This structure aims to cater to the **developmental needs** of children at different stages, ensuring a **seamless and comprehensive educational journey**.

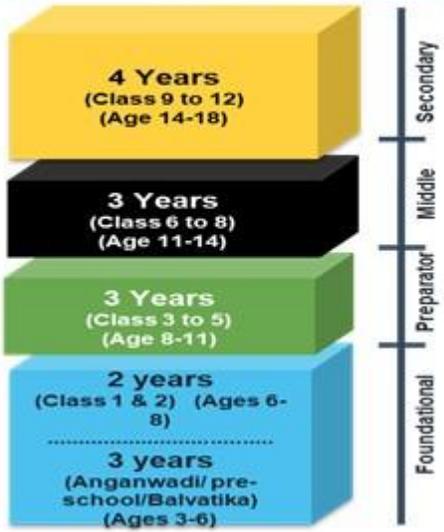
यह संरचना विभिन्न चरणों में बच्चों की **विकासात्मक आवश्यकताओं** को पूरा करने के लिए बनाई गई है, जिससे एक **संतुलित और व्यापक शैक्षिक यात्रा** सुनिश्चित की जा सके।

Recent Developments and Achievements

हाल के विकास और उपलब्धियां



New Academic Structure



As of **early 2024**, significant progress has been made under the **Samagra Shiksha scheme**:

2024 की शुरुआत तक, समग्र शिक्षा योजना के तहत महत्वपूर्ण प्रगति हुई है:

- **Upgradation of 3,656 schools**
3,656 स्कूलों का उन्नयन
- **Construction of 80,105 classrooms**
80,105 कक्षाओं का निर्माण
- **Establishment of over 13,882 smart classrooms** equipped with **Information and Communication Technology (ICT)**
13,882 से अधिक स्मार्ट कक्षाओं की स्थापना, जो सूचना और संचार प्रौद्योगिकी (ICT) से सुसज्जित हैं।
- **Construction of more than 35,457 girls' toilets**, promoting **sanitation and hygiene**
35,457 से अधिक बालिका शौचालयों का निर्माण, जिससे स्वच्छता और स्वास्थ्य को बढ़ावा मिला।

Pradhan Mantri Schools for Rising India (PM SHRI) Scheme
प्रधानमंत्री स्कूल फॉर राइजिंग इंडिया (पीएम श्री) योजना

- The **Pradhan Mantri Schools for Rising India (PM SHRI) Scheme** is a **centrally sponsored initiative** launched by the **Government of India** on **September 7, 2022**.
प्रधानमंत्री स्कूल फॉर राइजिंग इंडिया (पीएम श्री) योजना एक केंद्र प्रायोजित पहल है, जिसे भारत सरकार द्वारा 7 सितंबर 2022 को शुरू किया गया था।
- Its primary objective is to **upgrade and modernize over 14,500 existing schools**, transforming them into **model institutions** that exemplify the implementation of the **National Education Policy (NEP) 2020**.
इसका मुख्य उद्देश्य 14,500 से अधिक मौजूदा स्कूलों को उन्नत और आधुनिक बनाना है, ताकि वे राष्ट्रीय शिक्षा नीति (NEP) 2020 के सफल क्रियान्वयन के आदर्श संस्थान बन सकें।

Key Features of PM SHRI Schools
पीएम श्री स्कूलों की प्रमुख विशेषताएं



- **Green Schools Initiative**

हरित विद्यालय पहल

- PM SHRI schools focus on **environmental sustainability**, incorporating **solar panels, LED lighting, nutrition gardens (using natural farming), waste management systems, plastic-free zones, water conservation, and rainwater harvesting.**

पीएम श्री स्कूल पर्यावरणीय स्थिरता पर केंद्रित हैं और इनमें सौर पैनल, एलईडी लाइटिंग, पोषण उद्यान (प्राकृतिक खेती द्वारा), कचरा प्रबंधन प्रणाली, प्लास्टिक-मुक्त क्षेत्र, जल संरक्षण और वर्षा जल संचयन जैसी सुविधाएँ शामिल हैं।

- These measures promote **eco-friendly practices** and raise **environmental awareness** among students.

ये उपाय पर्यावरण-अनुकूल प्रथाओं को बढ़ावा देते हैं और छात्रों में पर्यावरणीय जागरूकता बढ़ाते हैं।

- **Holistic and Inclusive Education**

समग्र और समावेशी शिक्षा

- The scheme emphasizes **high-quality education** in an **equitable and inclusive environment**, addressing the **diverse backgrounds, multilingual needs, and academic abilities** of students.

यह योजना समान और समावेशी वातावरण में उच्च गुणवत्ता वाली शिक्षा प्रदान करने पर बल देती है, जिससे विभिन्न पृष्ठभूमि, बहुभाषी आवश्यकताओं और अकादमिक क्षमताओं वाले छात्रों को लाभ मिले।

- The goal is to **nurture engaged, productive, and responsible citizens**, aligning with **NEP 2020.**

इसका उद्देश्य जागरूक, उत्पादक और जिम्मेदार नागरिकों का निर्माण करना है, जो NEP 2020 के अनुरूप हो।

- **Modern Infrastructure and Resources**

आधुनिक बुनियादी ढांचा और संसाधन

- PM SHRI schools have **state-of-the-art infrastructure**, including **smart classrooms, digital libraries, and modern laboratories.**

पीएम श्री स्कूलों में स्मार्ट क्लासरूम, डिजिटल पुस्तकालय और आधुनिक प्रयोगशालाओं सहित अत्याधुनिक बुनियादी ढांचा होगा।

- These facilities foster **experiential learning, critical thinking, and creativity.**

ये सुविधाएँ अनुभवात्मक शिक्षा, आलोचनात्मक सोच और रचनात्मकता को बढ़ावा देती हैं।

- **Mentorship Role**

मार्गदर्शक भूमिका

- PM SHRI schools serve as **model institutions**, providing **leadership and mentorship** to other schools in the region.

पीएम श्री स्कूल आदर्श संस्थान के रूप में कार्य करेंगे और क्षेत्र के अन्य स्कूलों को नेतृत्व व मार्गदर्शन प्रदान करेंगे।

- They help uplift the **overall standard of schooling** in their respective areas.

ये अपने क्षेत्रों में शिक्षा के समग्र स्तर को ऊपर उठाने में सहायक होंगे।

Implementation and Funding

कार्यान्वयन और वित्त पोषण



- **Budget Allocation**

- **बजट आवंटन**

- The **total project cost** for the PM SHRI scheme is **₹27,360 crore** over **five years**, with a **central share of ₹18,128 crore**.

- पीएम श्री योजना की कुल परियोजना लागत ₹27,360 करोड़ है, जिसमें केंद्र सरकार का योगदान ₹18,128 करोड़ है, और इसे पाँच वर्षों में पूरा किया जाएगा।

- This significant investment highlights the **government's commitment** to improving **school education** in India.

- यह महत्वपूर्ण निवेश भारत में स्कूल शिक्षा को बेहतर बनाने के लिए सरकार की प्रतिबद्धता को दर्शाता है।

- **Selection Process**

- **चयन प्रक्रिया**

- Schools are selected through a **transparent challenge method**, where they compete for support to become **model institutions**.

- स्कूलों का चयन पारदर्शी चुनौती पद्धति के माध्यम से किया जाता है, जहाँ वे आदर्श संस्थान बनने के लिए प्रतिस्पर्धा करते हैं।

- A maximum of **two schools per block** (one **elementary** and one **secondary/senior secondary**) are chosen, ensuring **wide geographical coverage**.

- प्रत्येक ब्लॉक में अधिकतम दो स्कूलों (एक प्राथमिक और एक माध्यमिक/वरिष्ठ माध्यमिक) का चयन किया जाता है, जिससे व्यापक भौगोलिक कवरेज सुनिश्चित होता है।

- **Current Status**

- **वर्तमान स्थिति**

- As of **October 2024**, the scheme has been **implemented in 10,855 schools** across **various states and union territories**.

- अक्टूबर 2024 तक, इस योजना को विभिन्न राज्यों और केंद्र शासित प्रदेशों के 10,855 स्कूलों में लागू किया जा चुका है।

- This reflects **significant progress** toward achieving the scheme's target.

- यह योजना के लक्ष्यों को प्राप्त करने की दिशा में महत्वपूर्ण प्रगति को दर्शाता है।



PM to visit Cyprus, Croatia during his trip to Canada

Trip to Cyprus is seen as message to Turkiye, which had aided Pakistan during Operation Sindoor; stopover at Croatia important in the context of the India-Middle East-Europe Economic Corridor

GS Paper II: India-West

Kallol Bhattacharjee

NEW DELHI

Reiterating India's traditional foreign policy goals, Prime Minister Narendra Modi will visit Cyprus and Croatia, official sources said here on Monday.

Mr. Modi will visit Cyprus on his way to Canada to participate in the G-7 summit (June 15-17), and on the way back, he will pay a visit to Croatia, which will be the first Prime Minister-level visit from the Indian side since the formation of Croatia in 1991, after the dissolution of former Yugoslavia.

Both visits are being described as important from a political as well as commercial point of view. Sources here hinted that the Cyprus visit will serve as a message to Turkiye that had assisted Pakistan during Operation Sindoor in May. It will also act as a timely revival of top-level contacts as Cyprus is set to take over the Presidency of the Council of the European Union in the first half of 2026. Cyprus had condemned the terror attack in Pahalgam on April 22 and indicated that it would



Narendra Modi's visit will be the first trip by an Indian Prime Minister to Croatia since its formation in 1991. ANI

raise the issue of cross-border terrorism from Pakistan at the EU-level discussions.

Cyprus has been consistent in its support to India on the Kashmir issue and cross-border terrorism from Pakistan. That apart, the Mediterranean country, which has a territorial dispute with Ankara regarding the Turkish Republic of Northern Cyprus, has also supported India in its campaign for a permanent seat at the UN Security Council, the Nuclear Suppliers Group, and the International Atomic Energy Agency. In a reciprocal gesture, India has supported the resolution of the Cyprus territorial dispute as

per UNSC resolutions, international law, and the EU acquis, the collective EU body on laws and regulations.

Officials said Mr. Modi is expected to meet President of Cyprus Nikos Christodoulides.

Croatia trip

Mr. Modi's visit to Croatia is also being described as a tribute to the strong tradition of Indology that exists in the country. The University of Zagreb has been a seat of serious study of Indology, and Croatia is noted for the presence of ISKCON (International Society of Krishna Consciousness). In recent years, these cultural contacts were supple-

mented by growing defence and technological relationships. Croatian Foreign Minister Gordan Grlić-Radman participated in the Raisina Dialogue in March 2023, when he signed a memorandum of understanding on defence cooperation with Mr. Jaishankar.

Sources said the Croatia visit has additional diplomatic importance as it indicates India's continued commitment to partners of the non-alignment as the erstwhile Yugoslavia's founding father, Josip Broz Tito, was a Croatian. Officials here indicated that both Cyprus and Croatia have acquired growing significance in recent years after the India-Middle East-Europe Economic Corridor (IMEC) was launched during the G-20 summit in New Delhi in 2023. Croatia and Cyprus are being viewed here as "potential participants" and investors in the IMEC-related projects. Croatia, with its extensive maritime facilities and ports on the Adriatic Sea, is attractive for India's commitment to the IMEC, sources said, setting the context of Mr. Modi's upcoming visit.

PM to Visit Cyprus, Croatia During His Trip to Canada



प्रधानमंत्री की कनाडा यात्रा के दौरान साइप्रस और क्रोएशिया का दौरा

Prime Minister Narendra Modi will visit **Cyprus and Croatia** during his trip to Canada, as part of reiterating India's traditional foreign policy goals.

प्रधानमंत्री नरेंद्र मोदी, भारत की पारंपरिक विदेश नीति के लक्ष्यों को दोहराते हुए, कनाडा यात्रा के दौरान साइप्रस और क्रोएशिया का दौरा करेंगे।

- Mr. Modi will visit **Cyprus en route to Canada for the G-7 summit (June 15–17)**, and on the return leg, he will visit **Croatia**.
15–17 जून को होने वाले G-7 शिखर सम्मेलन में भाग लेने के लिए कनाडा जाते समय मोदी साइप्रस जाएंगे और वापसी में क्रोएशिया का दौरा करेंगे।
- This will be the **first Prime Minister-level visit** from India to **Croatia** since its **independence in 1991** after the **dissolution of Yugoslavia**.
1991 में युगोस्लाविया के विघटन के बाद से क्रोएशिया की स्वतंत्रता के बाद यह भारत की ओर से पहली प्रधानमंत्री स्तर की यात्रा होगी।
- Both visits are considered important from **political** and **commercial** perspectives. दोनों यात्राएं राजनीतिक और व्यावसायिक दृष्टिकोण से महत्वपूर्ण मानी जा रही हैं।

Significance of Cyprus Visit

साइप्रस दौरे का महत्व

- The visit to **Cyprus** is seen as a **message to Turkiye**, which supported Pakistan during **Operation Sindoor** in **May**.
मई में ऑपरेशन सिंदूर के दौरान तुर्किये द्वारा पाकिस्तान को समर्थन देने के कारण, साइप्रस दौरे को तुर्किये को संदेश के रूप में देखा जा रहा है।
- Cyprus is set to assume the **Presidency of the Council of the European Union** in the **first half of 2026**, making this visit a timely revival of top-level ties.
2026 की पहली छमाही में साइप्रस यूरोपीय संघ परिषद की अध्यक्षता ग्रहण करेगा, जिससे यह यात्रा उच्च स्तरीय संबंधों की समयानुकूल पुनर्स्थापना बन जाती है।
- Cyprus **condemned the terror attack in Pahalgam** on **April 22** and said it would raise the issue of **cross-border terrorism from Pakistan** at the **EU level**.
साइप्रस ने 22 अप्रैल को पहलगाम में हुए आतंकी हमले की निंदा की थी और कहा था कि वह पाकिस्तान से हो रहे सीमा पार आतंकवाद के मुद्दे को ईयू स्तर पर उठाएगा।
- **Cyprus has consistently supported India's stand on Kashmir and cross-border terrorism**.
साइप्रस लगातार कश्मीर मुद्दे और सीमा पार आतंकवाद पर भारत के रुख का समर्थन करता रहा है।
- Cyprus also supports India's campaign for a **permanent seat at the UN Security Council**, and **membership in the Nuclear Suppliers Group** and **IAEA**.



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साइप्रस, भारत के संयुक्त राष्ट्र सुरक्षा परिषद में स्थायी सीट, परमाणु आपूर्तिकर्ता समूह, और IAEA की सदस्यता की अभियान का भी समर्थन करता है।

- India, in return, supports the **resolution of the Cypriot territorial dispute as per UNSC resolutions, international law, and EU regulations.**

भारत ने बदले में साइप्रस क्षेत्रीय विवाद के समाधान का समर्थन यूएनएससी प्रस्तावों, अंतरराष्ट्रीय कानून और ईयू नियमों के अनुसार किया है।

- Mr. Modi is expected to meet the **President of Cyprus, Nikos Christodoulides.** मोदी की साइप्रस के राष्ट्रपति निकोस क्रिस्टोडुलाइड्स से भेंट होने की संभावना है।

Significance of Croatia Visit

क्रोएशिया दौरे का महत्व

- The Croatia visit is seen as a **tribute to Indology**, which has a strong tradition at the **University of Zagreb.**

क्रोएशिया की यात्रा को इंडोलॉजी के प्रति श्रद्धांजलि के रूप में देखा जा रहा है, जिसकी ज़ाग्रेब विश्वविद्यालय में मजबूत परंपरा रही है।

- Croatia has a significant presence of **ISKCON (International Society of Krishna Consciousness).**

क्रोएशिया में ISKCON (अंतरराष्ट्रीय कृष्णभावनामृत संघ) की महत्वपूर्ण उपस्थिति है।

- Recent years have seen growing **defence** and **technological cooperation** between India and Croatia.

हाल के वर्षों में भारत और क्रोएशिया के बीच रक्षा और प्रौद्योगिकी सहयोग में वृद्धि देखी गई है।

- In **March 2023**, Croatian Foreign Minister **Gordan Grlić-Radman** signed a **defence cooperation MoU** with **S. Jaishankar** at the **Raisina Dialogue.**

मार्च 2023 में रायसीना डायलॉग के दौरान क्रोएशियाई विदेश मंत्री गॉर्डन ग्रलिच-राडमैन ने एस.

जयशंकर के साथ रक्षा सहयोग एमओयू पर हस्ताक्षर किए।

- The visit also reflects India's commitment to **non-aligned partners**, as **Yugoslavia's founder Tito** was Croatian.

यह यात्रा गुटनिरपेक्ष देशों के प्रति भारत की प्रतिबद्धता को दर्शाती है, क्योंकि युगोस्लाविया के संस्थापक टिटो क्रोएशिया से थे।

IMEC Connection

आईएमईसी संबंध

- Both **Cyprus** and **Croatia** are gaining importance after the launch of the **India-Middle East-Europe Economic Corridor (IMEC)** during the **G-20 summit in 2023.**

2023 के G-20 शिखर सम्मेलन में भारत-मध्य पूर्व-यूरोप आर्थिक गलियारे (IMEC) की शुरुआत के बाद, साइप्रस और क्रोएशिया दोनों का महत्व बढ़ा है।

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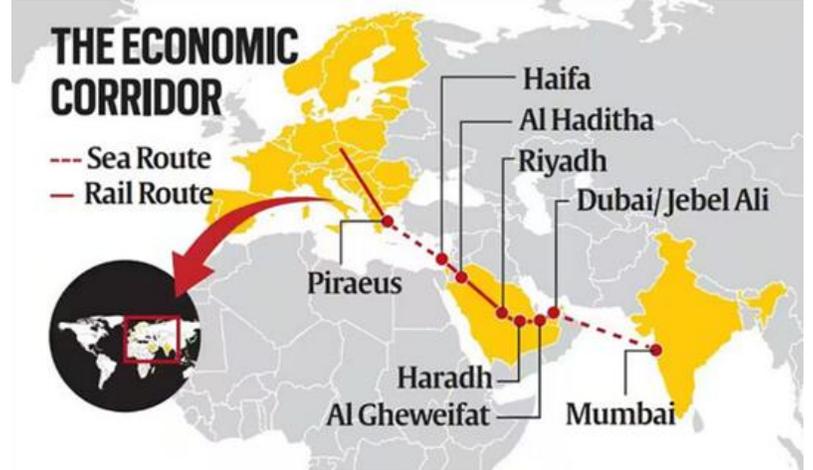


- Cyprus and Croatia are viewed as **potential participants** and **investors** in **IMEC-related projects**.

साइप्रस और क्रोएशिया को IMEC परियोजनाओं में संभावित भागीदारों और निवेशकों के रूप में देखा जा रहा है।

- Croatia's **ports** and **maritime infrastructure** on the **Adriatic Sea** make it an attractive **logistics partner** for India.

एड्रियाटिक सागर पर क्रोएशिया के बंदरगाह और समुद्री ढांचा, भारत के लिए इसे एक आकर्षक लॉजिस्टिक्स साझेदार बनाते हैं।



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GS Paper II: Elections

Tighten the process

The ECI must address legitimate concerns about voter rolls, transparency

The Leader of the Opposition in the Lok Sabha, Rahul Gandhi, has raised troubling questions about the conduct of elections based on what transpired in the 2024 Assembly elections in Maharashtra. There are specific issues: the abnormal increase in voters listed in electoral rolls between the general election and Assembly elections, higher turnout numbers after 5 p.m. on voting day, and the Centre amending the Conduct of Election Rules, 1961 to restrict access to CCTV footage of the polling process. Mr. Gandhi has also questioned the process of appointing Election Commissioners, with the Union government refusing to implement a Supreme Court judgment in 2023 that recommended having the Chief Justice of India as a part of the selection panel. While political parties, including the BJP and the Congress, have raised complaints about Electronic Voting Machines in the past, many did not stand scrutiny considering the administrative and technological safeguards. The Congress has now focused on the electoral process, raising more fundamental issues that need to be unpacked separately.

A preliminary analysis by *The Hindu* of registered voters in States where the general election and Assembly elections were proximate showed that there were precedents of sharp increases in the electorate before Assembly elections. While the number of new voters added before the Assembly elections was high – more than 39 lakh voters in just six months following the general election – similar increases were observed in 2014 as well. The increase of nearly four million voters is a large number and the ECI should proactively release machine-readable data on the rolls for verification. Regarding the allegation that turnout increases were abnormal after 5 p.m., the argument does not hold water. This is based on provisional turnout figures, and Election Commission of India (ECI) data show that there was no significant increase in voting after 5 p.m. in Maharashtra. Provisional turnout figures shared via an app by the ECI are not entirely accurate as these are dependent on the manual entry of numbers during elections and may have discrepancies when compared to the accurate machine count. As final figures via Form 17C data from each booth are released only after a lag, it would be incorrect to rely on provisional turnout figures. However, there is another contention that merits the ECI's response: retaining CCTV footage and providing parties and their nominees access to it to scrutinise complaints. The process of updating electoral rolls must be more transparent and involve political parties for scrutiny and verification. It is also incumbent upon parties to show alacrity during this process than cry foul after the results are out. Ultimately, the onus lies on the ECI to enhance transparency in the electoral process and, specifically, in providing electoral rolls and retaining CCTV footage for scrutiny.

Tighten the Process: On the Election Commission of India, Election Processes

चुनाव प्रक्रिया को सख्त बनाना: भारत के चुनाव आयोग और चुनावी प्रक्रियाओं पर

The Election Commission of India (ECI) must address legitimate concerns regarding voter rolls and transparency in the electoral process.

भारत के चुनाव आयोग (ECI) को मतदाता सूची और पारदर्शिता से संबंधित वाजिब चिंताओं को संबोधित करना चाहिए।

• The Leader of Opposition, Rahul Gandhi, raised concerns over the electoral process during the 2024 Maharashtra Assembly elections.

विपक्ष के नेता राहुल गांधी ने 2024 महाराष्ट्र विधानसभा चुनाव के दौरान चुनावी प्रक्रिया को लेकर चिंता जताई।

• He pointed to issues such as an abnormal rise in voters between the general and Assembly elections, and increased voter turnout after 5 p.m. on polling day.

उन्होंने सामान्य और विधानसभा चुनावों के बीच मतदाताओं में असामान्य वृद्धि, और मतदान दिवस पर शाम 5 बजे के बाद बढ़ी हुई मतदान दर जैसे मुद्दों की ओर इशारा किया।

• He criticised the Centre's amendment to the Conduct of Election Rules, 1961, which restricted access to CCTV footage of polling.

उन्होंने 1961 के चुनाव आचरण नियमों में केंद्र द्वारा किए गए संशोधन की आलोचना की, जिससे मतदान की सीसीटीवी फुटेज तक पहुंच सीमित हो गई।

• Rahul Gandhi also questioned the process of appointing Election Commissioners, noting the Centre's refusal to implement the 2023 Supreme Court judgment suggesting inclusion of the Chief Justice of India in the selection panel.

राहुल गांधी ने चुनाव आयुक्तों की नियुक्ति प्रक्रिया पर भी सवाल उठाए, जिसमें केंद्र ने 2023 के सुप्रीम कोर्ट के फैसले को लागू करने से इनकार किया था, जिसमें भारत के मुख्य न्यायाधीश को चयन समिति में शामिल करने की सिफारिश की गई थी।



EVM-related complaints and safeguards

ईवीएम से जुड़ी शिकायतें और सुरक्षा उपाय

- Both the **BJP and Congress** have previously complained about **Electronic Voting Machines (EVMs)**, but many concerns failed under **administrative and technological scrutiny**.
भाजपा और कांग्रेस दोनों ने पहले इलेक्ट्रॉनिक वोटिंग मशीनों (EVMs) को लेकर शिकायतें की थीं, लेकिन कई चिंताएं प्रशासनिक और तकनीकी जांच में टिक नहीं पाईं।
- Now, the **Congress** has shifted focus to the **broader electoral process**, raising **fundamental issues**.
अब, कांग्रेस ने ध्यान समग्र चुनावी प्रक्रिया पर केंद्रित किया है और मौलिक मुद्दे उठाए हैं।

Sharp rise in voters: Maharashtra case

महाराष्ट्र में मतदाताओं की तेज़ वृद्धि

- A preliminary analysis showed that in States like **Maharashtra**, where **general and Assembly elections** occurred closely, there were **sharp increases in the voter list**.
एक प्रारंभिक विश्लेषण में दिखाया गया कि महाराष्ट्र जैसे राज्यों में, जहां सामान्य और विधानसभा चुनाव पास-पास हुए, वहां मतदाता सूची में तेज़ वृद्धि देखी गई।
- Over 39 lakh voters were added within just six months after the general election, similar to trends seen in 2014.**
सामान्य चुनाव के छह महीने के भीतर 39 लाख से अधिक मतदाता जोड़े गए, जैसा कि 2014 में भी देखा गया था।
- This increase of **nearly four million voters** is significant, and the ECI should publish **machine-readable voter roll data** for verification.
लगभग 40 लाख मतदाताओं की यह वृद्धि महत्वपूर्ण है, और ECI को मशीन-रीडेबल मतदाता सूची डेटा सार्वजनिक करना चाहिए ताकि सत्यापन हो सके।

Post-5 p.m. turnout claims

शाम 5 बजे के बाद मतदान के दावों पर स्थिति

- The claim about **abnormal turnout increases after 5 p.m.** does not hold; ECI data shows **no significant surge** after that time in Maharashtra.
शाम 5 बजे के बाद असामान्य मतदान वृद्धि के दावे को सही नहीं माना जा सकता; ECI के आंकड़ों के अनुसार महाराष्ट्र में उस समय के बाद कोई उल्लेखनीय वृद्धि नहीं हुई।
- Provisional turnout figures** are often unreliable as they are based on **manual entries**, unlike the final counts from **Form 17C**.
अस्थायी मतदान आंकड़े अक्सर मैनुअल प्रविष्टियों पर आधारित होते हैं, जबकि अंतिम आंकड़े फॉर्म 17सी से आते हैं।



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- Hence, relying solely on **provisional turnout data** can be misleading.
इसलिए केवल अस्थायी मतदान आंकड़ों पर भरोसा करना भ्रामक हो सकता है।

CCTV footage access and roll updates

सीसीटीवी फुटेज की पहुंच और मतदाता सूची का अद्यतन

- A valid concern remains regarding the **retention and access to CCTV footage**, which must be available for scrutiny by parties.
एक वैध चिंता बनी हुई है कि सीसीटीवी फुटेज को संरक्षित करना और उस तक पहुंच देना चाहिए ताकि पार्टियां उनकी जांच कर सकें।
- The **process of updating voter rolls** must be more **transparent** and involve **political parties**.
मतदाता सूची के अद्यतन की प्रक्रिया को अधिक पारदर्शी बनाया जाना चाहिए और इसमें राजनीतिक दलों की भागीदारी होनी चाहिए।
- Political parties must also be **vigilant during roll updates**, not just after results.
राजनीतिक दलों को सिर्फ परिणाम के बाद नहीं, बल्कि अद्यतन प्रक्रिया के दौरान सतर्क रहना चाहिए।

ECI's Responsibility for Transparency

पारदर्शिता के लिए ECI की जिम्मेदारी

- The **Election Commission** bears the **primary responsibility** to enhance **transparency** in elections.
चुनाव आयोग की यह प्रमुख जिम्मेदारी है कि वह चुनावों में पारदर्शिता को बढ़ाए।
- It must ensure **timely access** to voter rolls and **CCTV footage** for fair scrutiny.
यह सुनिश्चित किया जाना चाहिए कि मतदाता सूची और सीसीटीवी फुटेज तक समय पर पहुंच हो ताकि उचित जांच हो सके।



Delimiting by electors rather than population offers a fairer approach

The principle of 'one person, one vote, one value' is more closely aligned with the **number of electors than population**

ISS Paper II: Parliament

DATA POINT

Anish Gupta

Several recent articles in the mainstream media suggest that a delimitation exercise – if carried out with population as the primary criterion for allocating parliamentary constituencies (PCs) – would disproportionately disadvantage the southern States. Proponents of this view argue that the southern States, having adhered more rigorously to family planning norms than their northern counterparts, would either receive comparatively fewer PC seats or could even be left with less seats than what they have currently.

But the broader question that has not been adequately discussed is: what is the most rational criterion for allocation of PCs: population or the number of electors?

Electors in a constituency are not always a subset of the population. Many electors may live outside their registered PCs, or may have failed to register. Census records are sensitive to migration, as they are based merely on a stay of six months or more (or even an intention to stay), without even requiring any proof of residence or registration in the voter list. Migrants also generally avoid/delay transferring their voter registration for various reasons. Furthermore, variations in the age structure – such as a higher proportion of under-18s – may also lead to large differences in elector numbers between PCs with similar populations. Importantly, the principle of 'one person, one vote, one value' aligns more closely with electors than the population. Using elector data avoids the wait for a Census and offers a more accurate measure of representation.

Electoral disparity

The value of a vote can be considered inversely proportional to the number of electors in a PC. Data shows that vote value has varied

significantly across regions and over time. Union Territories (UTs), hilly States, and north-eastern States have consistently had a disproportionately high vote value from 1951 to 2024, due to geographical considerations and the minimum representation requirement from each State.

When comparing the southern States with other States, we find that they started with a higher vote value in 1951. However, this trend reversed, and they recorded a lower vote value in 1961, 1971, 1980, 1991, and 1999. The trend reversed once again, with the southern States registering a higher vote value in 2009, 2019, and 2024. It shows a mixed pattern, with the percentage difference in the average number of electors between the southern States and other States ranging from -10.5% to +5%.

Importantly, the southern States began with a higher vote value per parliamentary constituency when the first Parliament was formed in 1951. This initial advantage may have potential long-term implications for government policies and initiatives, development outcomes, and more.

Moreover, among the five largest and five smallest PCs (excluding hilly/UTs/north-east) in terms of electors, four in each group are from the southern States. The value of a vote in Idukki is 4.5 times higher than in Malkajgiri and 2.6 times higher than in Bangalore North. This indicates that rationalisation of PCs is more needed in the southern States.

Rajya Sabha representation

According to the elector data for 2024, the southern States account for just 22.45% of India's electors, yet they hold 23.8% of Lok Sabha seats. Their representation in the Rajya Sabha is even more skewed, at 24.4%, exceeding both their share of electors and their Lok Sabha seat share. The pattern is reversed for the other States. Although they comprise 71.2% of India's electors, they hold only 67.4%

of Lok Sabha seats and just 64.4% of Rajya Sabha seats. In particular, Tamil Nadu has 39 Lok Sabha seats which is lower than Bihar's 40 or West Bengal's 42; but it has 18 Rajya Sabha seats, which is more than the 16 seats allotted to both Bihar and West Bengal.

The fairer approach is to allocate seats based on electors. In the table, column 4 shows the proposed PC seats if the total number of seats is raised to 800. To avoid penalising smaller States and UTs, their current seat count is preserved, which results in a total of 810. The table shows that among the large States, Rajasthan (76%), Karnataka (60.7%), and Telangana (58.8%) would see the highest percentage gains in seats.

The current narratives – that PCs are allocated solely on the basis of population, and that the potential reduction in seats in southern States is primarily due to their strict adherence to family planning policies – are not entirely accurate. First, constituency allocation has never been based purely on population. Other considerations, i.e., geographical challenges and minimum representation, have always played a role. Second, linking political representation to population control sets a dangerous precedent. By that logic, similar claims could be made for representation based on religion or caste. For instance, Jains, among all religious groups, and upper castes, among all social groups, have the highest adherence to population control, while Muslims and Scheduled Tribes have comparatively higher fertility rates. Third, when the criterion of using population for the formation of PCs was originally adopted, the consequences of the population enumeration method and the impact of large-scale migration were not anticipated. Therefore, the principle of 'one person, one vote, one value' in a true sense is more closely aligned with the number of electors rather than the population across PCs.

An alternative choice

The data is based on the author's calculations using the 2024 electoral list

Table: The proposed number of Parliamentary Constituencies (PCs) based on the number of electors

States/UTs (1)	Current seats (2)	Electors (3)	Proposed seats (4)	Adjusted seats** (5)	% increase (6)
Andhra	25	4,14,01,887	33.9	34	36
Karnataka	28	5,47,72,332	44.8	45	60.7
Kerala	20	2,78,07,008	22.7	23	15
Tamil Nadu	39	6,24,04,947	51	51	30.8
Telangana	17	3,32,32,318	27.2	27	58.8
Bihar	40	7,72,59,579	63.2	63	57.5
Chhattisgarh	11	2,06,78,667	16.9	17	54.5
Gujarat	26	4,80,09,945	39.3	39	50
Haryana	10	2,01,87,911	16.5	17	70
Jharkhand	14	2,58,77,892	21.2	21	50
Madhya Pradesh	29	5,66,68,852	46.4	46	58.6
Maharashtra	48	9,306,1,760	76.1	76	58.3
Delhi	7	1,52,14,638	12.4	13	85.7
Odisha	21	3,37,16,965	27.6	28	33.3
Punjab	13	2,15,67,196	17.6	18	38.5
Rajasthan	25	5,35,08,010	43.8	44	76
Uttar Pradesh	80	15,44,03,112	126.3	126	57.5
West Bengal	42	7,61,24,780	62.3	62	47.6
A&N Islands	1	3,15,745	0.3	1	0
Arunachal	2	8,98,442	0.7	2	0
Assam	14	2,45,72,114	20.1	20	42.9
Chandigarh	1	6,60,552	0.5	1	0
DNH & DD ^A	2	4,17,236	0.3	2	0
Goa	2	11,79,644	1	2	0
Himachal	4	57,11,969	4.7	5	25
Jammu & Kashmir	5	88,02,348	7.2	7	40
Ladakh	1	1,90,576	0.2	1	0
Lakshadweep	1	57,953	0	1	0
Manipur	2	20,51,357	1.7	2	0
Meghalaya	2	2230451	1.8	2	0
Mizoram	1	8,61,327	0.7	1	0
Nagaland	1	13,25,383	1.1	1	0
Puducherry	1	10,24,024	0.8	1	0
Sikkim	1	4,66,643	0.4	1	0
Tripura	2	28,70,896	2.3	3	50
Uttarakhand	5	84,31,101	6.9	7	40
All India	543	97,79,65,560	800	810	49.2

**Rounded off and without any decrease in the existing number of seats for the smaller States/UTs | ^ADadra and Nagar Haveli and Daman and Diu

Anish Gupta teaches Economics at Delhi School of Economics, Juliana from IEDS, Noida, helped in data entry

Delimiting by Electors Rather Than Population Offers a Fairer Approach

जनसंख्या के बजाय मतदाताओं के आधार पर परिसीमन अधिक न्यायसंगत तरीका है

The core principle: One Person, One Vote, One Value

मूल सिद्धांत: एक व्यक्ति, एक वोट, एक मूल्य



- The principle of 'one person, one vote, one value' is more accurately reflected when using the number of electors instead of population.
'एक व्यक्ति, एक वोट, एक मूल्य' का सिद्धांत जनसंख्या के बजाय मतदाताओं की संख्या पर आधारित होने पर अधिक सटीक रूप से लागू होता है।
- Using **elector data** avoids the delay of census and provides a more realistic basis for **representation**.
मतदाता आंकड़ों का उपयोग जनगणना की प्रतीक्षा से बचाता है और प्रतिनिधित्व के लिए एक अधिक वास्तविक आधार प्रदान करता है।
- **Electors are not always a subset** of the population; **many electors live outside their registered constituencies or are not registered at all**.
मतदाता हमेशा जनसंख्या का हिस्सा नहीं होते; कई मतदाता अपने पंजीकृत निर्वाचन क्षेत्रों से बाहर रहते हैं या पंजीकृत ही नहीं होते।
- **Census records** are affected by **migration** and allow registration based on mere intent to stay without proof.
जनगणना रिकॉर्ड पर प्रवासन का प्रभाव पड़ता है और ये केवल रहने के इरादे के आधार पर पंजीकरण की अनुमति देते हैं, प्रमाण की आवश्यकता नहीं होती।
- Differences in **age structure**, such as a higher number of **under-18s**, lead to variation in **elector numbers** even among populations of similar size.
आयु संरचना में अंतर, जैसे 18 वर्ष से कम की अधिक संख्या, समान जनसंख्या वाले क्षेत्रों में भी मतदाताओं की संख्या में अंतर उत्पन्न करता है।

Electors Disparity and Vote Value Differences

मतदाता असमानता और वोट के मूल्य में अंतर

- The **value of a vote** is **inversely proportional** to the number of electors in a parliamentary constituency (PC).
एक संसदीय क्षेत्र (PC) में मतदाताओं की संख्या के मुकाबले वोट का मूल्य विपरीत अनुपात में होता है।
- **Union Territories (UTs), hilly and north-eastern States** have consistently had **higher vote values** due to geography and **minimum seat guarantees**.
केंद्र शासित प्रदेश (UTs), पर्वतीय और पूर्वोत्तर राज्य भौगोलिक कारणों और न्यूनतम सीट गारंटी के चलते लगातार अधिक वोट मूल्य प्राप्त करते रहे हैं।
- From **1951 to 2024**, **southern States** started with a **higher vote value**, lost it in between decades, and then regained it in **2009, 2019, and 2024**.
1951 से 2024 तक, दक्षिणी राज्यों ने अधिक वोट मूल्य के साथ शुरुआत की, फिर बीच के दशकों में इसे खोया, और 2009, 2019 और 2024 में फिर से इसे प्राप्त किया।
- The vote in **Idukki** is **4.5 times** more valuable than in **Malkajgiri** and **2.6 times** more than in **Bangalore North**, showing intra-State disparities.



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

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

CONTACT: 9971932488



इडुक्की में वोट का मूल्य मलकाजगिरी से 4.5 गुना और बेंगलोर नॉर्थ से 2.6 गुना अधिक है, जो राज्य के भीतर असमानता दर्शाता है।

Southern States' Representation in Parliament

दक्षिणी राज्यों का संसद में प्रतिनिधित्व

- As per 2024 elector data, southern States have 22.45% of India's electors but hold 23.8% of Lok Sabha seats.
2024 के मतदाता आंकड़ों के अनुसार, दक्षिणी राज्यों के पास भारत के 22.45% मतदाता हैं लेकिन लोकसभा में 23.8% सीटें हैं।
- In the Rajya Sabha, southern States hold 24.4% of seats, exceeding both their elector and Lok Sabha share.
राज्यसभा में दक्षिणी राज्यों के पास 24.4% सीटें हैं, जो उनके मतदाता और लोकसभा हिस्से दोनों से अधिक हैं।
- In contrast, other States have 71.2% of electors but hold only 67.4% Lok Sabha and 64.4% Rajya Sabha seats.
इसके विपरीत, अन्य राज्यों के पास 71.2% मतदाता हैं, लेकिन उनकी लोकसभा में केवल 67.4% और राज्यसभा में 64.4% हिस्सेदारी है।
- Tamil Nadu has 39 Lok Sabha seats, less than Bihar's 40 and West Bengal's 42, but it has 18 Rajya Sabha seats, more than Bihar and Bengal's 16.
तमिलनाडु के पास 39 लोकसभा सीटें हैं, जो बिहार (40) और पश्चिम बंगाल (42) से कम हैं, लेकिन 18 राज्यसभा सीटें हैं, जो दोनों के 16 से अधिक हैं।

Proposed Expansion to 800 Parliamentary Seats

800 संसदीय सीटों का प्रस्तावित विस्तार

- A model increasing total seats to 800, while retaining current counts for UTs and smaller States, results in 810 seats.
UTs और छोटे राज्यों की वर्तमान सीट संख्या बनाए रखते हुए, कुल सीटों को 800 करने का प्रस्ताव 810 सीटों तक पहुंचता है।
- In this model, Rajasthan (76%), Karnataka (60.7%), and Telangana (58.8%) show the highest gains among large States.
इस मॉडल में राजस्थान (76%), कर्नाटक (60.7%), और तेलंगाना (58.8%) को बड़े राज्यों में सबसे अधिक लाभ होता है।

Misconceptions Around Population-Based Allocation

जनसंख्या आधारित आवंटन को लेकर भ्रांतियाँ



- The belief that **constituency allocation** is solely based on **population** is incorrect; **geographical challenges** and **minimum representation** have always been factors.
यह धारणा कि निर्वाचन क्षेत्रों का आवंटन केवल जनसंख्या पर आधारित होता है, गलत है; इसमें हमेशा भौगोलिक चुनौतियाँ और न्यूनतम प्रतिनिधित्व जैसे कारक शामिल रहे हैं।
- Linking **political representation** with **population control** creates a **dangerous precedent**, inviting similar demands based on **religion or caste**.
राजनीतिक प्रतिनिधित्व को जनसंख्या नियंत्रण से जोड़ना खतरनाक मिसाल कायम करता है, जिससे धर्म या जाति के आधार पर समान दावे सामने आ सकते हैं।
- For example, **Jains and upper castes follow population control the most, while Muslims and Scheduled Tribes show higher fertility rates**.
उदाहरण के लिए, जैन और उच्च जातियाँ जनसंख्या नियंत्रण का सबसे अधिक पालन करती हैं, जबकि मुस्लिम और अनुसूचित जनजातियाँ उच्च प्रजनन दर दिखाती हैं।
- Earlier, when **population** was used to form PCs, the impact of **migration** and **enumeration limitations** wasn't fully understood.
पहले जब जनसंख्या के आधार पर निर्वाचन क्षेत्र बनाए गए थे, तब प्रवासन और गणना की सीमाओं का पूरा अनुमान नहीं लगाया गया था।
- Therefore, the **true essence** of 'one person, one vote, one value' is better reflected by **elector counts**, not population.
इसलिए, 'एक व्यक्ति, एक वोट, एक मूल्य' का सच्चा सार जनसंख्या के बजाय मतदाता संख्या से बेहतर रूप में प्रकट होता है।



Sustenance woes



GS Paper II: IR

Aymara peasants in Bolivia participate in a march in capital La Paz on Monday demanding that President Luis Arce's government find a quick solution to the shortage of dollars, fuel and the rising cost of living. AFP

PA



Author Frederick Forsyth dies aged 86

PCS

Agence France-Presse
LONDON

British thriller writer Frederick Forsyth, the author of *The Day of The Jackal*, has died at the age of 86, his literary agents Curtis Brown said on Monday.

“We mourn the passing of one of the world’s greatest thriller writers,” his agent Jonathan Lloyd said. Forsyth died at home on Monday morning surrounded by his family following a brief illness.



Frederick Forsyth

A prolific writer, Forsyth wrote over 25 books and sold over 75 million copies worldwide.

Forsyth’s bestsellers also included *The Odessa File* (1972) and *The Dogs of War* (1974).

“After serving as one of the youngest ever RAF pilots, he turned to journalism, using his gift for languages in German, French and Russian to become a foreign correspondent in Biafra (in Nigeria),” Mr. Lloyd said.

“Appalled at what he saw and using his experience during a stint as a secret service agent, he

wrote his first and perhaps most famous novel, *The Day Of The Jackal*,” he added.

Based on a plot to kill France’s President Charles de Gaulle in 1963, *The Day of The Jackal* was turned into a 1973 film and more recently a television series starring Eddie Redmayne.

A sequel to *The Odessa File*, entitled *Revenge Of Odessa*, on which Forsythe worked with thriller writer Tony Kent is to be published in August.

GS Paper III: Economy, S&T, Environment, DM, IS)

1. A New Water Harvesting Model Promises to Help Rajasthan’s Farmers

राजस्थान के किसानों की मदद के लिए एक नया वर्षा जल संचयन मॉडल

2. India’s First E-Waste Recycling Park to be Built in Delhi

भारत का पहला ई-वेस्ट रीसाइक्लिंग पार्क दिल्ली में बनाया जाएगा

3. Initiate Dialogue with Maoists: Left Parties in Joint Appeal to PM

माओवादी से संवाद शुरू करें: वाम दलों की प्रधानमंत्री से संयुक्त अपील

4. Tiger Mauls to Death Temple Caretaker in Ranthambore

रणथंभौर में बाघ ने मंदिर के पुजारी को मार डाला



5. The Story of How Asafoetida Came to Be Successfully Cultivated in India

भारत में हींग की सफल खेती की कहानी

6. How does the first shoot rise safely through soil?

पहला अंकुर मिट्टी से सुरक्षित रूप से कैसे ऊपर उठता है?

7. A Wilderness Where Land Meets the Sea

एक ऐसा वन क्षेत्र जहाँ ज़मीन समुद्र से मिलती है

8. When Triumph Turned into Tragedy

जब जीत त्रासदी में बदल गई

9. How drones are the new face of warfare

युद्ध का नया चेहरा कैसे बन रहे हैं ड्रोन

10. How Extracting and Producing Nickel Can Be Made More Sustainable

निकेल का निष्कर्षण और उत्पादन कैसे अधिक टिकाऊ बनाया जा सकता है



A new water harvesting model promises to help Rajasthan's farmers

ISS Paper III: Environment

Mohammed Iqbal
JAIPUR

In the dry heartland of Rajasthan, a transformative rural water conservation model is set to benefit farmers in the upcoming monsoon. Those behind the initiative, which relies on 50 scientifically designed and climate-resilient farm ponds at Kukas village in the State capital of Jaipur, claim it has a 10-crore-litre seasonal monsoon run-off conservation potential.

The village panchayat in Jaipur district's Amber block is the second place in the State selected for the rainwater harvesting enterprise, following the successful installation of farm ponds in the rain-fed land of Dausa district. As many as 250 ponds dug in the agricultural land of Dausa



An aerial view of a farm pond in Jaipur's Kukas village. As many as 50 such ponds have been dug up in the area. SPECIAL ARRANGEMENT

have enabled the farmers to get perennial crops.

Nearly 99.4% of the agricultural cultivable land in Jaipur is dependent on groundwater for irrigation. The district extracts 2.22 times the water recharged through rain every year. The project in Kukas emphasises the sustainability and livelihoods of peasants, with a focus on the

availability of water for irrigation.

The initiative involves constructing 10-foot deep, plastic-lined ponds on 5% of each farmer's land, reinforced with fencing.

The ponds are designed to capture rainwater, ensuring year-round irrigation for rabi and kharif crops and enabling the return of sustainable lives-

tock rearing and high-value horticulture.

Person behind initiative

An alumnus of the Indian Institute of Technology (IIT), Kharagpur, Vipra Goyal, who has been working with the farmers, said while the construction of 50 ponds had been completed recently, 25 more were being dug to secure sustainable water supply to the rural households, which would help about 50,000 villagers in the region in the long term.

Farmer Ram Phool of Kacherawala village, near Kukas, told *The Hindu* that he planned to sow crops like groundnuts and chaula (cowpeas) following the inflow of water into the pond installed at a corner of his land spread across eight bighas (nearly five acres). "One has to dig as much as

500 feet to extract groundwater in our area. I was growing bajra earlier as it needs less water," said the 58-year-old farmer.

Kukas sarpanch Radheyshyam Meena said the sustainable irrigation model will help farmers in his area to diversify into cultivating more profitable and water-efficient crops. "The model offered to us has great potential to make farmers self-reliant. They are set to get a better yield with the year-long water supply," said Mr. Meena.

Catching rainwater

Mr. Goyal said 14 lakh to 21 lakh litres of good seasonal monsoon run-off was flowing unutilised at every farm of one hectare in Jaipur. "In areas like Amber block, lacking river and canal networks, farm ponds offer the most viable solu-

tion. The continuous irrigation will also help in recharging groundwater," he said.

The IITian, who had earlier organised awareness programmes about farm ponds through Ward Sabhas, Gram Sabhas and camel cart rallies in Dausa, said that the continuous availability of water could pave the way for dairy and food processing units, as well as market linkages for agricultural produce. He has sought the Central government's endorsement to partner with multilateral agencies for grant-based infrastructure and capacity building.

Mr. Goyal previously worked with the NITI Aayog. He has partnered with a two-wheeler manufacturing company to raise funds for the installation of ponds in Kukas.

A New Water Harvesting Model Promises to Help Rajasthan's Farmers

राजस्थान के किसानों की मदद के लिए एक नया वर्षा जल संचयन मॉडल

A transformative rural water conservation model is being implemented in the dry heartland of Rajasthan, aiming to benefit farmers during the upcoming monsoon.

राजस्थान के सूखे क्षेत्र में एक परिवर्तनकारी ग्रामीण जल संरक्षण मॉडल लागू किया जा रहा है, जिसका उद्देश्य आने वाले मॉनसून में किसानों को लाभ पहुंचाना है।

- This initiative uses **50 scientifically designed and climate-resilient farm ponds** at **Kukas village**, Jaipur, and claims a **seasonal monsoon runoff conservation potential of 10 crore litres**.

इस पहल में जयपुर के कुकस गांव में 50 वैज्ञानिक रूप से डिज़ाइन किए गए और जलवायु-प्रतिकारक फार्म तालाबों का उपयोग किया गया है और इसका 10 करोड़ लीटर मौसमी वर्षा जल संचयन क्षमता का दावा किया गया है।

- **Kukas Panchayat**, located in **Amber block of Jaipur district**, is the **second village** chosen after a successful farm pond project in **Dausa district**.

जयपुर जिले के आमेर ब्लॉक में स्थित कुकस पंचायत को दौसा जिले के सफल फार्म तालाब परियोजना के बाद दूसरे गांव के रूप में चुना गया है।



- In Dausa, 250 ponds were dug on rain-fed farmland, helping farmers grow perennial crops.
दौसा में 250 तालाब वर्षा आधारित कृषि भूमि में खोदे गए, जिससे किसान सालभर की फसलें उगा पाए।
- 99.4% of cultivable land in Jaipur relies on groundwater for irrigation, and the district extracts 2.22 times more water than it recharges annually.
जयपुर की 99.4% कृषि योग्य भूमि सिंचाई के लिए भूमिगत जल पर निर्भर है और जिला प्रतिवर्ष 2.22 गुना अधिक पानी निकालता है जितना कि पुनर्भरण होता है।
- The Kukas project emphasizes sustainability and livelihoods, focusing on irrigation water availability.
कुकस परियोजना में सततता और आजीविका को प्रमुखता दी गई है, जिसमें सिंचाई के लिए पानी की उपलब्धता पर विशेष ध्यान है।
- The model involves constructing 10-foot deep, plastic-lined ponds on 5% of each farmer's land, secured with fencing.
इस मॉडल में प्रत्येक किसान की ज़मीन के 5% हिस्से पर 10 फीट गहरे, प्लास्टिक लाइनिंग वाले तालाबों का निर्माण किया गया है, जिनकी बाड़बंदी भी की गई है।
- The ponds are designed to capture rainwater, enabling year-round irrigation for rabi and kharif crops, and also reviving livestock and high-value horticulture.
ये तालाब वर्षा जल को संग्रहित करने के लिए डिज़ाइन किए गए हैं जिससे रबी और खरीफ फसलों की सालभर सिंचाई संभव हो सके और पशुपालन तथा मूल्यवान बागवानी को बढ़ावा मिले।
- Vipra Goyal, an IIT Kharagpur alumnus, is leading the project. 50 ponds are already completed and 25 more are being dug to support 50,000 villagers.
आईआईटी खड़गपुर के पूर्व छात्र विप्र गोयल इस परियोजना का नेतृत्व कर रहे हैं। 50 तालाबों का निर्माण हो चुका है और 25 और खुदाई में हैं ताकि 50,000 ग्रामीणों को दीर्घकालीन लाभ मिल सके।
- Farmer Ram Phool from Kacherawala village, near Kukas, plans to grow groundnuts and cowpeas, now that he has a pond on his 8 bigha land.
कुकस के पास कचरावाला गांव के किसान राम फूल अब अपने 8 बीघा खेत में मूंगफली और चौला (लोबिया) की खेती करने की योजना बना रहे हैं क्योंकि वहां एक तालाब बनाया गया है।
- He said earlier he had to dig up to 500 feet to get groundwater, and thus used to grow bajra which needs less water.
उन्होंने बताया कि पहले भूजल निकालने के लिए 500 फीट तक खुदाई करनी पड़ती थी, इसलिए वे कम पानी वाली बाजरा की खेती करते थे।
- Kukas sarpanch Radheyshyam Meena said the irrigation model would help farmers adopt profitable and water-efficient crops, making them self-reliant.
कुकस के सरपंच राधेश्याम मीणा ने कहा कि यह सिंचाई मॉडल किसानों को लाभकारी और जल-कुशल फसलों की खेती करने में मदद करेगा और उन्हें आत्मनिर्भर बनाएगा।
- 14 to 21 lakh litres of seasonal monsoon runoff is currently going unutilised per hectare in Jaipur farms, said Mr. Goyal.
श्री गोयल ने बताया कि जयपुर के खेतों में प्रति हेक्टेयर 14 से 21 लाख लीटर मौसमी वर्षा जल बिना उपयोग के बह जाता है।



- In areas like **Amber block**, with **no river or canal networks**, **farm ponds** are the most viable solution for **continuous irrigation** and **groundwater recharge**.
नदी और नहर नेटवर्क से वंचित आमेर ब्लॉक जैसे क्षेत्रों में, फार्म तालाब लगातार सिंचाई और भूजल पुनर्भरण के लिए सबसे उपयुक्त समाधान हैं।
- Mr. Goyal earlier conducted awareness campaigns in **Dausa** through **Ward Sabhas**, **Gram Sabhas**, and **camel cart rallies**.
श्री गोयल ने इससे पहले दौसा में वार्ड सभाओं, ग्राम सभाओं और ऊंटगाड़ी रैलियों के माध्यम से जागरूकता अभियान चलाया था।
- He said **continuous water availability** would support **dairy and food processing units** and improve **market linkages** for farmers.
उन्होंने कहा कि लगातार जल उपलब्धता से डेयरी और खाद्य प्रसंस्करण इकाइयों का मार्ग प्रशस्त होगा और कृषि उत्पादों के बाज़ार से जुड़ाव बेहतर होगा।
- Mr. Goyal has requested **Central government endorsement** and partnerships with **multilateral agencies** for **grant-based infrastructure** and **capacity building**.
श्री गोयल ने केंद्र सरकार से समर्थन और बहुपक्षीय एजेंसियों के साथ अनुदान आधारित बुनियादी ढांचे और क्षमता निर्माण के लिए साझेदारी की मांग की है।
- He has partnered with a **two-wheeler manufacturing company** to raise **funds** for the **installation of ponds in Kukas**.
उन्होंने कुकस में तालाबों की स्थापना के लिए फंड जुटाने हेतु एक दोपहिया वाहन निर्माण कंपनी से साझेदारी की है।



India's first e-waste recycling park to be built in Delhi, says Minister

GS Paper III: Environment

The Hindu Bureau
NEW DELHI

Environment Minister Manjinder Singh Sirsa on Monday announced that the Delhi government has undertaken a project to develop India's first electronic waste (e-waste) eco park in north Delhi's Holambi Kalan.

Mr. Sirsa made the announcement after chairing a meeting on Monday, in which it was decided that the Delhi State Industrial and Infrastructure Development Corporation would issue a global tender to invite "the world's best green technology partners" to build the park.



The park will also have training centres to upskill informal workers who handle hazardous e-waste. FILE PHOTO

According to a statement by the Delhi government, the facility, spanning 11.4 acres, will be built under a Design, Build, Finance, Operate, and Transfer (DBFOT) model on a Public Private Partnership (PPP) basis for a concession period of 15 years. It will be designed to process up to 51,000 tonnes of e-waste, including all 106 categories of waste listed under the E-Waste Management Rules, 2022. The park, which is one of four such facilities planned in the country, is expected to generate over ₹350 crore in revenue.

Mr. Sirsa said, "The eco park will not just manage waste. It will be the symbol of Delhi's transition into a circular economy, where no resource is wasted and no worker left behind."

In 18 months

Construction of the park is expected to be completed within 18 months.

India's First E-Waste Recycling Park to be Built in Delhi

भारत का पहला ई-वेस्ट रीसाइक्लिंग पार्क दिल्ली में बनाया जाएगा

Environment Minister Manjinder Singh Sirsa announced on Monday that the Delhi government has undertaken a project to develop India's first electronic waste (e-waste) eco park in Holambi Kalan, North Delhi.

पर्यावरण मंत्री मनजिंदर सिंह सिरसा ने सोमवार को घोषणा की कि दिल्ली सरकार ने उत्तर दिल्ली के होलंबी कलां में भारत का पहला इलेक्ट्रॉनिक कचरा (ई-वेस्ट) इको पार्क विकसित करने की परियोजना शुरू की है।

- The announcement was made after Mr. Sirsa chaired a meeting regarding the project.

यह घोषणा श्री सिरसा द्वारा इस परियोजना पर एक बैठक की अध्यक्षता करने के बाद की गई।

- It was decided that the Delhi State Industrial and Infrastructure Development Corporation would issue a global tender to invite "the world's best green technology partners" to build the park.

यह निर्णय लिया गया कि दिल्ली राज्य औद्योगिक और बुनियादी ढांचा विकास निगम एक वैश्विक टेंडर जारी करेगा ताकि "दुनिया की सर्वश्रेष्ठ हरित प्रौद्योगिकी कंपनियों" को इस पार्क के निर्माण के लिए आमंत्रित किया जा सके।



- The facility will span **11.4 acres** and be built under the **Design, Build, Finance, Operate, and Transfer (DBFOT)** model.
यह सुविधा 11.4 एकड़ में फैली होगी और डिज़ाइन, निर्माण, वित्त, संचालन और हस्तांतरण (DBFOT) मॉडल के तहत बनाई जाएगी।
- The project will operate on a **Public-Private Partnership (PPP) basis for a concession period of 15 years**.
इस परियोजना को सार्वजनिक-निजी भागीदारी (PPP) के आधार पर 15 वर्षों की रियायत अवधि के लिए संचालित किया जाएगा।
- The park will be capable of processing up to **51,000 tonnes of e-waste**, including all **106 categories** listed under the **E-Waste Management Rules, 2022**.
यह पार्क ई-वेस्ट प्रबंधन नियम, 2022 के तहत सूचीबद्ध सभी 106 श्रेणियों सहित 51,000 टन तक के ई-कचरे को संसाधित करने में सक्षम होगा।
- It is one of **four** such facilities planned in the country and is expected to generate over **₹350 crore in revenue**.
यह देश में योजना बनाई गई ऐसी चार सुविधाओं में से एक है और इससे ₹350 करोड़ से अधिक की राजस्व प्राप्ति की उम्मीद है।
- Mr. Sirsa stated that the eco park will be a **symbol of Delhi's transition to a circular economy**, ensuring **no resource is wasted** and **no worker left behind**.
श्री सिरसा ने कहा कि यह इको पार्क दिल्ली की परिपत्र अर्थव्यवस्था में बदलाव का प्रतीक होगा, जिससे कोई संसाधन बर्बाद न हो और कोई श्रमिक पीछे न छूटे।
- The **construction** of the park is expected to be **completed within 18 months**.
इस पार्क का निर्माण कार्य 18 महीनों के भीतर पूरा होने की उम्मीद है।



Initiate dialogue with Maoists: Left parties in joint appeal to PM

GS Paper III: Maoism
The Hindu Bureau
NEW DELHI

In a joint appeal to Prime Minister Narendra Modi, five Left parties urged him to put an immediate halt to the “extra-judicial” killings in the region around Chhattisgarh under Operation Kagar.

In the letter, leaders of the parties – D. Raja, Communist Party of India; M.A. Baby, Communist Party of India (Marxist); Dipankar Bhattacharya, Communist Party of India (Marxist-Leninist) Liberation; Manoj Bhattacharya, Revolutionary Socialist Party; and G. Devarajan, All India Forward Bloc – said there were reports that several senior Maoist leaders were currently in the custody of the security forces.

“We demand that they should all be produced in court and dealt with as per the rule of law,” they said.

The Adivasis in the region have long been complaining about the militarisation of the region. “The Adivasi rights enshrined in the Fifth Schedule of the Constitution are being systematically violated and the forests and minerals of Chhattisgarh are being



The parties urge the Centre to respond to Maoist declaration of unilateral ceasefire.

subjected to indiscriminate corporate exploitation with disastrous implications for environmental stability and livelihood of the local people. We urge upon you to stop this militaristic approach that treats the Adivasis with unmitigated hostility,” it said.

They underlined that the government had been refusing to hand over the bodies to the families, denying them their right to give a dignified farewell to their family members.

The repeated appeal from the Maoists for dialogue had also been ignored.

They urged the Centre to respond to the Maoist declaration of unilateral ceasefire and initiate a dialogue to resolve all issues.

Initiate Dialogue with Maoists: Left Parties in Joint Appeal to PM

माओवादी से संवाद शुरू करें: वाम दलों की प्रधानमंत्री से संयुक्त अपील

Five Left parties made a joint appeal to Prime Minister Narendra Modi urging him to immediately halt the “extra-judicial” killings in Chhattisgarh under Operation Kagar.

पाँच वाम दलों ने प्रधानमंत्री नरेंद्र मोदी से संयुक्त अपील की कि वे छत्तीसगढ़ में ऑपरेशन कागर के तहत चल रही “अवैध हत्याओं” को तुरंत रोके।

The signatories include D. Raja (CPI), M.A. Baby (CPI-M), Dipankar Bhattacharya (CPI-ML Liberation), Manoj Bhattacharya (RSP), and G. Devarajan (AIFB).

इस पत्र पर हस्ताक्षर करने वालों में डी. राजा (भाकपा), एम.ए. बेबी (भाकपा), दिपंकर भट्टाचार्य (भाकपा-माले लिबरेशन), मनोज भट्टाचार्य (रिवोल्यूशनरी सोशलिस्ट पार्टी), और जी. देवराजन (ऑल इंडिया फॉरवर्ड ब्लॉक) शामिल हैं।

They stated that senior Maoist leaders are reportedly in the custody of security forces.

उन्होंने कहा कि खबरों के अनुसार वरिष्ठ माओवादी नेता इस समय सुरक्षा बलों की हिरासत में हैं।

The parties demanded that these leaders be produced in court and dealt with according to the rule of law.

वाम दलों ने मांग की कि इन नेताओं को न्यायालय में पेश किया जाए और कानून के अनुसार कार्रवाई की जाए।

They highlighted that Adivasis in the region have long opposed the militarisation of the area.

उन्होंने बताया कि इस क्षेत्र के आदिवासी लंबे समय से सैन्यीकरण का विरोध कर रहे हैं।

- The letter alleged that Adivasi rights under the Fifth Schedule of the Constitution are being systematically violated.

पत्र में आरोप लगाया गया कि संविधान की पांचवीं अनुसूची में दिए गए आदिवासियों के अधिकारों का सुनियोजित रूप से उल्लंघन किया जा रहा है।



- They stated that **Chhattisgarh's forests and minerals** are being subjected to **indiscriminate corporate exploitation**, harming **environmental stability** and the **livelihoods of local people**.
उन्होंने कहा कि छत्तीसगढ़ के जंगलों और खनिजों का बेलगाम कॉर्पोरेट शोषण हो रहा है, जिससे पर्यावरणीय स्थिरता और स्थानीय लोगों की आजीविका पर बुरा असर पड़ रहा है।
- The letter appealed to end the **militaristic approach** that treats **Adivasis with hostility**.
पत्र में अपील की गई कि सैन्य दृष्टिकोण को रोका जाए जो आदिवासियों के साथ शत्रुतापूर्ण व्यवहार करता है।
- They also alleged that the **bodies of the deceased** are not being **returned to their families**, denying them the **right to a dignified farewell**.
उन्होंने यह भी आरोप लगाया कि मृतकों के शव परिजनों को नहीं सौंपे जा रहे, जिससे उन्हें सम्मानजनक अंतिम संस्कार का अधिकार नहीं मिल रहा।
- The parties said that **repeated appeals by Maoists** for dialogue have been **ignored**.
वाम दलों ने कहा कि माओवादियों द्वारा बार-बार संवाद की अपील को नजरअंदाज किया गया है।
- They urged the Centre to respond to the **Maoist unilateral ceasefire** and begin **dialogue to resolve all issues**.
उन्होंने केंद्र सरकार से अपील की कि माओवादियों की एकतरफा संघर्षविराम घोषणा का उत्तर दिया जाए और सभी मुद्दों के समाधान के लिए संवाद शुरू किया जाए।



Tiger mauls to death temple caretaker in Ranthambore

GS Paper III: Environment

The Hindu Bureau
JAIPUR

A tiger mauled to death a 60-year-old caretaker of the Jain Temple situated in the historic Ranthambore Fort, forming part of the National Park, in Rajasthan's Sawai Madhopur district on Monday. This was the third death in a tiger attack in the wildlife reserve in the past two months.

The deceased, Radheyshyam Saini, had gone out for his morning routine when the tiger attacked him.

A forest ranger, Devendra Chaudhary, was killed in a tiger attack on May 11, while a seven-year-old boy, Kartik Suman, was mauled to death near Trinetra Ganesh temple on April 16.

A tiger suspected to be involved in both these incidents was later tranquillised and shifted to another enclosure in the National Park.

Agitated by the attack, a crowd of local people gathered outside the National Park and staged a dharna. They blocked the Sawai Madhopur-Kundera road, while accusing the Forest Department of negligence and demanding compensation for the bereaved family.

Tiger Mauls to Death Temple Caretaker in Ranthambore

रणथंभौर में बाघ ने मंदिर के पुजारी को मार डाला

A tiger mauled to death a 60-year-old caretaker of the Jain Temple located in the historic Ranthambore Fort, which is part of the National Park in Sawai Madhopur district, Rajasthan, on Monday.

सोमवार को राजस्थान के सवाई माधोपुर जिले में स्थित रणथंभौर किले के जैन मंदिर में एक 60 वर्षीय पुजारी को बाघ ने मार डाला। यह किला नेशनल पार्क का हिस्सा है।

• This was the third death in a tiger attack in the wildlife reserve over the past two months.

यह पिछले दो महीनों में वन्यजीव अभयारण्य में बाघ के हमले से हुई तीसरी मौत थी।

• The deceased, Radheyshyam Saini, had gone out for his morning routine when the tiger attacked him.

मृतक राधेश्याम सैनी अपनी सुबह की दिनचर्या के लिए बाहर गए थे, तभी बाघ ने हमला कर दिया।

• Earlier, a forest ranger, Devendra Chaudhary, was killed in a tiger attack on May 11.

इससे पहले, 11 मई को वन रेंजर देवेन्द्र चौधरी की बाघ के हमले में मौत हो गई थी।

• A seven-year-old boy, Kartik Suman, was also mauled to death near the Trinetra Ganesh temple on April 16.

16 अप्रैल को त्रिनेत्र गणेश मंदिर के पास सात साल के कार्तिक सुमन की भी बाघ के हमले में मौत हो गई थी।

• The tiger suspected to be involved in both earlier incidents was later tranquillised and shifted to another enclosure in the National Park.

इन दोनों घटनाओं में संदिग्ध बाघ को बाद में बेहोश कर के पार्क के दूसरे बाड़े में भेज दिया गया।

• Following the recent attack, an agitated crowd of local people gathered outside the National Park and staged a dharna.

हालिया हमले के बाद, स्थानीय लोगों की भीड़ राष्ट्रीय उद्यान के बाहर इकट्ठा हुई और धरने पर बैठ गई।

• They blocked the Sawai Madhopur-Kundera road, accused the Forest Department of negligence, and demanded compensation for the bereaved family.

उन्होंने सवाई माधोपुर-कुंडेरा मार्ग को जाम कर दिया, वन विभाग पर लापरवाही का आरोप

लगाया और पीड़ित परिवार को मुआवज़ा देने की मांग की।



The story of how asafoetida came to be successfully cultivated in India

The first flowering and seed set of heeng at Palampur was reported on May 28, 2025, by CSIR, showing that heeng can be cultivated in India; this achievement, realised approximately five years after the initial sowing in 2020 in Himachal Pradesh, confirmed the plant's successful acclimatisation

666 Pages | Basic Science |

Sanjay Kumar
Shekhar Mande

Heeng or asafoetida (*Ferula asa-foetida*) is an essential ingredient in many Indian cuisines. A pinch of heeng is typically added to hot oil before other constituents when cooking. Despite the great diversity of India's cuisines, most of them have recipes with heeng.

There are mentions of heeng in ancient Indian texts including the Mahabharata and texts of Ayurveda. The latter recommends using heeng to refresh one's senses, including consciousness. The Charaka Samhita Sutrasthana 27/299 says heeng can help relieve abdominal pain, digest undigested food, and enhance taste. The Pippalada Samhita and the works of Panini also include heeng.

Today, heeng plants thrive in cold, arid environments suited to the native regions in Iran, Afghanistan, and Central Asia. The plant prefers sandy, well-drained soil with low moisture, ideally receiving annual rainfall of 200 mm or less, though it can tolerate up to 300 mm in cultivated regions like the Indian Himalayas. It flourishes in temperatures of 10-20° C, tolerates highs of up to 40° C, and withstands winter lows down to -4° C. In extremely dry and cold weather, heeng plants typically become dormant to survive.

These requirements make high-altitude, semi-arid regions like Lahaul-Spiti and Uttarkashi in India suitable for its cultivation. Excessive rainfall or high soil moisture can hinder growth.

The final product obtained from the plant, asafoetida, is derived from an oleo-gum resin extracted from the plant's thick, fleshy taproot and rhizome, which makes up 40-64% of the dried gum. Heeng is a perennial plant that typically takes five years to mature and start flowering. Incisions are then made in the taproot, allowing the milky latex to exude and harden into a gum-like substance. This resin is dried and processed into powder or crystal form for culinary and medicinal use.

Cutting import dependence

Until early last decade, despite being the world's largest consumer of heeng, India depended on imports from Afghanistan, Iran, and Uzbekistan, among others. The government subsequently launched a national effort to promote indigenous cultivation of heeng. This mission was led by the CSIR-Institute of Himalayan Bioresource Technology (IHBT) in Palampur, Himachal Pradesh. Researchers here took up the challenge of introducing heeng to Indian soil for the first time, starting with a rigorous and multi-layered international search from 2018 and 2020 to procure viable seeds of heeng.

As part of this programme, CSIR-IHBT scientists communicated with the relevant agencies in Iran, Afghanistan, Uzbekistan, Tajikistan, and South Africa and contacted more than 20 suppliers. These efforts culminated in the procurement of heeng seeds, initially from Iran, and later from Afghanistan.

To facilitate legal and phytosanitary compliance, the ICAR-National Bureau of Plant Genetic Resources (NBPGR) in New Delhi, the designated nodal agency for



Asafoetida, or heeng, is an important ingredient in Indian recipes. GETTY IMAGES/ISTOCKPHOTO

plant germplasm import and quarantine, issued the necessary import permits and conducted all mandated quarantine inspections. Once the seeds were cleared, they were handed over to IHBT for research and field evaluation.

The first import of six seed accessions from Iran took place in October 2018, and IHBT researchers were faced with the significant biological challenges posed by their dormancy and low germination rate. They worked to develop germination protocols, identify altitude-specific locations suitable for cultivation, and formulate agronomic practices for Indian conditions. Controlled trials were conducted at IHBT Palampur and its Centre for High Altitude Biology in Ribling in Lahaul & Spiti.

Early adopters

The team planted the first heeng seedling in India on October 15, 2020, in a farmer's field at Kwarang village in Lahaul Valley, officially marking the beginning of the country's journey into indigenous heeng cultivation.

One key milestone in expanding heeng cultivation beyond Lahaul was achieved shortly thereafter when the team planted heeng at Janjheli in Mandi district on November 8, 2020.

This was the first extension of heeng cultivation into the mid-hill regions of Himachal Pradesh, exploring the crop's potential beyond the high-altitude cold



CSIR-IHBT scientists with farmers in Kwarang village of Lahaul valley in Himachal Pradesh, October 15, 2020. SPECIAL ARRANGEMENT

The first import of six seed accessions took place in 2018, and researchers developed germination protocols, identified altitude-specific locations suitable for cultivation, and formulated agronomic practices for India

desert zone.

This was soon followed by the establishment of demonstration plots and farmer training programmes across Lahaul & Spiti, Mandi, Kinnaur, Kullu, and Chamba, in collaboration with the State Agriculture Department.

Villages that became early adopters of this initiative were:

- Lahaul & Spiti: Madgran, Salgran, Beeling, Keylong
- Mandi: Janjheli, Majhakhal, Kataru, Ghayan, Karsog
- Kinnaur: Kafnoo, Hango, Maling, Reckong Peo, Kalpa, Moorang, Graming, Katgaon
- Kullu: Bagsaid, Dhaugi-Sainj, Kotla-Banjra
- Chamba: Pangi, Deol, Bharmour, Mahala, Tooh

To further institutionalise this progress, the Heeng Germplasm Resource Centre was established at IHBT Palampur and was formally inaugurated on March 5, 2022. It serves as the national hub for conservation, research, training, seed production, and plant propagation vis-à-vis heeng.

May 28 milestone

CSIR-IHBT researchers also developed a dedicated tissue culture unit to facilitate the large-scale propagation of heeng plants. This specialised facility was funded by the Government of Himachal Pradesh, reinforcing the collaborative framework between scientific institutions and the State in advancing the

high-altitude cultivation of this important crop. Researchers used advanced methods such as ecological niche modelling to map favourable cultivation zones using GPS-tagged occurrence data and environmental parameters.

The first flowering and seed set of heeng at Palampur was finally reported on May 28, 2025, by the Council of Scientific and Industrial Research – a significant milestone demonstrating that heeng can indeed be successfully cultivated in India.

This achievement, realised approximately five years after the initial sowing in 2020 in Himachal Pradesh, confirmed the plant's successful acclimatisation.

It also signifies its ability to complete the reproductive cycle, a critical prerequisite for seed production, long-term domestication, and sustainable commercial cultivation.

While the heeng plant thrives in cold deserts, its successful cultivation in Palampur at just 1,300 m (above sea level) is a breakthrough: proving that plant adaptability holds untapped potential and that new agro-ecological frontiers still await discovery.

Ultimately, the milestone paves the way for India to reduce its import dependence, and for farmers to enhance their incomes and build a self-reliant supply chain for this culturally important spice. In all, the success of heeng cultivation in India owes itself to the efforts of CSIR-IHBT, ICAR-NBPGR, the Himachal Pradesh government, the State Agriculture Department, and the region's progressive farmers.

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Cultivated in India

भारत में हींग की सफल खेती की कहानी

The first flowering and seed setting of heeng in India was reported on May 28, 2025, at Palampur by CSIR, proving that heeng can be successfully cultivated in India.

28 मई 2025 को सीएसआईआर ने पालमपुर में हींग के पहले पुष्पन और बीज बनने की रिपोर्ट दी, जिससे साबित हुआ कि भारत में हींग की सफल खेती संभव है।

- This achievement came about **five years** after its initial sowing in **2020** in **Himachal Pradesh**, confirming the plant's **successful acclimatisation**.
यह उपलब्धि 2020 में हिमाचल प्रदेश में प्रारंभिक बुआई के लगभग पांच साल बाद हासिल हुई, जिससे पौधे के सफल अनुकूलन की पुष्टि हुई।

Heeng or Asafoetida in Indian Culture and Texts

भारतीय संस्कृति और ग्रंथों में हींग का महत्व

- **Heeng (Ferula assa-foetida)** is an essential **ingredient** in many **Indian cuisines**.
हींग (Ferula assa-foetida) कई भारतीय व्यंजनों में एक महत्वपूर्ण सामग्री है।
- It is usually added to **hot oil** before other spices while cooking.
इसे पकाते समय अन्य मसालों से पहले **गरम तेल में डाला जाता है**।
- Heeng is mentioned in ancient Indian texts such as the **Mahabharata** and **Ayurveda**.
महाभारत और आयुर्वेद जैसे प्राचीन भारतीय ग्रंथों में हींग का उल्लेख मिलता है।
- The **Charaka Sanhita Sutrasthana 27/299** describes heeng as a remedy for **abdominal pain**, **indigestion**, and as a **taste enhancer**.
चरक संहिता सूत्रस्थान 27/299 में हींग को **पेट दर्द**, **अपच**, और **स्वादवर्धक** के रूप में बताया गया है।
- Texts like the **Pippalada Samhita** and the works of **Panini** also reference heeng.
पिप्पलाद संहिता और पाणिनी के कार्यों में भी हींग का उल्लेख है।

Climatic and Environmental Requirements

जलवायु और पर्यावरण संबंधी आवश्यकताएं

- Heeng plants thrive in **cold, arid environments**, mainly in **Iran, Afghanistan, and Central Asia**.
हींग के पौधे ठंडी और शुष्क जलवायु में पनपते हैं, विशेषकर **ईरान, अफगानिस्तान, और मध्य एशिया** में।
- They prefer **sandy, well-drained soil** with **low moisture** and ideally get **200 mm or less annual rainfall**, though they can tolerate up to **300 mm**.

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ये रेतीली, अच्छी तरह से पानी निकालने वाली मिट्टी और कम नमी पसंद करते हैं, और 200 मिमी या कम वार्षिक वर्षा उपयुक्त होती है, हालांकि 300 मिमी तक सहन कर सकते हैं।

- Ideal temperatures range between 10–20°C, but the plant can endure up to 40°C and winter lows of –4°C.

इनके लिए उपयुक्त तापमान 10–20°C होता है, लेकिन ये 40°C तक की गर्मी और –4°C तक की सर्दी सह सकते हैं।

- In extremely dry and cold conditions, heeng plants enter dormancy to survive. अत्यधिक ठंडे और शुष्क मौसम में हींग के पौधे निष्क्रिय अवस्था (dormant) में चले जाते हैं ताकि जीवित रह सकें।

Suitable Indian Regions for Cultivation

भारत में खेती के लिए उपयुक्त क्षेत्र

- High-altitude, semi-arid areas like Lahaul-Spiti and Uttarkashi are suitable for heeng cultivation. लाहौल-स्पीति और उत्तरकाशी जैसे उच्च ऊंचाई वाले अर्ध-शुष्क क्षेत्र हींग की खेती के लिए उपयुक्त हैं।
- Excess rainfall or high soil moisture can negatively affect the plant's growth. अत्यधिक वर्षा या मिट्टी में ज्यादा नमी से पौधे की वृद्धि प्रभावित हो सकती है।

Extraction and Processing of Asafoetida

हींग का निष्कर्षण और प्रसंस्करण

- The final asafoetida product is obtained from the oleo-gum resin extracted from the plant's taproot and rhizome. अंतिम हींग उत्पाद पौधे की गांठदार जड़ (taproot) और गांठ (rhizome) से निकाले गए ओलियो-गम रेजिन से प्राप्त होता है।
- This oleo-gum resin makes up 40–64% of the dried gum. यह ओलियो-गम रेजिन सूखे गोंद का 40–64% भाग होता है।
- Heeng is a perennial plant that takes about five years to mature and start flowering. हींग एक बहुवर्षीय पौधा है, जिसे पुष्पन शुरू करने और परिपक्व होने में लगभग पांच वर्ष लगते हैं।
- After flowering, incisions are made in the taproot, and milky latex is collected, which hardens into a gum-like substance. पुष्पन के बाद मुख्य जड़ में चीरे लगाए जाते हैं और जो दूधिया लेटेक्स निकलता है, वह जमकर गोंद जैसी वस्तु बन जाता है।
- This resin is then dried and processed into powder or crystal form for culinary and medicinal uses. यह रेजिन फिर सूखाकर और प्रसंस्करण करके पाउडर या क्रिस्टल रूप में रसोई और औषधीय उपयोग के लिए तैयार किया जाता है।



Cutting Import Dependence

आयात पर निर्भरता कम करना

Until the early 2010s, even though India was the world's largest consumer of heeng, it relied on imports from countries like Afghanistan, Iran, and Uzbekistan.

2010 के शुरुआती वर्षों तक, भारत भले ही हींग का दुनिया में सबसे बड़ा उपभोक्ता था, लेकिन यह अफगानिस्तान, ईरान और उज्बेकिस्तान जैसे देशों से आयात पर निर्भर था।

- The government then launched a **national effort** to promote **indigenous cultivation** of heeng.
इसके बाद सरकार ने हींग की देशीय खेती को बढ़ावा देने के लिए एक राष्ट्रीय प्रयास शुरू किया।
- This mission was led by the **CSIR-Institute of Himalayan Bioresource Technology (IHBT)** in Palampur, Himachal Pradesh.
इस मिशन का नेतृत्व पालमपुर, हिमाचल प्रदेश स्थित सीएसआईआर-हिमालय जैवसंसाधन प्रौद्योगिकी संस्थान (IHBT) ने किया।
- Researchers took up the challenge of growing **heeng in Indian soil** for the first time.
शोधकर्ताओं ने पहली बार भारतीय मिट्टी में हींग उगाने की चुनौती स्वीकार की।
- Between **2018 and 2020**, they conducted a **rigorous international search** to procure **viable heeng seeds**.
2018 से 2020 के बीच उन्होंने जीवित हींग बीजों की प्राप्ति के लिए सघन अंतरराष्ट्रीय खोज की।
- As part of this effort, CSIR-IHBT scientists contacted relevant agencies in **Iran, Afghanistan, Uzbekistan, Tajikistan, and South Africa**, speaking with **more than 20 suppliers**.
इस प्रयास के तहत, CSIR-IHBT वैज्ञानिकों ने ईरान, अफगानिस्तान, उज्बेकिस्तान, ताजिकिस्तान और दक्षिण अफ्रीका की संबंधित एजेंसियों से संपर्क किया और 20 से अधिक आपूर्तिकर्ताओं से बातचीत की।
- Eventually, heeng seeds were procured **first from Iran** and then **from Afghanistan**.
अंततः हींग के बीज पहले ईरान और बाद में अफगानिस्तान से प्राप्त किए गए।
- The **ICAR-National Bureau of Plant Genetic Resources (NBPGR)** in New Delhi issued **import permits** and conducted **quarantine inspections** for legal and phytosanitary compliance.
नई दिल्ली स्थित आईसीएआर-राष्ट्रीय पादप आनुवंशिक संसाधन ब्यूरो (NBPGR) ने आयात परमिट जारी किए और क्वारंटीन निरीक्षण किए ताकि कानूनी और जैव-सुरक्षा नियमों का पालन सुनिश्चित किया जा सके।
- After clearance, the seeds were handed over to **IHBT** for **research and field evaluation**.
स्वीकृति के बाद बीजों को IHBT को अनुसंधान और क्षेत्रीय परीक्षण के लिए सौंप दिया गया।
- The **first import of six seed accessions** from Iran took place in **October 2018**.
अक्टूबर 2018 में ईरान से छह प्रकार के बीजों का पहला आयात किया गया।



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- IHBT researchers faced **biological challenges** like **seed dormancy** and **low germination rates**.
IHBT के वैज्ञानिकों को बीज निष्क्रियता और कम अंकुरण दर जैसी जैविक चुनौतियों का सामना करना पड़ा।
- They developed **germination protocols**, identified **altitude-specific locations**, and designed **agronomic practices** suitable for Indian conditions.
उन्होंने अंकुरण प्रोटोकॉल तैयार किए, उंचाई-विशिष्ट स्थानों की पहचान की और भारतीय परिस्थितियों के अनुकूल कृषि पद्धतियाँ बनाईं।
- Controlled trials were conducted at IHBT Palampur and at the **Centre for High Altitude Biology in Ribling, Lahaul & Spiti**.
IHBT पालमपुर और लाहौल-स्पीति के रिबलिंग में उच्च उंचाई जीवविज्ञान केंद्र में नियंत्रित परीक्षण किए गए।

Early Adopters

प्रारंभिक अपनाने वाले किसान

- The **first heeng seedling** in India was planted on **October 15, 2020**, in a **farmer's field at Kwaring village**, Lahaul Valley.
15 अक्टूबर 2020 को लाहौल घाटी के क्वारिंग गांव के एक किसान के खेत में भारत का पहला हींग पौधा लगाया गया।
- This marked the **official beginning** of **indigenous heeng cultivation** in India.
यह भारत में देशीय हींग की खेती की आधिकारिक शुरुआत थी।
- The next major step was planting heeng at **Janjheli in Mandi district** on **November 8, 2020**, expanding cultivation beyond Lahaul.
8 नवंबर 2020 को मंडी जिले के जंजैहली में हींग की खेती की गई, जिससे यह लाहौल से आगे अन्य क्षेत्रों में विस्तारित हुई।
- This marked the **first expansion** into the **mid-hill regions** of Himachal Pradesh.
यह हिमाचल प्रदेश के मध्य पहाड़ी क्षेत्रों में हींग की पहली विस्तार प्रक्रिया थी।
- **Demonstration plots and farmer training programmes** were then launched across **Lahaul & Spiti, Mandi, Kinnaur, Kullu, and Chamba**.
इसके बाद लाहौल-स्पीति, मंडी, किन्नौर, कुल्लू और चंबा में प्रदर्शनी खेत और किसान प्रशिक्षण कार्यक्रम शुरू किए गए।
- This was done in collaboration with the **State Agriculture Department**.
यह कार्य राज्य कृषि विभाग के सहयोग से किया गया।

Early adopter villages included:

प्रारंभिक अपनाने वाले गांवों में शामिल हैं:



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- **Lahaul & Spiti:** Madgran, Salgran, Beeling, Keylong
लाहौल-स्पीति: मदग्रां, सलग्रां, बीलिंग, केलांग
- **Mandi:** Janjehli, Majhakhal, Kataru, Ghayan, Karsog
मंडी: जंजैहली, मझाखल, कतारू, घायन, करसोग
- **Kinnaur:** Kafnoo, Hango, Maling, Reckong Peo, Kalpa, Moorang, Graming, Katgaon
किन्नौर: काफनू, हांगो, मालींग, रिकांगपिओ, कल्पा, मूरंग, ग्रामिंग, कटगांव
- **Kullu:** Bagsaid, Dhaugi-Sainj, Kotla-Banjar
कुल्लू: बगसैद, धौगी-सैज, कोटला-बंजार
- **Chamba:** Pangi, Deol, Bharmour, Mahala, Tooh
चंबा: पांगी, देओल, भरमौर, महला, टू

Heeng Germplasm Resource Centre

हींग जर्मप्लाज्म संसाधन केंद्र

- To institutionalise these efforts, the **Heeng Germplasm Resource Centre** was established at **IHBT Palampur**.
इन प्रयासों को संस्थागत रूप देने के लिए **IHBT पालमपुर** में हींग जर्मप्लाज्म संसाधन केंद्र की स्थापना की गई।
- It was **formally inaugurated on March 5, 2022**.
इसका औपचारिक उद्घाटन 5 मार्च 2022 को हुआ।
- The centre now serves as the **national hub for conservation, research, training, seed production, and plant propagation** of heeng.
यह केंद्र अब हींग के संरक्षण, अनुसंधान, प्रशिक्षण, बीज उत्पादन और पौध प्रसार का राष्ट्रीय केंद्र बन गया है।

May 28 Milestone

28 मई की उपलब्धि

- CSIR-IHBT researchers developed a **dedicated tissue culture unit** to support the **large-scale propagation** of heeng plants.
CSIR-IHBT के शोधकर्ताओं ने हींग पौधों के व्यापक स्तर पर प्रसार के लिए एक विशेष टिशू कल्चर यूनिट विकसित की।
- This specialised facility was **funded by the Himachal Pradesh Government**, strengthening the **scientific-state collaboration**.
यह विशेष सुविधा हिमाचल प्रदेश सरकार द्वारा वित्तपोषित थी, जिससे वैज्ञानिक संस्थानों और राज्य के बीच सहयोग को मजबूती मिली।
- Researchers used **ecological niche modelling** and **GPS-tagged data** along with **environmental parameters** to map **favourable cultivation zones**.

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शोधकर्ताओं ने इकोलॉजिकल निच मॉडलिंग, जीपीएस टैग डेटा और पर्यावरणीय मापदंडों का उपयोग करके अनुकूल खेती क्षेत्रों का मानचित्रण किया।

- The **first flowering and seed set** of heeng in **Palampur** was reported on **May 28, 2025**, by the **Council of Scientific and Industrial Research**.

28 मई 2025 को वैज्ञानिक और औद्योगिक अनुसंधान परिषद द्वारा पालमपुर में हींग का पहला पुष्पन और बीज निर्माण रिपोर्ट किया गया।

- This was a **major milestone** showing that **heeng can be successfully cultivated** in India.

यह एक महत्वपूर्ण उपलब्धि थी जो दर्शाती है कि भारत में हींग की सफलतापूर्वक खेती की जा सकती है।

- This achievement came **five years after the first sowing in 2020** in Himachal Pradesh, confirming the plant's **acclimatisation**.

यह उपलब्धि हिमाचल प्रदेश में 2020 में पहली बुवाई के लगभग पांच साल बाद हासिल हुई, जिससे पौधे की स्थानीय वातावरण के अनुकूलता की पुष्टि हुई।

- It also proves that heeng can **complete its reproductive cycle**, which is essential for **seed production, long-term domestication, and sustainable cultivation**.

यह यह भी सिद्ध करता है कि हींग अपना प्रजनन चक्र पूरा कर सकता है, जो बीज उत्पादन, दीर्घकालिक घरेलूकरण और सतत व्यावसायिक खेती के लिए आवश्यक है।

- Heeng usually grows in **cold deserts**, but its success at **Palampur (1,300 m above sea level)** marks a **breakthrough** in adaptability.

हींग आमतौर पर ठंडे रेगिस्तानों में उगता है, लेकिन समुद्र तल से 1,300 मीटर ऊंचे पालमपुर में इसकी सफलता अनुकूलन क्षमता में एक बड़ी सफलता है।

- This shows the **untapped potential** of heeng and the possibility of **discovering new agro-ecological zones**.

यह हींग की अप्रयुक्त संभावनाओं और नए कृषि-पर्यावरणीय क्षेत्रों की खोज की संभावना को दर्शाता है।

- Ultimately, this milestone will help India **reduce import dependence, increase farmers' income, and create a self-reliant supply chain** for heeng.

अंततः यह उपलब्धि भारत को आयात पर निर्भरता कम करने, किसानों की आय बढ़ाने और हींग के लिए आत्मनिर्भर आपूर्ति श्रृंखला बनाने में मदद करेगी।

- The success of heeng cultivation in India is the result of efforts by **CSIR-IHBT, ICAR-NBPGR, Himachal Pradesh government, State Agriculture Department**, and the region's **progressive farmers**.

भारत में हींग की खेती की सफलता का श्रेय **CSIR-IHBT, ICAR-NBPGR, हिमाचल प्रदेश सरकार, राज्य कृषि विभाग, और क्षेत्र के प्रगतिशील किसानों** को जाता है।



The team focused on what the *BBX32* gene does in the model plant *Arabidopsis thaliana*.
Representative photo. MARKUS SPISKE/UNSPLASH

When a seed sprouts in darkness its stem curves into a small hook shape that protects the delicate shoot tip as it pushes upward. The hook needs to stay closed until the seedling breaks through the soil and meets light

comprised Nevedha Ravindran, Kavuri Venkateswara Rao, and Sourav Datta of the Department of Biological Sciences at IISER Bhopal.

They found that ethylene turns *BBX32* on and that light protects *BBX32* from being destroyed. The role of *BBX32* itself is to keep the hook closed for longer. Without extra ethylene, *BBX32* mutants behave like normal plants whereas with high ethylene or a sand cover, the hook opens too soon.

BBX32 was found to work by raising the activity of the PIF3 protein, which switched on *HLS1*, which kept the hook closed. If PIF3 was missing, *BBX32* couldn't prevent the hook from opening.

In the sand test, only about a quarter of seedlings ever reached the surface compared to 40% of normal seedlings and 80% of over-expressors. Keeping the hook closed just a bit longer clearly helped a sprout survive its climb.

The researchers also worked out why *BBX32* accumulates only when it's most useful. In total darkness, an enzyme called COP1 latches onto *BBX32* and sends it to be degraded, keeping the hook flexible. Ethylene partially shields *BBX32*, but once the emerging seedling first senses daylight, COP1 activity drops, allowing the protein to build up on the concave side of the hook and hold it shut a little longer.

This finely tuned handshake offers a way to breed crops whose seedlings can breach denser soils – a trait that may be valuable as climate change brings heavier rains.

पौधों का हार्मोन) और प्रकाश संकेत मिलकर यह कैसे तय करते हैं कि हुक कब खुलेगा।

How does the first shoot rise safely through soil?

पहला अंकुर मिट्टी से सुरक्षित रूप से कैसे ऊपर उठता है?

Researchers at the Indian Institute of Science Education and Research (IISER), Bhopal found that a single protein helps plants time their first step from darkness into light.

भारतीय विज्ञान शिक्षा और अनुसंधान संस्थान (IISER), भोपाल के शोधकर्ताओं ने पाया कि एक एकल प्रोटीन पौधों को अंधकार से प्रकाश की ओर पहला कदम तय करने में मदद करता है।

• When a seed sprouts underground in **darkness**, its stem forms a **hook shape** to protect the **delicate shoot tip** as it grows upwards.

जब बीज अंधरे में जमीन के नीचे अंकुरित होता है, तो इसकी तना एक हुक के आकार में मुड़ जाती है जिससे नाजुक अंकुर सिरे की रक्षा होती है।

• The **hook remains closed** until the seedling reaches the surface and senses **light**.

जब तक पौधा सतह तक नहीं पहुंचता और प्रकाश का अनुभव नहीं करता, तब तक हुक बंद रहता है।

• The team studied how **ethylene** (a plant hormone) and **light** signals together determine when the hook should open.

टीम ने यह अध्ययन किया कि एथिलीन (एक

How does the first shoot rise safely through soil, towards daylight?

CS Paper III: Basic Science
Vasudevan Mukunth

Researchers from the **Indian Institute of Science Education and Research (IISER)**, Bhopal, have found that a single protein helps plants time their first step from darkness into light.

When a seed sprouts in darkness under the soil, its stem curves into a small hook shape that protects the delicate shoot tip as it pushes upward. The hook needs to stay 'closed' until the seedling breaks through the soil and meets light. In the study, the team wanted to know how two common signals – ethylene, a plant hormone that builds up underground, and light – work together to decide exactly when the hook opens.

The team focused on what a gene called *BBX32* really does in the model plant *Arabidopsis thaliana*. By comparing seedlings modified to lack *BBX32*, to churn out extra copies, to carry extra mutations, or to glow blue or green when the gene was activated or its protein moved around, the scientists could pinpoint how the protein made by the gene helps keep the hook closed.

The team also grew seedlings in darkness, red, blue, far-red light, and normal light, in plates with or without a compound that raises ethylene levels, and in thin layers of sand to imitate soil pressure.

They photographed three-day-old seedlings and used software to measure the hook angle as it opened over time. They also used genetic tools to track the performance of the *BBX32* gene and counted how many seedlings breached a sand layer and turned green.

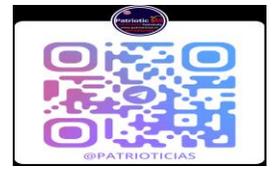
The findings were published in *New Phytologist* on May 28. The team



- The study focused on the gene **BBX32** in the model plant **Arabidopsis thaliana**.
अध्ययन ने अरबिडॉप्सिस थालियाना नामक मॉडल पौधे में **BBX32** जीन पर ध्यान केंद्रित किया।
- Scientists compared **BBX32-lacking**, **BBX32-overexpressing**, and **mutated seedlings**, and tracked where and when the **BBX32 protein** was active.
वैज्ञानिकों ने **BBX32** से रहित, अधिक **BBX32** उत्पादक, और परिवर्तित पौधों की तुलना की, और देखा कि **BBX32** प्रोटीन कहां और कब सक्रिय होता है।
- They also grew seedlings under **darkness**, **red**, **blue**, **far-red**, and **normal light**, and in presence or absence of **ethylene-increasing compound**.
उन्होंने पौधों को अंधेरे, लाल, नीले, फार-रेड, और सामान्य प्रकाश में उगाया, साथ ही एथिलीन बढ़ाने वाले यौगिक की उपस्थिति और अनुपस्थिति में भी।
- To mimic soil, seedlings were also grown under **thin sand layers** to simulate **soil pressure**.
मिट्टी के दबाव को दर्शाने के लिए पौधों को पतली रेत की परतों के नीचे भी उगाया गया।
- Photographs of **three-day-old seedlings** were taken, and **hook angle** was measured over time using software.
तीन दिन पुराने पौधों की तस्वीरें ली गईं और सॉफ्टवेयर की मदद से हुक का कोण समय के साथ मापा गया।
- Genetic tools were used to monitor **BBX32 gene activity** and to count how many seedlings could **break through the sand and turn green**.
BBX32 जीन की गतिविधि को ट्रैक करने और यह गिनने के लिए कि कितने पौधे रेत की परत को पार कर सके और हरे रंग में बदल सके, जेनेटिक उपकरणों का उपयोग किया गया।
- Findings were published in **New Phytologist** on **May 28** by researchers **Nevedha Ravindran**, **Kavuri Venkateswara Rao**, and **Sourav Datta** from **IISER Bhopal**.
यह निष्कर्ष 28 मई को **New Phytologist** में प्रकाशित हुए, और इसे **IISER भोपाल** के नेवेधा रविंद्रन, कवुरी वेंकटेश्वर राव, और सौरव दत्ता ने प्रस्तुत किया।
- They found that **ethylene activates BBX32**, and **light protects BBX32** from being destroyed.
उन्होंने पाया कि एथिलीन **BBX32** को सक्रिय करता है, और प्रकाश **BBX32** को नष्ट होने से बचाता है।
- The function of **BBX32** is to **keep the hook closed** for a longer time.
BBX32 का कार्य है हुक को अधिक समय तक बंद रखना।
- Without **extra ethylene**, **BBX32** mutants behaved like normal seedlings, but with **high ethylene** or **sand pressure**, the hook opened too early.
अतिरिक्त एथिलीन के बिना, **BBX32** उत्परिवर्तित पौधे सामान्य पौधों की तरह व्यवहार करते हैं, लेकिन अधिक एथिलीन या रेत का दबाव होने पर हुक बहुत जल्दी खुल जाता है।
- **BBX32** acts by increasing the activity of **PIF3 protein**, which then activates **HLS1**, responsible for **keeping the hook closed**.
BBX32, **PIF3** प्रोटीन की सक्रियता बढ़ाकर काम करता है, जो आगे **HLS1** को सक्रिय करता है, जो हुक को बंद रखने के लिए जिम्मेदार होता है।



- If **PIF3** is absent, **BBX32** cannot prevent the hook from opening.
यदि **PIF3** मौजूद नहीं होता, तो **BBX32** हुक को खुलने से नहीं रोक सकता।
- In the sand test, only **25% of BBX32-deficient seedlings** reached the surface, compared to **40% of normal** and **80% of over-expressors**.
रेत परीक्षण में, केवल **25% BBX32-कमी वाले पौधे** सतह तक पहुंचे, जबकि **40% सामान्य** और **80% अधिक उत्पादक पौधे** सफल हुए।
- This showed that keeping the hook closed **a little longer** helps seedlings **survive their climb**.
यह दर्शाता है कि **थोड़ा अधिक समय तक हुक को बंद रखने** से पौधों को **ऊपर चढ़ने में मदद** मिलती है।
- **BBX32** builds up **only when useful**, because in **total darkness**, an enzyme called **COP1** sends it for degradation.
BBX32 केवल तब ही एकत्रित होता है जब यह उपयोगी होता है, क्योंकि **पूर्ण अंधकार** में **COP1** नामक **एंजाइम** इसे नष्ट होने के लिए भेज देता है।
- **Ethylene** offers **partial protection** from **COP1**, and once **light is detected**, **COP1** activity drops, allowing **BBX32** to **accumulate** on one side of the hook.
एथिलीन सुरक्षा प्रदान करता है, और जब **प्रकाश का पता चलता है**, तब **COP1** की गतिविधि कम हो जाती है, जिससे **BBX32** हुक के एक ओर एकत्रित हो सकता है।
- This balance allows the hook to **stay closed** just long enough to ensure **safe emergence**.
यह संतुलन हुक को **इतनी देर तक बंद रखता है** कि वह **सुरक्षित रूप से बाहर निकल** सके।
- The study suggests ways to **breed crop varieties** that can **push through denser soils**, which may be important as **climate change** causes **heavier rainfall**.
यह अध्ययन सुझाव देता है कि **ऐसी फसलों की किस्में तैयार की जा सकती हैं** जो **घनी मिट्टी को पार कर सकें**, जो **जलवायु परिवर्तन** के कारण होने वाली **अधिक वर्षा** के समय उपयोगी हो सकता है।



GS Paper III: S&T

Bioremediation

3. Fourth virus type used in viral gene therapy – **Ans: Retroviral**

4. Technique that uses electric fields to destabilise cell membranes – **Ans:**

Electroporation

5. First GM animal to be commercialised –

Ans: Glo Fish

Visual: **Cartagena Protocol**

First contact: K.N. Viswanathan | Tamal Biswas | Anmol Agrawal | Deepak Gogiya

Answers to June 6 quiz:

Q1: True; Q2: Epinephrine; Q3:

Immunoglobulin E; Q4: Antihistamines; Q5:

Pollen, dust mites, etc.; Q6: Runny nose;

Q7: Anaphylaxis; Q8: Allergies can't be

cured but they can be managed; Q9:

Hypoallergenic products are designed to minimise risk of causing allergic reactions;

Q10: Skin prick tests, intradermal tests, and patch tests.

Visual: **Clemens von Pirquet**

First contact: K.N. Viswanathan | Drishti Dwivedi | Anmol Agrawal

Retroviral

वायरल जीन थेरेपी में उपयोग किया गया चौथा वायरस प्रकार – रेट्रोवायरल

- The **fourth type** of virus used in **viral gene therapy** is the **Retroviral** vector.

वायरल जीन थेरेपी में उपयोग किया जाने वाला चौथा वायरस प्रकार रेट्रोवायरल होता है।

- Technique that Uses Electric Fields to Destabilise Cell Membranes – Electroporation**

सेल झिल्लियों को अस्थिर करने के लिए विद्युत क्षेत्र का उपयोग करने वाली तकनीक – इलेक्ट्रोपोरेशन

- The technique known as **Electroporation** uses **electric fields** to temporarily open **cell membranes**, allowing **genetic material** to enter.

इलेक्ट्रोपोरेशन तकनीक में विद्युत क्षेत्र का उपयोग करके सेल झिल्लियों को अस्थायी रूप से खोला जाता है, जिससे आनुवंशिक पदार्थ अंदर प्रवेश कर सके।

A Wilderness Where Land Meets the Sea

एक ऐसा वन क्षेत्र जहाँ ज़मीन समुद्र से मिलती है

This phrase often refers to coastal ecosystems like mangroves, estuaries, and salt marshes, where terrestrial and marine life interact closely.

यह वाक्य आमतौर पर तटीय पारिस्थितिक तंत्रों जैसे कि मैंग्रोव, नदीमुख और लवणीय दलदल को दर्शाता है, जहाँ स्थलीय और समुद्री जीवन आपस में गहराई से जुड़ा होता है।

Bioremediation

बायोरिमीडिएशन (जैव उपचार)

- Bioremediation** is the use of **microorganisms** to remove or neutralize **pollutants** from a contaminated site.

बायोरिमीडिएशन एक ऐसी तकनीक है जिसमें सूक्ष्मजीवों का उपयोग करके प्रदूषकों को दूषित क्षेत्र से हटाया या निष्क्रिय किया जाता है।

- Fourth Virus Type Used in Viral Gene Therapy –**



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

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

CONTACT: 9971932488



First GM Animal to Be Commercialised – GloFish

व्यावसायिक रूप से पहला जीएम जानवर – ग्लो फिश

- The first genetically modified (GM) animal to be commercially sold was the **GloFish**, a fluorescent aquarium fish.
व्यावसायिक रूप से बेचा गया पहला जेनेटिकली मॉडिफाइड (GM) जानवर ग्लो फिश था, जो एक चमकदार एक्वेरियम मछली है।

Cartagena Protocol

कार्टाजेना प्रोटोकॉल

- **Cartagena Protocol on Biosafety**, an international agreement aimed at **ensuring the safe handling of living modified organisms (LMOs)**.
यह संभवतः जैव सुरक्षा पर कार्टाजेना प्रोटोकॉल को दर्शाता है, जो संशोधित जीवित जीवों (LMOs) के सुरक्षित संचालन को सुनिश्चित करने के लिए एक अंतरराष्ट्रीय समझौता है।



When triumph turned into tragedy

On June 3, Royal Challengers Bengaluru (RCB) claimed its maiden Indian Premier League (IPL) title at the Narendra Modi Stadium in Ahmedabad. When Virat Kohli announced that night that celebrations would extend to Bengaluru the next day, the atmosphere turned electric. Fans in Bengaluru celebrated with gusto the entire night, with firecrackers and full-throated chants and slogans. The wait for the title for 18 long years led to a burst of emotions and joy. What added to this excitement and the hurry to celebrate immediately was the imminent departure of Kohli the next day to London.

Unheeded advice

What was missing in this tremendous build-up to the victory parade was a calm and rational response from the administrative arm of the government. Amid the frenzy, according to reports, the Police Commissioner, B. Dayananda, rightly advised restraint and suggested that the celebrations be held a few days later. But the government allegedly did not listen to his advice. There is no clarity yet on why this was the case. It is well known that any State government would like to cash in on such an event for political gains. This government was clearly no different.

A Police Commissioner can directly talk to top hierarchy of the government. He should have got a clear 'yes' or 'no' from the Chief Minister. If the Chief Minister wanted to go ahead with the function, the police would have had no choice but to make the arrangements. What actually seems to have happened is that no one took a clear decision. Thus the celebrations in the crowded metropolis were ill-conceived and the messaging unclear, which became a recipe for disaster.

It was clear that the State government made the event look like a State function. Deputy Chief Minister D.K. Shivakumar went to



Yashovardhan Azad,

IPS officer (retd.), is former Central Information Commissioner; former Special Director, Intelligence Bureau; and former Secretary, Security, Government of India

The celebrations in Bengaluru were ill-conceived and the messaging unclear, which became a recipe for disaster

the airport to receive the champions. The government invited the team to Vidhana Soudha, the seat of State Legislature and Secretariat. There, Chief Minister Siddaramaiah and and Governor Thaaawarchand Gehlot congratulated the team. Another function was held for fans at the Chinnaswamy Stadium and Mr. Shivakumar was present at that event. The function at Vidhana Soudha gave the public adequate time to throng the stadium. More than 2 lakh people reportedly congregated at the gates, leading to the stampede that claimed 11 lives.

The police were clearly overwhelmed by the sheer numbers and the lack of medical and other facilities. According to reports, the passes or tickets that were to be given to fans to go inside the stadium were to be given near the gates. Communication completely collapsed. It was claimed that news of the stampede did not reach the venue of the function. The celebrations inside the stadium happened even after tragedy unfolded outside.

Where were the officials?

It was surprising that Mr. Dayananda was finally suspended. After all, he was the one who had apparently warned the government against holding the function at such short notice. After being out on the streets the entire night of June 3-4, the police force was hardly in a position to make arrangements for a massive victory parade of the RCB team. It is also surprising that the Chief Minister did not have the correct picture of the potential consequences of holding such massive celebrations the next day. The Intelligence chief is mandated to give such information and assessment beforehand. In this case, a massive crowd at the stadium was expected. What were the Home Secretary and Chief Secretary doing? They too must have been aware of the impending law-and-order situation surely?

And what about the head of the force – the Director General of Police? Should he not have taken a stand? So, is the Police Commissioner the fall guy? Support has been pouring in for him on social media for advising the government correctly. Not one Minister has been able to give a justifiable, logical argument as to why this happened or how it was allowed to happen.

We also need to ask why the government chose to be associated with this programme. This is not the Karnataka Ranji Team. It is a cricket league run by a private franchise. During the IPL, a couple of cricket teams owned by rich people select players through an auction. Money pours in from advertisers and sponsors because the public loves to see sixes flying all over the stadium. Yet the cricket mania seems to have gripped politicians too. By holding a State function and having politicians meet the players elevated this championship victory to a much higher status.

The RCB management and the Karnataka State Cricket Association clearly took advantage of the government's indecision and went ahead with their plans to glorify themselves and market their achievements. The police have said that they did not grant permission for a victory parade, but the RCB management took to social media on the morning of June 4 and announced a victory parade nevertheless. The State government ignored the advice of the key official and joined in the premature celebrations. Worse, instead of owning up to it and asking one of its own to resign, it suspended the Police Commissioner, holding him solely responsible for the tragedy.

As usual, the government has constituted a one-man judicial commission to probe the tragedy. As the commission goes about its work, the real issues – the unforgivable lapses in administration – will remain obfuscated and slowly get buried in the sands of time.

When Triumph Turned into Tragedy



जब जीत त्रासदी में बदल गई

RCB's Maiden Title and Bengaluru Celebrations

आरसीबी की पहली खिताबी जीत और बेंगलुरु में जश्न

- On June 3, Royal Challengers Bengaluru (RCB) won its maiden IPL title at the Narendra Modi Stadium in Ahmedabad.
3 जून को रॉयल चैलेंजर्स बेंगलुरु (आरसीबी) ने अहमदाबाद के नरेंद्र मोदी स्टेडियम में अपना पहला आईपीएल खिताब जीता।
- That night, Virat Kohli announced that celebrations would continue in Bengaluru the next day, creating an electric atmosphere.
उस रात विराट कोहली ने घोषणा की कि अगले दिन बेंगलुरु में जश्न जारी रहेगा, जिससे माहौल उत्साहपूर्ण हो गया।
- Fans celebrated the win with firecrackers, chants, and slogans throughout the night.
प्रशंसकों ने पूरी रात पटाखे, नारे और गगनभेदी जयघोष के साथ जश्न मनाया।
- After waiting 18 years for a title, emotions and excitement burst forth.
18 वर्षों के लंबे इंतजार के बाद, भावनाएं और उत्साह फूट पड़े।
- Adding to the urgency was Kohli's scheduled departure to London the next day.
इस जल्दबाजी की एक वजह यह भी थी कि कोहली अगले दिन लंदन के लिए रवाना होने वाले थे।
- Unheeded Advice from the Police
पुलिस की अनसुनी की गई सलाह
- Despite the excitement, there was a lack of calm and rational planning by the administration.
उत्साह के बावजूद, प्रशासन द्वारा शांत और तार्किक योजना की कमी देखी गई।
- Police Commissioner B. Dayananda reportedly advised that celebrations be delayed, but the government ignored this.
पुलिस आयुक्त बी. दयानंदा ने कथित तौर पर जश्न को कुछ दिन बाद आयोजित करने की सलाह दी थी, लेकिन सरकार ने इसे अनदेखा कर दिया।
- The reason for ignoring this advice is still unclear.
इस सलाह को अनदेखा करने का कारण अब तक स्पष्ट नहीं है।
- Governments often use such high-profile events for political gain, and this one was no exception.
सरकारें अक्सर ऐसे प्रमुख आयोजनों का राजनीतिक लाभ के लिए उपयोग करती हैं, और इस मामले में भी ऐसा ही हुआ।

Decision-Making Failure

निर्णय लेने में विफलता



- A **Police Commissioner** can directly speak to the **top leadership** of the government.
एक पुलिस आयुक्त सीधे सरकार के शीर्ष नेतृत्व से बात कर सकते हैं।
- He should have received a clear **'yes' or 'no'** from the **Chief Minister**.
उन्हें मुख्यमंत्री से स्पष्ट 'हाँ' या 'ना' मिलनी चाहिए थी।
- If the **Chief Minister** approved the event, the police would have had to proceed with the arrangements.
अगर मुख्यमंत्री ने आयोजन को मंजूरी दी होती, तो पुलिस को व्यवस्था करनी पड़ती।
- What seems to have happened is that **no one took a firm decision**, leading to **unclear planning**.
ऐसा प्रतीत होता है कि किसी ने ठोस निर्णय नहीं लिया, जिससे योजना अस्पष्ट रही।
- The result was a **poorly-conceived celebration** in a **densely populated city**, which became a **recipe for disaster**.
इसका नतीजा था कि भीड़भाड़ वाले शहर में गलत तरीके से सोचे गए जश्न ने त्रासदी को जन्म दे दिया।

Government Involvement and Political Optics

सरकारी भागीदारी और राजनीतिक दिखावा

- The **State government** treated the event like a **State function**.
राज्य सरकार ने इस कार्यक्रम को राजकीय समारोह की तरह पेश किया।
- **Deputy CM D.K. Shivakumar** went to the **airport** to receive the team.
उपमुख्यमंत्री डी.के. शिवकुमार टीम को एयरपोर्ट पर लेने पहुंचे।
- The team was invited to the **Vidhana Soudha**, where **Chief Minister Siddaramaiah** and **Governor Thawarchand Gehlot** congratulated them.
टीम को विधान सौधा में आमंत्रित किया गया, जहां मुख्यमंत्री सिद्धारमैया और राज्यपाल थावरचंद गहलोत ने उन्हें बधाई दी।
- Another function was held for fans at the **Chinnaswamy Stadium**, with **Shivakumar** also present.
एक और कार्यक्रम चिन्नास्वामी स्टेडियम में प्रशंसकों के लिए आयोजित किया गया, जिसमें शिवकुमार भी मौजूद थे।
- The **Vidhana Soudha** function gave people time to **rush to the stadium**, where **over 2 lakh** gathered at the gates.
विधान सौधा कार्यक्रम ने लोगों को स्टेडियम की ओर दौड़ने का समय दिया, जहां 2 लाख से अधिक लोग गेट पर जमा हो गए।
- This led to a **stampede**, resulting in the **death of 11 people**.
इससे भगदड़ मच गई, जिसमें 11 लोगों की जान चली गई।

Administrative Collapse and Misplaced Priorities

प्रशासनिक विफलता और गलत प्राथमिकताएं



- The **police were overwhelmed** due to the **massive crowd** and absence of **medical and emergency facilities**.
पुलिस पूरी तरह से दबाव में आ गई क्योंकि वहां भीड़ बहुत अधिक थी और चिकित्सा व आपात सुविधाएं नहीं थीं।
- According to reports, **passes or tickets** were to be distributed **near the stadium gates**, worsening the situation.
रिपोर्टों के अनुसार, पास या टिकट स्टेडियम के गेट के पास बांटे जाने थे, जिससे हालात और बिगड़ गए।
- **Communication completely failed**, and **news of the stampede** did not reach the function venue.
संचार व्यवस्था पूरी तरह विफल हो गई, और भगदड़ की खबर समारोह स्थल तक नहीं पहुंची।
- The **celebrations inside the stadium** continued even as **tragedy unfolded outside**.
जबकि बाहर त्रासदी हो रही थी, स्टेडियम के अंदर जश्न जारी रहा।

Where Were the Officials?

अधिकारी कहाँ थे?

- It was **shocking** that **Police Commissioner B. Dayananda** was eventually **suspended**, despite warning the government.
यह चौंकाने वाला था कि पुलिस आयुक्त बी. दयानंदा को अंततः निलंबित कर दिया गया, जबकि उन्होंने सरकार को चेताया था।
- The **police force**, having worked all night on **June 3–4**, was **unprepared** for such a **massive victory parade**.
3–4 जून की रातभर ड्यूटी करने के बाद पुलिस बल तैयार नहीं था इतनी बड़ी विजय रैली के लिए।
- It was surprising that the **Chief Minister** lacked awareness of the **potential consequences** of such large-scale celebrations.
यह आश्चर्यजनक था कि मुख्यमंत्री को इस तरह के बड़े समारोह के संभावित परिणामों का अंदाज़ा नहीं था।
- The **Intelligence Chief** is supposed to provide **prior warnings** and **assessments**.
खुफिया प्रमुख की जिम्मेदारी होती है कि वह पूर्व चेतावनी और आकलन दे।
- In this case, the arrival of a **massive crowd** at the stadium was **predictable**.
इस मामले में स्टेडियम में भीड़ का जमावड़ा होना पहले से अनुमानित था।
- What were the **Home Secretary** and **Chief Secretary** doing, given the evident **law-and-order threat**?
जब कानून-व्यवस्था का खतरा स्पष्ट था, तो गृह सचिव और मुख्य सचिव क्या कर रहे थे?
- Shouldn't the **Director General of Police** have taken a **stand** in this situation?
क्या इस स्थिति में पुलिस महानिदेशक को सख्त रुख नहीं अपनाना चाहिए था?
- Is the **Police Commissioner** being made the **scapegoat**?
क्या पुलिस आयुक्त को बलि का बकरा बनाया जा रहा है?
- There has been **strong public support** for Mr. Dayananda on **social media** for advising the government correctly.



सोशल मीडिया पर दयानंदा को लेकर जनता का समर्थन दिख रहा है क्योंकि उन्होंने सरकार को सही सलाह दी थी।

- No **Minister** has offered any **logical explanation** or **justification** for what happened. किसी भी मंत्री ने इस घटना के लिए कोई तर्कसंगत स्पष्टीकरण या वाजिब कारण नहीं दिया।

State's Role in a Private Event

निजी आयोजन में राज्य की भूमिका

- We must ask why the **government chose to associate** with this event. हमें पूछना चाहिए कि सरकार ने इस कार्यक्रम से जुड़ने का फैसला क्यों किया।
- This is not the **Karnataka Ranji team**, but a **private IPL franchise**. यह कर्नाटक रणजी टीम नहीं है, बल्कि एक निजी आईपीएल फ्रैंचाइज़ी है।
- IPL teams are **owned by rich individuals**, and players are selected through an **auction**. आईपीएल टीमों में धनाढ्य लोगों के स्वामित्व में होती हैं, और खिलाड़ी नीलामी के माध्यम से चुने जाते हैं।
- The event is **driven by money** from **advertisers and sponsors**, and public love for **big-hitting cricket**. यह आयोजन विज्ञापनदाताओं और प्रायोजकों के पैसे से चलता है और छक्कों की भरमार वाले क्रिकेट के प्रति जनता के प्रेम पर आधारित होता है।
- Yet **politicians** too seem to have been swept away by this **cricket mania**. फिर भी राजनीतिज्ञ भी इस क्रिकेट उन्माद में बहते हुए नजर आए।
- By organizing a **State-level function**, politicians elevated the franchise win to a **national celebration**. राजकीय स्तर का कार्यक्रम आयोजित करके, नेताओं ने इस फ्रैंचाइज़ी की जीत को एक राष्ट्रीय उत्सव बना दिया।

RCB and KSCA Took Advantage

आरसीबी और केएससीए ने उठाया फायदा

- **RCB management** and **Karnataka State Cricket Association (KSCA)** exploited the government's **indecision**. आरसीबी प्रबंधन और कर्नाटक राज्य क्रिकेट संघ (केएससीए) ने सरकार की दुविधा का पूरा फायदा उठाया।
- They went ahead with their **plans for self-promotion** and **marketing**. उन्होंने अपने प्रचार और मार्केटिंग की योजनाओं को आगे बढ़ा दिया।
- Police said they did **not grant permission** for a victory parade. पुलिस ने कहा कि उन्होंने विजय रैली की अनुमति नहीं दी थी।



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

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

CONTACT: 9971932488



- Yet, on **June 4 morning**, RCB management **announced a victory parade on social media**.
फिर भी, 4 जून की सुबह, आरसीबी प्रबंधन ने सोशल मीडिया पर विजय रैली की घोषणा कर दी।
- The **State government** ignored the **official advice** and joined in the **premature celebrations**.
राज्य सरकार ने अधिकारियों की सलाह को नजरअंदाज़ कर दिया और असमय उत्सवों में शामिल हो गई।
- Instead of **accepting responsibility** or asking someone to **resign**, the government **suspended the Police Commissioner**.
जवाबदेही स्वीकारने या किसी से इस्तीफा लेने के बजाय, सरकार ने पुलिस आयुक्त को निलंबित कर दिया।

Judicial Probe and Fading Accountability

न्यायिक जांच और धुंधली होती जवाबदेही

- As usual, the government has formed a **one-man judicial commission** to investigate the tragedy.
हमेशा की तरह, सरकार ने इस त्रासदी की जांच के लिए एक सदस्यीय न्यायिक आयोग गठित कर दिया है।
- As the commission proceeds, the **real administrative failures** may be **obscured and forgotten over time**.
जैसे-जैसे आयोग आगे बढ़ेगा, वास्तविक प्रशासनिक चूकें शायद धुंधली हो जाएंगी और समय के साथ भुला दी जाएंगी।



How drones are the new face of warfare

The ubiquitous drone is rapidly becoming the weapon of choice in active combat, serving as a force multiplier to achieve strategic objectives while blurring the distinctions between military-grade and commercial technologies

ISS Paper III: S&T

WORLD INSIGHT

Pushan Das

India's Operation Sindoor in the wake of the Pahalgam terror attack has marked a notable shift in the country's adoption of **Unmanned Aerial Vehicles (UAVs)** in combat. In combination with standoff weapons, India's use of UAVs in active combat represents a tactical shift in military doctrine – part of a global playbook. **Ukraine's Operation Spider Web** also marks a turning point in how low-cost, improvised unmanned systems can be employed with strategic impact.

Global precedents

The ubiquitous drone is rapidly becoming the weapon of choice serving as a **force multiplier** to achieve strategic objectives while **blurring the distinctions between military-grade and commercial technologies**. Building resilience in drone warfare requires India to build modularity and redundancy in mass produced drones, and nurture a responsive defence production base.

The Nagorno-Karabakh War in 2020 provided one of the first demonstrations of how drones can change the nature of aerial warfare with new capabilities. Azerbaijan's success hinged on the use of loitering munitions or kamikaze drones, like the Israeli-made Harop drones, in destroying air defences.

Additionally, the war in Ukraine has emerged as a real-world laboratory for drone technology, with rapid innovation and counter innovation cycles defining modern warfare. However, Ukraine's most obvious innovation was the country's ability to produce and deploy a wide variety of drones. In Myanmar also, rebel groups are deploying 3D-printed drones against a better-equipped military, leveling the playing field.

As India continues to reform and modernise its military, learning and applying the right lessons from recent conflicts, including Operation Sindoor, is key. Among New Delhi's adversaries, China already has a large and diverse fleet of unmanned systems, which could provide it with an edge in a potential war along the Line of Actual Control (LAC). Pakistan too has bolstered its unmanned weapons capabilities through collaborations with China and Türkiye.

Drone resilience

Drones are vulnerable to many countermeasures such as electronic warfare, guns and air defences. The impact of drones, therefore, depends on its ability to evade or overwhelm defences against them.

Countermeasures against drones in the form of air defences come with limitations and vulnerabilities and can be defeated through a range of technologies and tactics, making innovation and counter-innovation a critical part of drone warfare. India's counter-drone systems include multilayered sensors and weapon systems, as well as indigenously developed soft- and hard-kill counter-UAV systems. Both played a crucial role in thwarting Pakistan's drone and missile attacks in the recent flareup of hostilities.

To evade such systems, drones can, with advanced navigation, be made to adjust flights. Similarly, Artificial Intelligence (AI) and frequency hopping can be used to overcome jamming and spoofing autonomously. For instance, Ukraine has incorporated machine vision algorithms and pre-loaded terrain data to navigate complex routes in order to avoid



New modes of combat: An Indian soldier pictured with a drone at the Akhnoor sector near the Line of Control (LoC) in Jammu on May 19, AFP

air defences. By operating at low altitudes, drones can exploit gaps in radar coverage and reduce the likelihood of detection.

Some drones are also designed with electronic warfare features, allowing them to jam or spoof enemy radar and communication systems. These capabilities enhance their survivability and effectiveness in contested environments. Ukrainian developers came up with a simpler solution – tethering a drone to a fibre-optic cable for guidance.

Alternatively, employing a large number of drones and decoys to fly in mass can overwhelm and confuse air defence and surveillance systems. Russia's drone campaign, for instance, makes use of Shahed drones to saturate Ukrainian air defences. It causes dilemmas on the rate of attrition of limited air defence assets, and creates openings for precision strikes.

India's air defence systems tied together under the Integrated Air Command and Control System (IACCS) performed well against numerous Pakistani drones and missile attacks. Boosting procurement and domestic production of munition stocks for its air defence systems (S-400, MR-SAM, Akash, etc) will be key to building magazine depth in any protracted conflict. With regard to the offence debate, given the low survivability rate of current drones, India will need to invest in building volume in its drone and loitering munitions toolkit.

The military-commercial crossover Ukraine's Operation Spider Web demonstrated that low-cost UAV's combined with accessible technologies and innovative employment strategies can have strategic impact deep into enemy lines. The operation targeted four air bases inflicting damage to Russia's long-range bomber fleet.

The fact that almost any drone can be used and modified to become an offensive weapon, coupled with the widespread use and accessibility of drones, has blurred the distinctions between

military-grade and commercial drone systems. Moreover, the indiscriminate use of the term "drones" obscures distinctions in capabilities, intended uses and public perception.

While advanced military-grade drones offer greater capabilities, they also come with higher costs and logistical challenges. Easily available commercial systems, open-source software, and modular engineering have lowered the entry barrier for the adoption of drone technologies. There is a trade-off between adding capabilities to drones and an increase in cost, size, and complexity. For example, drones such as China's Wing Loong, Iran's Shahed, or Turkey's TB2 incorporate low-cost and dual-use technologies.

Innovation in technology has not been the only novelty in drone use, for manufacturing has also changed. 3D printing is rapidly becoming a key multiplier. For instance, in conflict zones such as Ukraine (Titan Falcon) and Myanmar (The Liberator MK1 and MK2) 3D printers provide alternate sources to mitigate manufacturing shortages. The adaptive employment of off-the-shelf drone technologies by non-state actors is providing states with valuable lessons in asymmetric and low cost aerial capabilities. For example, the U.S. and the U.K. are exploring commercial 3D printing ventures to mass produce drones at scale in order to manufacture bespoke components of weapons systems, thereby bypassing complex, expensive and often slow moving logistics supply chains.

India needs to prepare for the inevitability of easily weaponised commercial drones being used by terrorist organisations and non-state actors against its strategic and civil infrastructure. Counter-drone systems and tactics cannot be the purview of the military alone and should also be prioritised by internal security agencies.

Implications for India

The widespread adoption of drones in warfare signifies a shift in military strategy and operations. By deploying standoff

weapons along with drones during Operation Sindoor, India has introduced a layer of strategic ambiguity – one that expands its toolkit vis-a-vis Pakistan in the space between conventional and nuclear. Meanwhile, China's export of drones, among other platforms, to Pakistan adds a layer of complexity to India's security challenge.

China's own drone capabilities are rapidly advancing as significant investments have been made in building up a diverse fleet of drones, including long-range systems like the Soaring Dragon, BZK-005, TB-001, and Wing Loong II alongside affordable kamikaze drones, like the CH-901, designed to overwhelm enemy defences through swarm tactics. This poses a significant and evolving military threat to India along the LAC.

For India, drones complement other weapons and can partially offset capability gaps as part of an asymmetric defence strategy vis-a-vis China. However, India needs to view the wars in Ukraine, Nagorno-Karabakh, and Myanmar as cautionary tales for the need to mass produce an affordable mix of drones.

Of the many lessons from the ongoing war in Ukraine, one stands out – the importance of a defence industrial base that can keep pace with the high-intensity of modern conflict. To fully realise India's drone potential, the Ministry of Defence (MoD) needs to support the defence industrial base to be able to scale production and create surge capacity. The ability to reconstitute and quickly replace drones, loitering munitions after losses, and surface-to-air missiles will make India more resilient.

India's anaemic procurement of systems has generally discouraged industry from ramping up its production capacity.

Addressing underlying structural issues that lead to uncertain demand is key in order to incentivise industry to ramp up production capacity and innovation in defence.

Pushan Das is a strategic affairs analyst who writes on defence and foreign policy.

THE GIST

▼ The war in Ukraine has emerged as a real-world laboratory for drone technology, with rapid innovation and counter innovation cycles defining modern warfare.

▼ For India, drones complement other weapons and can partially offset capability gaps as part of an asymmetric defence strategy vis-a-vis China.

▼ Of the many lessons from the ongoing war in Ukraine, one stands out – the importance of a defence industrial base that can keep pace with the high-intensity of modern conflict.

How drones are the new face of warfare



युद्ध का नया चेहरा कैसे बन रहे हैं ड्रोन

India's Operation Sindoor, launched after the Pahalgam terror attack, signals a major shift in the country's use of Unmanned Aerial Vehicles (UAVs) in combat.

पाहलगाम आतंकवादी हमले के बाद शुरू किए गए ऑपरेशन सिंदूर ने भारत में मानवरहित हवाई वाहन (यूएवी) के सैन्य उपयोग में एक बड़ा बदलाव दिखाया है।

- Combined with **standoff weapons**, UAVs represent a change in **military doctrine** and are becoming part of a **global strategy**.
स्टैंडऑफ हथियारों के साथ मिलकर, यूएवी अब सैन्य सिद्धांत में बदलाव और वैश्विक रणनीति का हिस्सा बनते जा रहे हैं।
- Ukraine's **Operation Spider Web** shows how even **low-cost**, improvised drones can create **strategic impact**.
यूक्रेन का ऑपरेशन स्पाइडर वेब दर्शाता है कि कैसे कम लागत वाले और अस्थायी रूप से तैयार किए गए ड्रोन भी रणनीतिक प्रभाव डाल सकते हैं।

Global precedents and innovations in drone warfare

वैश्विक मिसालें और ड्रोन युद्ध में नवाचार

- Drones are now a **weapon of choice**, acting as **force multipliers**, and blurring lines between **military-grade** and **commercial technologies**.
ड्रोन अब एक पसंदीदा हथियार बन गए हैं, जो शक्ति गुणक के रूप में कार्य करते हैं और सैन्य-ग्रेड और व्यावसायिक तकनीकों के बीच की सीमाओं को मिटा रहे हैं।
- To be resilient in drone warfare, India must build **modularity**, **redundancy**, and a **responsive defence production base**.
ड्रोन युद्ध में सक्षम बनने के लिए भारत को माँड्यूलरिटी, पुनरावृत्ति और उत्तरदायी रक्षा उत्पादन आधार तैयार करना होगा।
- The **2020 Nagorno-Karabakh War** showed how **loitering munitions** like **Harop drones** can decisively destroy **air defences**.
2020 के नागोर्नो-काराबाख युद्ध ने दिखाया कि कैसे लोइटरिंग गोला-बारूद जैसे हरोप ड्रोन प्रभावी रूप से हवाई सुरक्षा प्रणालियों को नष्ट कर सकते हैं।
- In **Ukraine**, drone warfare is rapidly evolving with **quick innovation** and **counter-innovation cycles**, especially with **variety and scale** of drones.
यूक्रेन में ड्रोन युद्ध तेजी से विकसित हो रहा है, जिसमें तेजी से नवाचार और प्रति-नवाचार हो रहे हैं, खासकर ड्रोन की विविधता और पैमाने के कारण।
- In **Myanmar**, rebel groups use **3D-printed drones** against a more powerful military, reducing the **technology gap**.



म्यांमार में विद्रोही समूह 3D प्रिंटेड ड्रोन का उपयोग शक्तिशाली सेना के खिलाफ कर रहे हैं, जिससे प्रौद्योगिकी की खाई कम हो रही है।

- India must learn from **recent conflicts** like Operation Sindoor as it **modernises its military**.

भारत को ऑपरेशन सिंदूर जैसे हालिया संघर्षों से सीख लेनी चाहिए क्योंकि यह अपनी सेना का आधुनिकीकरण कर रहा है।

- **China** possesses a **large and diverse fleet** of unmanned systems, giving it potential advantage along the **Line of Actual Control (LAC)**.

चीन के पास मानवरहित प्रणालियों का बड़ा और विविध बेड़ा है, जो उसे वास्तविक नियंत्रण रेखा (LAC) पर बढ़त दे सकता है।

- **Pakistan** is enhancing its drone capabilities through partnerships with **China** and **Türkiye**.

पाकिस्तान अपने ड्रोन क्षमता को चीन और तुर्किये के सहयोग से बढ़ा रहा है।

Drone resilience and countermeasures

ड्रोन की लचीलापन क्षमता और जवाबी उपाय

- Drones are vulnerable to **electronic warfare, guns, and air defences**; their impact depends on **evasion or overwhelming tactics**.

ड्रोन इलेक्ट्रॉनिक युद्ध, बंदूकें, और हवाई सुरक्षा के लिए संवेदनशील होते हैं; उनका प्रभाव बचाव या भारी हमलों की रणनीति पर निर्भर करता है।

- Traditional **air defences** have limitations and can be overcome through **technological and tactical innovation**.

पारंपरिक हवाई सुरक्षा प्रणाली में सीमाएं होती हैं और इन्हें तकनीकी और रणनीतिक नवाचारों से हराया जा सकता है।

- India has developed **indigenous soft- and hard-kill** counter-UAV systems with **multi-layered sensors and weapons**, effectively used against **Pakistani drone and missile attacks**.

भारत ने स्वदेशी सॉफ्ट और हार्ड-किल यूएवी विरोधी प्रणाली विकसित की है, जिसमें मल्टीलेयर्ड सेंसर और हथियार प्रणाली शामिल हैं, जो पाकिस्तानी ड्रोन और मिसाइल हमलों में कारगर साबित हुई हैं।

- Drones with **advanced navigation, AI, and frequency hopping** can autonomously avoid **jamming and spoofing**.

उन्नत नेविगेशन, AI, और फ्रीक्वेंसी हॉपिंग से लैस ड्रोन जैमिंग और स्पूफिंग से स्वतः बच सकते हैं।

- Ukraine uses **machine vision algorithms** and **pre-loaded terrain data** to evade **air defences** by flying **low and complex routes**.

यूक्रेन मशीन विजन एल्गोरिद्म और पूर्व-लोडेड इलाके के डेटा का उपयोग करके कम ऊंचाई पर और जटिल मार्गों से उड़कर हवाई सुरक्षा से बचाव करता है।

- Some drones come with **electronic warfare capabilities**, enabling them to **jam or spoof** enemy radar and communication systems.



कुछ ड्रोन में इलेक्ट्रॉनिक युद्ध क्षमताएं होती हैं, जो दुश्मन के रडार और संचार प्रणालियों को जैम या स्फूफ कर सकती हैं।

- Ukraine also developed **tethered drones** guided via **fibre-optic cable** to reduce vulnerability.
यूक्रेन ने फाइबर-ऑप्टिक केबल से संचालित बांधे गए ड्रोन भी विकसित किए हैं ताकि कमजोरी को कम किया जा सके।
- Using **large numbers of drones and decoys** together can **overwhelm and confuse** air defences, as seen in **Russia's Shahed drone campaign**.
रूस के शाहेद ड्रोन अभियान में देखा गया कि अधिक संख्या में ड्रोन और भ्रमित करने वाले उपकरणों का एक साथ उपयोग हवाई सुरक्षा को भ्रमित और व्यस्त कर सकता है।

India's air defence and drone strategy

भारत की वायु रक्षा और ड्रोन रणनीति

- India's **Integrated Air Command and Control System (IACCS)** has performed well against **Pakistani drones and missiles**.
भारत की एकीकृत वायु कमान और नियंत्रण प्रणाली (IACCS) ने पाकिस्तानी ड्रोन और मिसाइलों के खिलाफ अच्छा प्रदर्शन किया है।
- India must **boost procurement and domestic production** of munitions for systems like **S-400, MR-SAM, and Akash** to prepare for **protracted conflict**.
भारत को S-400, MR-SAM, और आकाश जैसी प्रणालियों के लिए गोलाबारूद की खरीद और घरेलू उत्पादन को बढ़ाना होगा ताकि लंबे संघर्ष के लिए तैयारी की जा सके।
- Given the **low survivability** of current drones, India needs to **increase the number** of drones and **loitering munitions** in its arsenal.
मौजूदा ड्रोन की कम जीवित रहने की क्षमता को देखते हुए भारत को अपने ड्रोन और लोइटरिंग गोलाबारूद की संख्या बढ़ाने की आवश्यकता है।

The Military-Commercial Crossover

सैन्य और व्यावसायिक तकनीक का मेल

- Ukraine's **Operation Spider Web** showed that **low-cost UAVs**, combined with **accessible technologies** and innovative strategies, can have **strategic impact** deep into enemy territory.
यूक्रेन के ऑपरेशन स्पाइडर वेब ने दिखाया कि कम लागत वाले UAVs, सुलभ तकनीक और नवाचार रणनीतियों के साथ मिलकर दुश्मन की सीमा के भीतर रणनीतिक प्रभाव डाल सकते हैं।
- The operation targeted **four air bases**, damaging **Russia's long-range bomber fleet**.
इस ऑपरेशन ने चार एयरबेस को निशाना बनाया और रूस के लंबी दूरी के बमवर्षक बेड़े को नुकसान पहुंचाया।



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

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

CONTACT: 9971932488



- Almost **any drone** can be **modified** for offensive use, and their **widespread availability** blurs the line between **military-grade** and **commercial drones**.
लगभग किसी भी ड्रोन को आक्रामक हथियार के रूप में बदला जा सकता है, और उनकी व्यापक उपलब्धता ने सैन्य और व्यावसायिक ड्रोन के बीच की सीमा को धुंधला कर दिया है।
- The use of the generic term “**drones**” hides differences in **capabilities, intended uses, and public perception**.
“ड्रोन” शब्द का सामान्य उपयोग उनके क्षमता, उद्देश्य और सार्वजनिक धारणा में अंतर को छुपा देता है।
- **Advanced military drones** offer better capabilities but at **higher costs** and with **logistical complexities**.
उन्नत सैन्य ड्रोन बेहतर क्षमताएँ प्रदान करते हैं लेकिन उनकी लागत अधिक होती है और लॉजिस्टिक जटिलताएँ होती हैं।
- Easily available **commercial systems, open-source software, and modular engineering** have **lowered the entry barrier** to drone use.
आसानी से उपलब्ध व्यावसायिक सिस्टम, ओपन-सोर्स सॉफ्टवेयर, और मॉड्यूलर इंजीनियरिंग ने ड्रोन उपयोग के लिए प्रवेश बाधा को कम कर दिया है।
- There is a trade-off between **increasing drone capability** and the **rising cost, size, and complexity**.
ड्रोन की क्षमता बढ़ाने और लागत, आकार और जटिलता के बीच संतुलन बनाना जरूरी है।
- Drones like **China’s Wing Loong, Iran’s Shahed, and Turkey’s TB-2** use **low-cost and dual-use technologies**.
चीन का विंग लूंग, ईरान का शाहेद और तुर्की का TB-2 जैसे ड्रोन कम लागत और दोहरी-उपयोग वाली तकनीक का उपयोग करते हैं।

Innovation in Manufacturing

निर्माण में नवाचार

- **3D printing** is becoming a **key multiplier** in drone manufacturing.
ड्रोन निर्माण में **3D प्रिंटिंग** एक महत्वपूर्ण कारक बनती जा रही है।
- In conflict zones like **Ukraine** (Titan Falcon) and **Myanmar** (Liberator MK1, MK2), **3D printers** are helping overcome **manufacturing shortages**.
यूक्रेन (टाइटन फाल्कन) और म्यांमार (लिबरेटर MK1, MK2) जैसे संघर्ष क्षेत्रों में **3D प्रिंटर** निर्माण की कमी को पूरा करने में मदद कर रहे हैं।
- The adaptive use of **off-the-shelf drone technologies** by **non-state actors** offers states **lessons in asymmetric and low-cost air power**.
गैर-राज्य समूहों द्वारा सामान्य ड्रोन तकनीक का लचीला उपयोग देशों को असममित और कम लागत वाली हवाई शक्ति के बारे में सबक दे रहा है।
- The **U.S.** and **U.K.** are exploring **commercial 3D printing** to mass-produce drones and **custom weapon components**, bypassing traditional logistics chains.



अमेरिका और ब्रिटेन ड्रोन और हथियारों के विशेष हिस्सों को बड़े पैमाने पर बनाने के लिए व्यावसायिक 3D प्रिंटिंग की संभावनाएं तलाश रहे हैं, जिससे पारंपरिक लॉजिस्टिक चैन को दरकिनार किया जा सके।

Security Concerns for India

भारत के लिए सुरक्षा संबंधी चिंताएँ

- India must prepare for **commercial drones** being weaponised by **terrorist organisations** and **non-state actors** against **strategic and civilian targets**.
भारत को इस बात के लिए तैयार रहना होगा कि आतंकी संगठन और गैर-राज्य तत्व व्यावसायिक ड्रोन को रणनीतिक और नागरिक लक्ष्यों के खिलाफ हथियार बना सकते हैं।
- Counter-drone systems** should not be left only to the **military**, but must also be prioritised by **internal security agencies**.
ड्रोन रोधी प्रणालियाँ केवल सैन्य बलों की जिम्मेदारी नहीं होनी चाहिए, बल्कि आंतरिक सुरक्षा एजेंसियों द्वारा भी इन्हें प्राथमिकता दी जानी चाहिए।

Implications for India

भारत के लिए निहितार्थ

- The growing use of **drones in warfare** represents a **shift in military strategy**.
युद्ध में ड्रोन के बढ़ते उपयोग से सैन्य रणनीति में बदलाव दिखता है।
- During **Operation Sindoor**, India used **stand-off weapons** along with drones, introducing **strategic ambiguity** in its posture toward Pakistan.
ऑपरेशन सिंदूर के दौरान भारत ने ड्रोन के साथ स्टैंड-ऑफ हथियारों का प्रयोग किया, जिससे पाकिस्तान के प्रति रणनीतिक अस्पष्टता पैदा हुई।
- China's export of drones to Pakistan** adds **complexity** to India's security calculations.
पाकिस्तान को चीन द्वारा ड्रोन निर्यात करने से भारत की सुरक्षा चुनौतियों में जटिलता जुड़ जाती है।
- China** is rapidly advancing its **drone fleet**, including systems like **Soaring Dragon**, **BZK-005**, **TB-001**, **Wing Loong II**, and **CH-901**.
चीन अपनी ड्रोन क्षमताओं को तेजी से बढ़ा रहा है, जिनमें सोअरिंग ड्रैगन, BZK-005, TB-001, विंग लूंग II, और CH-901 जैसे ड्रोन शामिल हैं।
- These include **long-range systems** and **kamikaze drones** designed for **swarm attacks**, posing a significant threat along the **LAC**.
इनमें लंबी दूरी की प्रणालियाँ और स्वार्म हमले के लिए डिज़ाइन किए गए कामिकेज़ ड्रोन शामिल हैं, जो एलएसी पर भारत के लिए गंभीर खतरा हैं।
- For India, drones can help **offset gaps** in capability and enable an **asymmetric defence strategy** against China.
भारत के लिए ड्रोन क्षमता की खामियों को पूरा करने और असममित रक्षा रणनीति को अपनाने में मदद कर सकते हैं।



- **Ukraine, Nagorno-Karabakh, and Myanmar highlight the need for affordable mass production of a diverse range of drones.**
यूक्रेन, नागोर्नो-काराबाख, और म्यांमार यह दिखाते हैं कि सस्ती और विविध ड्रोन निर्माण की जरूरत है।
- **The key lesson from Ukraine is the need for a robust defence industrial base that can match the pace of high-intensity warfare.**
यूक्रेन से सबसे बड़ा सबक यह है कि तेज गति वाले युद्ध के लिए मजबूत रक्षा औद्योगिक आधार जरूरी है।
- **To realise drone potential, the Ministry of Defence (MoD) must support scaling up production and building surge capacity.**
ड्रोन की पूरी क्षमता प्राप्त करने के लिए रक्षा मंत्रालय (MoD) को उत्पादन बढ़ाने और आपातकालीन क्षमताएं विकसित करने का सहारा देना होगा।
- **India must be able to reconstitute and replace drones, loitering munitions, and surface-to-air missiles quickly after losses.**
भारत को नुकसान के बाद ड्रोन, लोइटरिंग म्यूनिशन, और सतह से हवा में मार करने वाली मिसाइलों को तेजी से फिर से तैयार और बदलने में सक्षम होना चाहिए।
- **Weak procurement systems discourage industrial production capacity expansion.**
कमजोर खरीद प्रणाली उद्योग को उत्पादन क्षमता बढ़ाने से रोकती है।
- **Solving structural issues and ensuring predictable demand is essential to incentivise defence industry innovation.**
संरचनात्मक समस्याओं को हल करना और स्थिर मांग सुनिश्चित करना रक्षा उद्योग में नवाचार को प्रोत्साहित करने के लिए आवश्यक है।



ABSTRACT



New methods: Garnierite, a greenish nickel ore, on the bank of a river in Indonesia on April 16. AFP

PATRIOTIC



How extracting and producing nickel can be made more sustainable

Nickel is an important metal used in several clean energy technologies, especially electric vehicles. The demand for it is expected to surpass six million tonnes a year by 2040. However, producing just one tonne of nickel can result in more than 20 tonnes of carbon dioxide emissions

ISS Paper III: Resources

Hirra Azmat

Manzoor, U., Mujica Roncery, L., Raabe, D. et al, 'Sustainable nickel enabled by hydrogen-based reduction', *Nature* 641, 365-373 (2025).
doi.org/10.1038/s41586-025-08901-7

Nickel powers everything, from gadgets to green technologies. But getting it currently involves a far from green, in fact, a dirty process. However, a new study has revealed what its authors have said is a game-changing and sustainable method to extract nickel from low-grade ores using hydrogen plasma instead of carbon. It's a one-step process free of carbon dioxide that reportedly saves both energy and time.

Nickel is an important metal used in several clean energy technologies, especially Electric Vehicles (EVs), and the demand for it is expected to surpass six million tonnes a year by 2040. While EVs are seen as a cleaner alternative to traditional fossil fuel-powered vehicles, there are hidden environmental costs associated with their production, especially in the manufacturing of lithium-ion batteries.

A major component in these batteries is nickel and its extraction is highly carbon-intensive. Producing just one tonne of nickel can result in more than 20 tonnes of carbon dioxide emissions. So while EVs reduce emissions during operation, the process of sourcing materials like nickel simply shifts the pollution burden from the transportation sector to the mining and processing sector, among others.

The methodology

The study, published in *Nature* on April 30, was conducted by researchers at the Max Planck Institute for Sustainable

Materials in Düsseldorf, Germany. In the study, the researchers bypassed the traditional multistep process to extract nickel – which includes calcination, smelting, reduction, and refining – and developed a single metallurgical step conducted in one furnace. "The proposed method has the potential to be up to about 18% more energy efficient while cutting direct carbon dioxide emissions by up to 84% compared with the current practice," the paper wrote.

Ubaid Manzoor, a researcher at the Max Planck Institute and lead author of the study, said, "Traditional nickel extraction is multi-step, energy-intensive and relies on carbon. Nickel oxide is heated with carbon, which removes the oxygen, producing pure nickel, along with carbon dioxide emissions." The researchers have proposed replacing carbon with hydrogen as the reducing agent and using electricity as the energy source, specifically through an electric arc furnace.

"In our method, we use hydrogen plasma. Hydrogen gas, when subjected to high-energy electrons in an electric arc, splits into high-energy ions, entering a plasma state – the extremely hot and reactive fourth state of matter. It is distinct from solids, liquids, and gases. This hydrogen plasma rapidly reduces the metal oxides. From a thermodynamic perspective, the process is not only cleaner but significantly faster," Mr. Manzoor said. He added that the method is kinetically superior – meaning the chemical reaction is more energetically favoured – thanks to the highly reactive and unstable nature of plasma.

"The end product of hydrogen reacting with oxygen is water, not carbon dioxide. Therefore, the entire process is carbon-free, using only electricity, hydrogen, and yielding water as a byproduct," he added.

Enabling sustainable production

The study focused on laterite ores, a type of soil-rich rocks that contain metals like nickel. They form in hot, tropical regions when rain and heat break down rocks over time, leaving behind metal-rich layers. They are abundant but tough to process. "While sulphide ores are found deeper underground and are easier to process, they're rapidly depleting. The new method used in the study works efficiently on laterites, making it key to future nickel production," Mr. Manzoor said.

India has substantial nickel laterite reserves, particularly in Odisha's Sukinda region. "These deposits, containing 0.4-0.9% nickel as nickeliferous limonite in chromite mine overburden, are often overlooked because traditional methods require higher-grade ores. But [the team's method] excels at extracting value from these lower-grade resources," Dierk Raabe, professor and director of the Max Planck Institute and co-author of the study, said. He added that the technology could play a major role as the demand for sustainably produced materials continues to grow.

"Without such innovations, the sustainability revolution – whether in electrification, renewables, or green infrastructure – risks merely shifting the carbon dioxide and energy burdens from one sector to another. In other words, we might build a 'greener' world through EVs, solar panels, and high-performance magnets while still relying on carbon-intensive methods to mine and refine the critical metals ... that make all of it possible," he said.

The inescapable demand for nickel in multiple industries and its traditionally carbon-intensive production pose "a particular challenge for countries like India, where rapid industrial growth is essential for economic development.

India must simultaneously meet ambitious climate goals and leverage market opportunities in the green economy," Mr. Raabe added.

He continued that the technology aligns well with India's dual goals – to accelerate industrialisation and infrastructure development while staying committed to the goal of achieving net-zero emissions by 2070. It also reduces the need to import high-grade ores and maximises the potential of domestic, underutilised mineral assets, he added.

Some challenges

Pratik Kumar, assistant professor in the Department of Civil Engineering at IIT-Jammu and who wasn't associated with the new study, said this research could be a very appropriate method for nickel extraction from an ore, especially when the world is thinking critically in the direction of carbon neutrality. The method produces high-purity ferronickel – an alloy with which stainless steel can be made – eliminating the need for extensive refining steps and making the overall process more sustainable on paper. "However, the scalability of the mentioned study to an industrial production would involve certain challenges, including a high initial investment in infrastructure and renewable energy and limitations in ore applicability. Also, further in-depth study on thermodynamic kinetics may be required along with a demand for continuous free oxygen species supply at the arc-melt interface," Mr. Kumar cautioned.

"Despite these hurdles, the study offers a promising, sustainable alternative to conventional nickel extraction methods."

Hirra Azmat is a Kashmir-based journalist who writes on science, health, and environment.

How Extracting and Producing Nickel Can Be Made More Sustainable

निकेल का निष्कर्षण और उत्पादन कैसे अधिक टिकाऊ बनाया जा सकता है

Nickel is a crucial metal used in various clean energy technologies, especially in electric vehicles (EVs).

निकेल एक महत्वपूर्ण धातु है जो कई स्वच्छ ऊर्जा प्रौद्योगिकियों, विशेषकर इलेक्ट्रिक वाहनों (EVs) में उपयोग की जाती है।



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

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

CONTACT: 9971932488



- Its demand is projected to cross **6 million tonnes per year by 2040**.
इसकी मांग के 2040 तक प्रति वर्ष 60 लाख टन से अधिक होने का अनुमान है।
- However, producing just **one tonne of nickel** can result in more than **20 tonnes of carbon dioxide emissions**.
लेकिन एक टन निकेल का उत्पादन करने से 20 टन से अधिक कार्बन डाइऑक्साइड उत्सर्जन हो सकता है।
- Nickel is used in everything from **gadgets to green technologies**, but its extraction is still a **polluting process**.
निकेल का उपयोग गैजेट्स से लेकर हरित तकनीकों तक में होता है, लेकिन इसका निष्कर्षण अभी भी एक प्रदूषणकारी प्रक्रिया है।
- A **new study** has revealed a **sustainable method** of extracting nickel from **low-grade ores** using **hydrogen plasma** instead of carbon.
एक नई अध्ययन में हाइड्रोजन प्लाज्मा का उपयोग कर कम-ग्रेड अयस्कों से निकेल निकालने की एक सतत पद्धति का खुलासा किया गया है, जिसमें कार्बन का उपयोग नहीं होता।
- This **one-step, carbon dioxide-free process** reportedly saves both **energy and time**.
यह एक-चरणीय, कार्बन डाइऑक्साइड-मुक्त प्रक्रिया कथित रूप से ऊर्जा और समय दोनों की बचत करती है।

Environmental Cost of Nickel in EVs

EV में निकेल के पर्यावरणीय लागत

- Although **EVs** are considered cleaner than fossil-fuel vehicles, the production of **lithium-ion batteries** has hidden environmental impacts.
हालांकि EVs को पारंपरिक जीवाश्म ईंधन वाहनों से स्वच्छ माना जाता है, लेकिन लिथियम-आयन बैटरियों के निर्माण से छुपे हुए पर्यावरणीय प्रभाव होते हैं।
- **Nickel**, a major component of these batteries, is **highly carbon-intensive** to extract.
निकेल, जो इन बैटरियों का एक प्रमुख घटक है, का निष्कर्षण अत्यधिक कार्बन-गहन होता है।
- While EVs reduce emissions during operation, the sourcing of **materials like nickel** shifts pollution to **mining and processing sectors**.
EVs संचालन के दौरान उत्सर्जन कम करते हैं, लेकिन निकेल जैसे कच्चे माल की प्राप्ति से प्रदूषण खनन और प्रसंस्करण क्षेत्रों की ओर स्थानांतरित हो जाता है।

New Methodology by Max Planck Institute

मैक्स प्लैंक संस्थान द्वारा नई पद्धति

- The study was published on **April 30** in the journal **Nature**, by researchers at the **Max Planck Institute for Sustainable Materials**, Düsseldorf, Germany.



यह अध्ययन 30 अप्रैल को Nature पत्रिका में मैक्स प्लैंक संस्थान, डसेलडोर्फ, जर्मनी के शोधकर्ताओं द्वारा प्रकाशित किया गया था।

- The team bypassed the traditional multistep extraction process (calcination, smelting, reduction, refining) and used a **single furnace step**.

टीम ने पारंपरिक बहु-चरणीय निष्कर्षण प्रक्रिया (कैल्सिनेशन, स्मेल्टिंग, रिडक्शन, रिफाइनिंग) को छोड़कर एकल भट्ठी चरण का उपयोग किया।

- The new method can be **18% more energy efficient** and can **cut direct CO₂ emissions by up to 84%**.

यह नई विधि 18% अधिक ऊर्जा कुशल हो सकती है और प्रत्यक्ष CO₂ उत्सर्जन को 84% तक कम कर सकती है।

- Traditional method involves **heating nickel oxide with carbon**, producing CO₂.

पारंपरिक विधि में निकेल ऑक्साइड को कार्बन के साथ गर्म किया जाता है, जिससे CO₂ उत्पन्न होती है।

- The proposed method uses **hydrogen as the reducing agent** and **electricity** as the energy source, specifically in an **electric arc furnace**.

प्रस्तावित विधि में हाइड्रोजन को रिड्यूसिंग एजेंट और बिजली को ऊर्जा स्रोत के रूप में उपयोग किया जाता है, विशेषकर इलेक्ट्रिक आर्क भट्ठी में।

- Hydrogen gas, when exposed to **high-energy electrons**, becomes **hydrogen plasma**, the **fourth state of matter**.

जब हाइड्रोजन गैस को उच्च-ऊर्जा इलेक्ट्रॉनों के संपर्क में लाया जाता है, तो यह हाइड्रोजन प्लाज्मा बनती है, जो चौथी अवस्था है।

- This **plasma** rapidly reduces **metal oxides**, and since **hydrogen reacts with oxygen to form water**, no **carbon dioxide** is emitted.

यह प्लाज्मा धात्विक ऑक्साइड्स को तेजी से घटाता है, और चूंकि हाइड्रोजन ऑक्सीजन से मिलकर जल बनाता है, इसलिए कोई कार्बन डाइऑक्साइड उत्सर्जन नहीं होता।

Focusing on Laterite Ores

लेटेराइट अयस्कों पर ध्यान केंद्रित

- The study focused on **laterite ores**, which are **abundant but hard to process**, especially in **tropical regions**.

अध्ययन में लेटेराइट अयस्कों पर ध्यान केंद्रित किया गया, जो बहुतायत में हैं पर प्रक्रिया में कठिन हैं, विशेष रूप से उष्णकटिबंधीय क्षेत्रों में।

- **Sulphide ores** are easier to process but are **rapidly depleting**.

सल्फाइड अयस्क को प्रक्रिया करना आसान होता है लेकिन वे तेजी से समाप्त हो रहे हैं।

- The new method is **efficient on laterites**, making it **crucial for future nickel production**.



यह नई विधि लेटेराइट्स पर प्रभावी है, जिससे यह भविष्य में निकेल उत्पादन के लिए आवश्यक बनती है।

- India has **substantial nickel laterite reserves** in Odisha's Sukinda region.
भारत के ओडिशा के सुकींदा क्षेत्र में प्रचुर मात्रा में निकेल लेटेराइट भंडार हैं।
- These ores contain **0.4–0.9% nickel** and are often overlooked as traditional methods require **high-grade ores**.
इन अयस्कों में **0.4–0.9% निकेल** होता है और इन्हें अक्सर नजरअंदाज किया जाता है क्योंकि पारंपरिक विधियाँ **उच्च-ग्रेड अयस्कों** की मांग करती हैं।
- The new method can extract **value from low-grade ores**, making use of **domestic resources**.
यह नई विधि **कम-ग्रेड अयस्कों से मूल्य** निकाल सकती है, जिससे **घरेलू संसाधनों** का उपयोग संभव हो सकेगा।

Broader Implications and Challenges

व्यापक प्रभाव और चुनौतियाँ

- Without such **technological innovations**, the **green transition** may only shift **carbon burdens** from one sector to another.
ऐसी **प्रौद्योगिकीय नवाचारों** के बिना, **हरित परिवर्तन** केवल **कार्बन भार** को एक क्षेत्र से दूसरे क्षेत्र में स्थानांतरित कर सकता है।
- The demand for **sustainably produced materials** is rising rapidly.
सतत रूप से उत्पादित सामग्रियों की मांग तेजी से बढ़ रही है।
- For countries like India, balancing **industrial growth** with **climate goals** is a major challenge.
भारत जैसे देशों के लिए, **औद्योगिक विकास** और **जलवायु लक्ष्यों** में संतुलन बनाना एक बड़ी चुनौती है।
- The new method aligns with India's goals to **industrialize and achieve net-zero emissions by 2070**.
यह नई विधि भारत के **औद्योगिकीकरण** और **2070 तक शुद्ध-शून्य उत्सर्जन प्राप्त करने** के लक्ष्यों के अनुकूल है।
- It also reduces the **need to import high-grade ores** and promotes the **use of domestic mineral assets**.
यह **उच्च-ग्रेड अयस्कों के आयात की आवश्यकता** को भी कम करती है और **घरेलू खनिज संसाधनों** के उपयोग को बढ़ावा देती है।
- **Pratik Kumar**, IIT-Jammu professor (not part of the study), praised the method for producing **high-purity ferronickel**, useful in **stainless steel**.
प्रतीक कुमार, IIT-जम्मू के प्रोफेसर (जो अध्ययन से जुड़े नहीं थे), ने इस विधि की **उच्च-शुद्धता फेरोनिकेल** उत्पादन के लिए सराहना की, जो **स्टेनलेस स्टील** में उपयोगी है।
- However, he warned about **scalability challenges**, including **high infrastructure costs**, **renewable energy needs**, and **thermodynamic requirements**.



हालांकि उन्होंने बड़े पैमाने पर लागू करने की चुनौतियों, जैसे उच्च बुनियादी ढांचा लागत, नवीकरणीय ऊर्जा की आवश्यकता, और थर्मोडायनामिक आवश्यकताओं के बारे में चेतावनी दी।

- A continuous oxygen supply at the arc-melt interface is also required for this method to function effectively.

इस विधि के प्रभावी संचालन के लिए आर्क-मेल्ट इंटरफेस पर निरंतर ऑक्सीजन आपूर्ति भी आवश्यक है।

Argentine leader Milei licking his chops ahead of Oct. polls

NEWS ANALYSIS
The Wall Street Journal's 'Conventuality of the Republic' column.

Argentina's firebrand right-wing President Javier Milei has largely tamed runaway inflation with a ruthless austerity plan and he aims to solidify power when his party and its allies take on a divided opposition in legislative elections in October. The trash-tweeting, shaggy-haired economist, who famously handed tech billionaire Elon Musk a chainsaw at an event in Washington earlier this year, has overseen a steady dollar-peso peg but relies on legislative allies in Congress to pass his agenda.

Many of the changes he implemented have been

through Presidential decrees, like his ideological ally, U.S. President Donald Trump, who called Mr. Milei his favorite President. Voters will choose about half the seats in the lower chamber of Argentina's Congress and a third of upper Senate on October 26.

Leverage for deals
A big victory would not give Mr. Milei a legislative majority, but it would offer him leverage to make deals to sell off government-owned companies, cut social spending, change tax and labour policy and embrace social conservatism.

That plan is in stark contrast to the programme of the parties that are the ideological descendants of General Juan Peron, who ruled the country from



Little cheer: 40% of Argentines are in poverty and many of them reject Mr. Milei's policies. REUTERS

1946-1955 and 1973-1974, and his wife Evita.

Their governments nationalised industries, unveiled pro-labour policies and rolled out social programs including free healthcare.

The economic stability spurred by Mr. Milei, who took power in late 2023 and quickly slashed spending as part of a shock therapy programme to pull the South American country out of a deep crisis, has not

translated into across-the-board improvements.

Prices of basic goods like jeans and tennis shoes are reportedly double what they are in other parts of the Americas. Pensioners continue to protest

the cost of living and anger over the relatively poor salaries of healthcare workers at a respected pediatric hospital has turned into a months-long saga. Nearly 40% of Argentines remain in poverty, and many of them reject Milei's policies.

"I'm not a Peronist, but I'll vote for them because I'd vote for anyone before Mr. Milei," said Jorge, a 42-year-old "cartonero" who collects cardboard for recycling, an extremely poor living. The man, who declined to give his last name, said one of his four children was treated at the pediatric hospital where staff are protesting.

Posing another threat to Mr. Milei's popularity is the possibility that he may in coming months have to further tighten economic

policy to meet the terms of a \$20 billion International Monetary Fund loan that boosted Argentina's reputation among investors, whose dollars the country desperately needs.

Rupture inevitable

Up for grabs in the election is the vast province surrounding the capital, Buenos Aires, which is the geographic heart of Peronism and home to 40% of the country's voters. A recent source told reporters Mr. Milei has vowed to defeat Peronist Governor Axel Kicillof there.

Mr. Milei's candidate unexpectedly placed first in a recent Buenos Aires local election, and consulting firm Observatorio Electoral shows Mr. Milei's Libertad Avanza party with a

slim 37%-36% advantage over the centre-left Peronists. Nationally, 42% of voters favour Mr. Milei against 23% for Peronists. Beating the standard-bearers of Juan Peron's legacy would have seemed impossible a few years ago, but with inflation down to a projected 30% this year, from 118% last year and Mr. Milei credited with cutting corruption, some voters are ready to give the political firebrand more power.

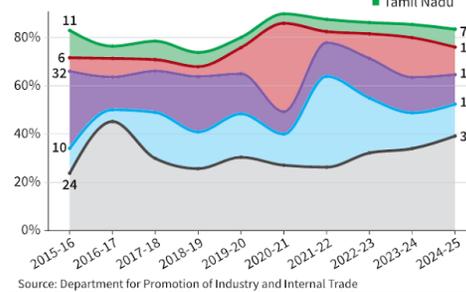
"I'll vote for Mr. Milei again because he's achieved a degree of normality in the economy," said Federico Segovia, a 22-year-old university student who blamed the previous Peronist President, Alberto Fernandez, for leaving the economy in such a disastrous shape.

Over the last 10 years, foreign investors have shifted their preference from Delhi to Maharashtra and, to an extent, Gujarat. While these three States have remained among the top foreign investment destinations in India, their shares have changed significantly since 2015-16.

An analysis by *The Hindu* of foreign direct investment (FDI) data from the Ministry of Commerce and Industry show that, over the 10-year period 2015-25, the regional concentration of FDI has remained high, with just five States accounting for anywhere between three-fourths and nearly 90% of all FDI com-

Changing direction

Delhi has seen a sharp fall in its share in total FDI, while Maharashtra has seen a surge.



ing into the country.

Out of these 10 years, both Maharashtra and Delhi have remained in the top 5 FDI destinations every year. However, their respective attractiveness has reversed direction.

Delhi accounted for 32% (\$12.7 billion) of all FDI in 2015-16, the highest that year. This fell to 12% (\$6 billion) by 2024-25.

In contrast, Maharashtra saw its share grow from 24% (\$9.5 billion) in 2015-16

that year. Karnataka has been among the top 5 FDI destinations for nine out of the last 10 years, only losing out to Andhra Pradesh in 2016-17. Karnataka attracted 10% of all FDI in 2015-16, which grew to 13% by 2024-25, the second-highest share that year.

"The fact that Maharashtra and Karnataka captured 51% of India's FDI in 2024-25 is not merely a statistic – it's a revelation of how capital behaves during uncertain times," Rishi Shah, partner at Grant Thornton Bharat, explained.

Mr. Shah explained that, as global FDI inflows face headwinds and investors become more risk-averse, they inevitably gravitate to

returns and robust infrastructure.

"This 'flight to quality' phenomenon means that States with mature industrial corridors, world-class connectivity, and proven policy frameworks – like Maharashtra's Mumbai financial hub and Karnataka's Bengaluru tech ecosystem – become even more attractive relative to emerging centres," he said.

Gujarat, too, has nearly doubled its share in national FDI, from 6% in 2015-16 to 11% in 2024-25. Gujarat and Tamil Nadu – which saw its share from 11% to 7% over this period – have remained among the top 5 investment destinations in 8 and 7 out of the last 10 years, respectively.



Brazil's 'cattle king' leads an ambitious push to tag herds and protect Amazon

The cattle tagging initiative is part of a govt. programme to make livestock in the Amazonian state of Pará traceable ahead of the UN climate summit in Nov; a law passed in 2023 requires ranchers to individually identify their cattle by the end of 2026, but so far only 12,000 cattle have been tagged

ISS Paper III: Environment

Reuters
XINGUARA

Decades of ranching in the Amazon have earned Roque Quagliato, Brazil's "King of Cattle," great wealth - and some trouble. His family's immense farms were accused of submitting workers to slavery-like conditions in the 1990s and deforesting huge tracts of the rainforest in the early 2000's.

But as Brazil's beef industry evolves under pressure from some of the world's greatest export markets, Mr. Quagliato, at 85, is now in evidence for something else: he is the face of the push to fix cattle ranching in the Amazon, one of the world's biggest drivers of deforestation.

Mr. Quagliato's cattle were the first to be tagged with chips in their ears as part of a government programme to make millions of cattle in the Amazonian state of Pará traceable around the time world leaders arrive there for the United Nations climate summit in November.

"What we hope is that, at the end, the international market gives Brazil a better price," he said at the sidelines of a recent cattle auction in Xinguara, one of the beef capitals of Pará. Deforesters, he added, are now "a matter for jail."

Mr. Quagliato has his eyes on exporting pricier and more demanding markets in the United States, Europe and Asia, some of



Tough shift: Cattle stand during an auction in the city of Xinguara in Brazil. REUTERS

which buy from Brazilian states but not Pará at least partly because of concerns around animal health and links to deforestation.

New hustle

"Brazil is hustling to open high-demand markets such as Japan and South Korea, and improving its traceability system is one of the key steps to reaching that goal," said Renan Araujo, a senior market analyst at S&P Global.

Pará, which has a herd of 26 million, about the size of Australia's, wants to tag all its cattle by 2027 as it seizes on the global spotlight to become a test for a wider policy and a major shift for the world's largest beef exporter.

So far, it's off to an inauspicious start. The law, passed in late 2023, requires that ranchers in Pa-

ra identify their cattle by the end of 2026. But by May ranchers in the state of Pará had only tagged some 12,000 cattle.

But the buy-in of big ranchers, like Mr. Quagliato, has allayed concerns that "there was going to be wholesale rejection" of the policy, said Andy Jarvis, who directs the programme Future of Food at the Bezos Earth Fund, which donated \$16.3 million to Pará's project. "The success of this initiative needs the farmers and ranchers themselves to be supporting it."

The ambitious move, if successful, could be a turning point in the struggle to halt the destruction of the world's largest rainforest.

Environmentalists have long argued that improvements in cattle traceability would give law enforce-

ment a powerful tool to choke off ranching in illegally deforested farms from the global supply chains relying on Brazil to feed growing global appetite for beef.

'We have political will'

Tagging each cow in Pará isn't simply a tool to guarantee animals aren't eating grass where forests were illegally razed. More than anything, it allows animal health agencies to quickly track any sick cattle and their contacts.

Data suggests the market rewards traceable herds. The average price of the beef Brazil exports is 8% lower than Uruguay's, which traces cattle individually, according to 2024 data from the Brazilian Beef Exporters Association.

That's partly because Uruguay sells much of its beef to the European Union, which has long worked to rid its supply chains of ties to deforestation and requires individual traceability at least 90 days before cattle are slaughtered.

Ranchers said they are waiting to comply until the legal deadline comes closer, because they want to make sure it won't be delayed as many observers expect. Some also complained about technical glitches in the system to register cattle, which the government denies.

Still, the project has gained support from both the meat-packing industry and environmental groups. São Paulo-based JBS, the world's biggest meat packer, has donated 300,000 tags to the programme so far.

"I'm optimistic," said Marina Guyot, a policy manager at Imaflora, a nonprofit that received a grant from Bezos to help implement the policy. "At the moment, we have political will, which is more than half the way there."

Alaion Lacerda's 50-strong cattle herd at the heart of Pará state munch on grass alongside cocoa growing beneath the shade of native trees he planted. He is one of thousands of small producers at the bottom of Brazil's supply chain, providing young calves that bigger ranchers will fatten and sell to slaughterhouses.

But, like about half the cattle in Pará, his herd is grazing in areas where the rainforest was illegally razed, and he now wonders if the new law will make it harder for him to sell his cattle. "It scares us," he said, sitting on his porch. "We live in a region where almost all producers have a liability."

Every day, satellites collect visual data on deforestation that the government and meat packers use to mark farms where forests were illegally razed. But tagging will allow officials to geo-locate cattle with a swiping device.





France's President Emmanuel Macron at the third UN Ocean Conference in Nice, France, on Monday. AP

Don't let deep sea become 'wild west': Guterres to leaders

[GS Paper III: Environment](#)

Agence France-Presse

NICE

United Nations Secretary General Antonio Guterres said on Monday the world could not let the deepest oceans "become the wild west", at the start in France of a global summit on the seas.

World leaders are attending the UN Ocean Conference in Nice as nations tussle over contentious rules on mining the seabed for critical minerals and the terms of a global treaty on plastic pollution.

U.S. President Donald Trump has brought urgency to the debate around deep-sea mining, moving to fast-track U.S. exploration in international waters and sidestepping global efforts to regulate the nascent sector.

The International Seabed Authority, which has jurisdiction over the ocean floor outside national waters, is meeting in July to discuss a global mining code to regulate mining in the ocean depths.

Mr. Guterres said he supported these negotiations and urged caution as countries navigate these "new waters on seabed mining".

"The deep sea cannot become the wild west," he said, to applause from the plenary floor.

Many countries oppose seabed mining, and France is hoping more nations in Nice will join a moratorium until more is known about the ecological impacts of the practice.

French President Emmanuel Macron said a moratorium on deep-sea mining was "an international necessity". "I think it's madness to launch predatory economic action that will disrupt the deep seabed, disrupt biodiversity, destroy it – when we know nothing about it," the French President said.

Mr. Macron said about 50 nations had ratified the treaty and 15 others had formally committed to joining them.

PATRIOTIC IAS



Foreign influence is used as ‘alibi’ in democracies, finds think tank

GS Paper III: Social Media and Democracy

Agence France-Presse

STOCKHOLM

Foreign interference in elections is a real concern, but sometimes used as an “alibi” by democracies to divert attention from domestic issues, the head of a democracy think-tank said Monday.

According to a new report by Stockholm-based International IDEA, **disinformation and manipulation of social media algorithms to influence results are among the major threats to democracies during election campaigns.**

Diverts debates

The threat is “exacerbated by the explicit willingness of domestic, foreign and non-state actors to engage in such activities”, the re-



The question of inequality, the question of how a lot of citizens feel left behind and that they’re not being heard by their political institutions, deserves attention

KEVIN CASAS-ZAMORA
IDEA Secretary General

port said, highlighting states such as China, Russia and Iran.

Among 54 elections covered in 2024, 80% experienced “deliberate campaigns of disinformation trying to shape the electoral result”, IDEA’s Secretary General Kevin Casas-Zamora said. However, when politicians blame fo-

reign influence, it risks diverting the debate from real issues, and whether such campaigns “succeeded or not is anybody’s guess”, he added.

“The question of inequality, the question of how a lot of citizens feel left behind and that they’re not being heard by their political institutions, deserves probably at least as much attention as the external threats that come in the shape of foreign interference or disinformation,” Mr. Casas-Zamora said.

“The excessive emphasis on foreign interference is a kind of alibi, it’s a kind of convenient explanation to excuse domestic political actors from their responsibility to rethink the working of democracy and make sure that it delivers for citizens.”

For Mr. Casas-Zamora, it is equally urgent to question and analyse the shortcomings fuelling the loss of citizens’ trust in their political institutions, if “we care about the future of democracy”.

In 2024, about 1.6 billion people voted in 74 national elections worldwide, demonstrating a strong willingness among populations to make their voices heard, even though trust in politics remains “in short supply,” he said. “Arguably, the most important source of mistrust in political institutions is the performance of the state in delivering public goods and services,” the Costa Rican former politician said.

“Because that’s what shapes the relationship of citizens with state institutions.”

PATRIOTIC



Feeding hour



GS Paper III: Environment

Hundreds of griffon vultures gather and soar above a feeding site near Nueno, Spain, on Sunday. Dead animals are placed here by the Ornithological Group of Huesca every Sunday to feed the birds. AFP

PA



TOPICS COVERED (GS Paper IV and Essay)

1. For a Trapped Tiger, Instinct to Live Overrules Impulse to Hunt

फंसे हुए बाघ के लिए जीवित रहने की प्रवृत्ति शिकार की इच्छा पर हावी रही

ISSM

'For a trapped tiger, instinct to live overrules impulse to hunt'

Essay

Sandeep Vellaram
IDUKKI

Everybody wondered why the tiger didn't eat the dog – after all, they were stuck barely a foot apart in a deep pit at a private cardamom plantation at Kadukkacity in Idukki district, Kerala, for more than five hours before being rescued on Sunday.

However, Kottayam Divisional Forest Officer (DFO) Rajesh offered an explanation: "In such situations, wild animals usually don't attack; their only aim is to escape the danger. An extraordinary glimpse of wilderness grace where survival eclipsed savagery."



The tiger and the dog were stuck at a pit at a cardamom plantation at Kadukkacity in Idukki on Sunday. SPECIAL ARRANGEMENT

he said.

Wildlife expert P.S. Easa observed that normally, tigers do not hunt dogs, but leopards do. "When a dog notices a tiger, it may bark, prompting the tiger to chase it, which can lead

both animals to fall into a trap." Dr. Easa further said that as both animals found themselves trapped, their instinct was to escape.

The Forest Department released the tiger into the Periyar Tiger Reserve.

For a Trapped Tiger, Instinct to Live Overrules Impulse to Hunt

फंसे हुए बाघ के लिए जीवित रहने की प्रवृत्ति शिकार की इच्छा पर हावी रही

A tiger and a dog were found trapped barely a foot apart in a deep pit at a private cardamom plantation in Kadukka city, Idukki district, Kerala.

केरल के इडुक्की ज़िले के कडुक्का शहर में एक निजी इलायची बागान में बाघ और कुत्ता केवल एक फुट की दूरी पर गहरे गड्ढे में फंसे पाए गए।

- They remained in the pit for **more than five hours** before being **rescued on Sunday**.
वे पांच घंटे से अधिक समय तक उस गड्ढे में फंसे रहे और रविवार को बचाव किया गया।
- Many were surprised why the **tiger didn't attack or eat the dog** despite being so close.
कई लोग हैरान थे कि बाघ ने कुत्ते पर हमला या उसे खाया क्यों नहीं, जबकि वे इतने पास थे।



- Kottayam Divisional Forest Officer (DFO) Rajesh explained that in such conditions, wild animals aim to escape, not attack.
कोट्टायम मंडल वन अधिकारी (डीएफओ) राजेश ने बताया कि ऐसी परिस्थितियों में जंगली जानवरों का उद्देश्य बच निकलना होता है, न कि हमला करना।
- He described it as an extraordinary moment of wilderness grace, where survival overpowered savagery.
उन्होंने इसे जंगली शालीनता का असाधारण क्षण बताया, जहां जीवित रहने की भावना ने क्रूरता पर विजय प्राप्त की।
- Wildlife expert P.S. Easa noted that tigers usually don't hunt dogs, but leopards do.
वन्यजीव विशेषज्ञ पी. एस. ईसा ने बताया कि बाघ आमतौर पर कुत्तों का शिकार नहीं करते, जबकि तेंदुए करते हैं।
- He explained that if a dog barks at a tiger, the tiger may chase, and both might fall into a trap.
उन्होंने समझाया कि अगर कुत्ता बाघ पर भौंकता है, तो बाघ पीछा कर सकता है, जिससे दोनों फंसे में गिर सकते हैं।
- In this case, as both were trapped together, their instinct shifted to escaping the situation.
इस मामले में, चूंकि दोनों एक साथ फंसे थे, इसलिए उनकी प्रवृत्ति बचने की ओर केंद्रित हो गई।

The Forest Department later released the tiger into the Periyar Tiger Reserve. वन विभाग ने बाद में बाघ को पेरियार टाइगर रिजर्व में रिहा किया।

TOPICS COVERED (PCS Special)

1. Cargo Vessel Catches Fire off Kerala Coast
केरल तट के पास कार्गो जहाज़ में आग लगी
2. Body of Soldier Killed in Sikkim Landslip Flown to Lakshadweep
सिक्किम भूस्खलन में शहीद सैनिक का शव लक्षद्वीप लाया गया
3. Kerala Govt. Plans to Claim Insurance Over Ship Accident



जहाज़ दुर्घटना पर बीमा दावा करने की योजना बना रही है केरल सरकार

4. History Lessons: On the French Open इतिहास से सीख: फ्रेंच ओपन पर

Cargo vessel catches fire off Kerala coast; Navy, Coast Guard rescue 18, four missing

PCS

Mithosh Joseph
KOZHIKODE

A joint rescue operation launched by the Indian Coast Guard and the Indian Navy saved the lives of 18 persons from a cargo ship that caught fire nearly 88 nautical miles off the coast of Beypore in Kozhikode, Kerala, on Monday morning.

Two crew members sustained serious injuries, while four others, reportedly citizens of Taiwan, Indonesia and Myanmar, who were involved in fire-fighting efforts, were missing.

Coast Guard sources said the 270-metre-long Singapore-flagged vessel, *M.V. Wan Hai 503*, was headed to Mumbai from Colombo with over 650 containers and a 22-member crew.

The cause of the fire, which later led to the explosion of some of the con-



Inferno in sea: Smoke billows from the Singapore-flagged container vessel *M.V. Wan Hai 503* following an explosion, nearly 88 nautical miles off Beypore in Kozhikode, on Monday. X/@INDIACOASTGUARD

tainers, had not been ascertained.

The incident comes a couple of weeks after a Liberian flagged vessel container ship, *M.S.C. ELSA 3*, sank off the Kochi coast in

Kerala. This came to light when the Maritime Operations Centre in Mumbai alerted its counterpart in Kochi about the underdeck fire around 9.30 a.m.

Immediate measures

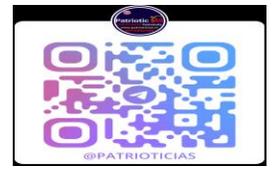
were initiated by the Coast Guard to rescue the crew and deter the vessel from nearing the Kerala coast.

According to the officials with the Kerala State Disaster Management

Authority (KSDMA), the 18 crew members from various countries had reportedly jumped into the sea and used emergency rafts to escape the inferno that broke out at the middle portion of the ship. The ship that departed Colombo on June 7 was expected to reach Mumbai on June 10, they said.

Officials from the Maritime Rescue Sub Centre in Kochi said five Coast Guard ships and a Dornier aircraft were despatched for the speedy rescue of the crew and surveillance.

There were reportedly over 650 containers, including 150 hazardous ones, in the cargo vessel. KSDMA officials said about 20 containers reportedly fell into the sea, further triggering safety concerns. They said aerial surveillance measures were under way to closely monitor the movement of the containers that were adrift.



Cargo Vessel Catches Fire off Kerala Coast

केरल तट के पास कार्गो जहाज़ में आग लगी

A joint rescue operation by the Indian Coast Guard and Indian Navy saved 18 crew members from a cargo ship that caught fire nearly 88 nautical miles off the coast of Beypore, Kozhikode, on Monday morning.

भारतीय तटरक्षक बल और नौसेना द्वारा संयुक्त बचाव अभियान में सोमवार सुबह कोझिकोड के बेयपोर तट से 88 नौटिकल मील दूर आग लगी कार्गो जहाज़ से 18 क़ सदस्यों को बचाया गया।

- Two crew members sustained serious injuries, while four others, citizens of Taiwan, Indonesia, and Myanmar, were reported missing after attempting to fight the fire.
दो क़ सदस्यों को गंभीर चोटें आईं, जबकि चार अन्य, जो ताइवान, इंडोनेशिया और म्यांमार के नागरिक थे, लापता बताए गए हैं, जो आग बुझाने के प्रयास में शामिल थे।
- The affected ship, M.V. Wan Hai 503, is a Singapore-flagged vessel measuring 270 metres, carrying over 650 containers and 22 crew members, travelling from Colombo to Mumbai.
प्रभावित जहाज़, एम.वी. वान हाई 503, एक सिंगापुर ध्वजांकित जहाज़ है जिसकी लंबाई 270 मीटर है, जिसमें 650 से अधिक कंटेनर और 22 क़ सदस्य सवार थे, और यह कोलंबो से मुंबई जा रहा था।
- The cause of the fire and the explosions in some containers remains unknown.
आग लगने और कुछ कंटेनरों में विस्फोट होने का कारण अज्ञात है।
- The incident occurred just weeks after another cargo ship, M.S.C. ELSA 3, sank off the Kochi coast, raising concerns over maritime safety.
यह घटना कुछ सप्ताह बाद हुई जब एक अन्य जहाज़, एम.एस.सी. एल्सा 3, कोच्चि तट के पास डूब गया, जिससे समुद्री सुरक्षा को लेकर चिंता बढ़ी।
- The Maritime Operations Centre in Mumbai alerted its counterpart in Kochi around 9:30 a.m. about the underdeck fire.
सुबह 9:30 बजे मुंबई के समुद्री संचालन केंद्र ने कोच्चि में अपने समकक्ष को जहाज़ के अंदर आग के बारे में सतर्क किया।
- The Coast Guard immediately initiated rescue efforts to save the crew and to prevent the ship from approaching the Kerala coast.
तटरक्षक बल ने तुरंत बचाव कार्य शुरू किया ताकि क़ को बचाया जा सके और जहाज़ को केरल तट के पास आने से रोका जा सके।
- According to the Kerala State Disaster Management Authority (KSDMA), the 18 rescued crew members had reportedly jumped into the sea and used emergency rafts to escape the fire.
केरल राज्य आपदा प्रबंधन प्राधिकरण (KSDMA) के अनुसार, बचाए गए 18 क़ सदस्य आग से बचने के लिए समुद्र में कूद गए और आपातकालीन नावों का उपयोग किया।



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

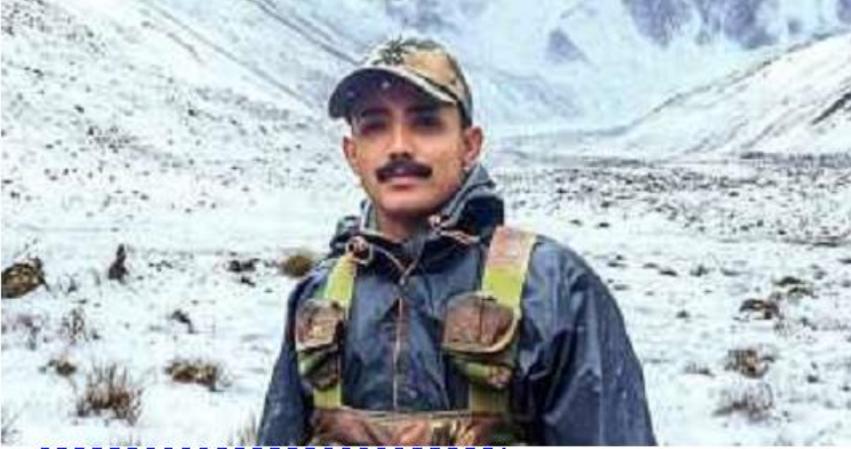
YOUTUBE CHANNEL: <https://www.youtube.com/@PatrioticIAS>

CONTACT: 9971932488



- The ship had **departed Colombo on June 7** and was scheduled to reach **Mumbai on June 10**.
यह जहाज़ 7 जून को कोलंबो से रवाना हुआ था और इसे 10 जून को मुंबई पहुंचना था।
- **Five Coast Guard ships** and a **Dornier aircraft** were deployed for **rescue operations** and **aerial surveillance**.
पांच तटरक्षक पोत और एक डॉर्नियर विमान को बचाव अभियान और हवाई निगरानी के लिए तैनात किया गया।
- The cargo ship was carrying **over 650 containers**, including **150 hazardous containers**.
कार्गो जहाज़ में 650 से अधिक कंटेनर थे, जिनमें से 150 खतरनाक कंटेनर थे।
- Around **20 containers** reportedly **fell into the sea**, causing **serious safety concerns**.
करीब 20 कंटेनर समुद्र में गिर गए, जिससे गंभीर सुरक्षा चिंताएं उत्पन्न हुईं।
- **Aerial surveillance operations** were initiated to **track the drifting containers** and monitor their **movement** in the sea.
हवाई निगरानी अभियान शुरू किया गया ताकि बहते कंटेनरों की गतिविधियों पर नजर रखी जा सके।

PATRIOTIC IAS



PCS

Body of soldier killed in Sikkim landslide flown to Lakshadweep

The Indian Army, Indian Air Force, and the Indian Navy coordinated the final journey of a soldier from a disaster site at an altitude of 9,000 feet in Sikkim's Mangan district to a little above sea level in Lakshadweep. The mortal remains of Sepoy Sainudheen P.K., who died after a landslide hit a military camp in northern Sikkim's Chhaten on June 1, were flown about 2,500 km to his native island of Androth in the Lakshadweep archipelago on Monday. His body was recovered on Sunday under the debris in the disaster zone after eight days of relentless search efforts. Five others reported missing remained traceless.

एक सैन्य शिविर में आए भूस्खलन में शहीद हो गए थे, सोमवार को 2,500 किलोमीटर दूर स्थित उनके लक्षद्वीप द्वीपसमूह के एंड्रोथ द्वीप में लाया गया।

- His body was recovered on Sunday, eight days after the incident, from beneath the debris in the disaster zone, following relentless search efforts.

Body of Soldier Killed in Sikkim Landslip Flown to Lakshadweep

सिक्किम भूस्खलन में शहीद सैनिक का शव लक्षद्वीप लाया गया

The Indian Army, Indian Air Force, and Indian Navy jointly coordinated the final journey of a soldier from a disaster site at 9,000 feet altitude in Mangan district, Sikkim, to near sea level in Lakshadweep.

भारतीय सेना, भारतीय वायु सेना, और भारतीय नौसेना ने मिलकर एक सैनिक की अंतिम यात्रा को समन्वित किया, जो सिक्किम के मंगन ज़िले में 9,000 फीट की ऊंचाई पर स्थित आपदा स्थल से लक्षद्वीप के समुद्र तल के पास लाया गया।

- The mortal remains of Sepoy Sainudheen P.K., who died in a landslide at a military camp in Chhaten, northern Sikkim, on June 1, were flown 2,500 km to his native island Androth in the Lakshadweep archipelago on Monday.

सिपाही सैन्युद्दीन पी.के. के पार्थिव शरीर को, जो 1 जून को उत्तरी सिक्किम के छातेन में



उनका शव रविवार को घटना के आठ दिन बाद, आपदा क्षेत्र के मलबे से लगातार खोज प्रयासों के बाद बरामद किया गया।

- **Five other personnel** who were reported missing still remain untraceable. घोषित रूप से लापता पाँच अन्य जवानों का अब तक कोई पता नहीं चल सका है।

Kerala govt. plans to claim insurance over ship accident

Govt. is looking for adequate insurance compensation through negotiation with owners of **MSC Elsa 3**, which **sank on May 25**; decision was taken at a meeting between the CM and D-G, Shipping

PCS

The Hindu Bureau

THIRUVANANTHAPURAM

Though the sinking of **MSC Elsa 3** off the Kerala coast sparked significant environmental concerns, including potential oil spills and spread of hazardous chemicals, the State government is of the view that there is no need to file an immediate criminal case against the shipping company.

Instead of pursuing a criminal case against the company, the government is looking for adequate insurance compensation through negotiation. According to a note prepared by the Chief Secretary, accessed by *The Hindu*, as



Liberian-flagged container vessel **MSC Elsa 3**, which sank off the Kerala Coast on May 25. REUTERS

per a discussion held between the Chief Minister and the Director General of Shipping on May 29, the entire focus at this time should be on collecting evidence of damages so that evidence-based claims can be raised.

The government decision has invited sharp criticism from various corners.

As per maritime law expert V.J. Mathew, an FIR should have been registered in Kerala apart from arresting those involved. The ship sank on May 25.

Operation to salvage ship begins: DGS

The Hindu Bureau

KOCHI

The underwater salvage operation of **MSC Elsa 3** began on Monday the Directorate General of Shipping (DGS) said.

The vessel's owner Mediterranean Shipping Company (MSC) had roped in the Singapore-based T&T Salvage for the task. The salvage team has mobilised diving support vessel SEA-MEC III, and 12 divers will carry out air-diving operation.

Kerala Govt. Plans to Claim Insurance Over Ship Accident

जहाज़ दुर्घटना पर बीमा दावा करने की योजना बना रही है केरल सरकार

The Kerala government is planning to seek adequate insurance compensation through negotiation with the owners of **MSC Elsa 3**, which sank on May 25.



केरल सरकार 25 मई को डूबे MSC Elsa 3 के मालिकों से बीमा मुआवज़े के लिए बातचीत के ज़रिए उचित दावा करने की योजना बना रही है।

- The decision was taken during a meeting between the Chief Minister and the Director General of Shipping on May 29.
यह निर्णय 29 मई को मुख्यमंत्री और शिपिंग महानिदेशक के बीच हुई बैठक में लिया गया।
- The sinking of MSC Elsa 3 off the Kerala coast raised environmental concerns, including the possibility of oil spills and hazardous chemical leaks.
केरल तट के पास MSC Elsa 3 के डूबने से पर्यावरणीय चिंता बढ़ गई, जिसमें तेल रिसाव और खतरनाक रसायनों के फैलने की आशंका शामिल है।
- Despite these concerns, the government believes that there is no immediate need to file a criminal case against the shipping company.
इन चिंताओं के बावजूद, सरकार का मानना है कि शिपिंग कंपनी के खिलाफ तुरंत आपराधिक मामला दर्ज करने की आवश्यकता नहीं है।
- Instead of filing a criminal case, the government prefers to focus on insurance claims based on evidence of damage.
सरकार आपराधिक मामला दर्ज करने के बजाय, साक्ष्यों के आधार पर बीमा दावे पर ध्यान केंद्रित करना चाहती है।
- A note prepared by the Chief Secretary, accessed by the media, highlighted that the priority is to collect evidence of damages.
मुख्य सचिव द्वारा तैयार किए गए एक नोट में बताया गया है कि प्राथमिकता क्षति के साक्ष्य एकत्र करने की है।
- The idea is to make evidence-based claims instead of immediate legal action.
उद्देश्य यह है कि तथ्य आधारित दावे किए जाएं, न कि तुरंत कानूनी कार्रवाई।
- This approach has invited sharp criticism from multiple sources.
इस दृष्टिकोण की कई स्रोतों से कड़ी आलोचना हुई है।
- According to maritime law expert V.J. Mathew, an FIR should have been registered in Kerala and those responsible should have been arrested.
समुद्री कानून विशेषज्ञ वी. जे. मैथ्यू के अनुसार, केरल में एफआईआर दर्ज होनी चाहिए थी और जिम्मेदार लोगों की गिरफ्तारी होनी चाहिए थी।
- The ship sank on May 25, causing concerns of environmental harm and legal accountability.
25 मई को जहाज डूब गया, जिससे पर्यावरणीय क्षति और कानूनी जवाबदेही को लेकर चिंता पैदा हुई।



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Grand welcome: The world's largest container vessel *MSC Irina* gets a water salute as it enters the Vizhinjam International Sea Port in Thiruvananthapuram on Monday. NIRMAL HARINDRAN

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History lessons

The top layer in men's and women's tennis now sports a settled look

The yearning for historical greatness is common among sports fans. Contemporary success and genius notwithstanding, there is often a tendency to hark back to the past and lament that present-day virtuosi are not a patch on the older ones. In tennis, this storyline was expected to unfold in the immediate aftermath of the 'Big Three' era as Roger Federer and Rafael Nadal exited, and Novak Djokovic started displaying his waning powers. It is to Carlos Alcaraz and Jannik Sinner's credit that they have allowed none of this talk to surface. Sunday's fascinating five-set French Open final was the latest piece of evidence as the Spaniard outlasted the World No. 1 over five hours and 29 minutes of intense, scintillating action. The victory brought Alcaraz his fifth Grand Slam trophy, and the World No. 2 became only the third man after Gustavo Kuerten and Nadal to defend titles at Roland-Garros this millennium. Alcaraz and Sinner have now swept the last six Majors and eight of the previous 11. They are firmly perched at the top of tennis' current totem pole, and going by the 12th act of their engrossing play in Paris, there is little doubt that it is their rivalry that will prove era-defining for the men's game.

Leading in, it was Sinner who had been more clinical, with the highlight being the ruthless dismantling of 24-time Major winner Djokovic in the semifinal. The 23-year-old had won 29 straight sets at Slams this year, and when he made it 31 by pocketing the first two against Alcaraz, a third straight Major – fourth overall – loomed. But Alcaraz, who came in after triumphs in Monte Carlo and Rome, found a higher gear when threatened – erasing three match points in the fourth set, breaking Sinner when the Italian was serving for the championship and overcoming his own disappointment of failing to serve it out in the fifth stanza to turn the tables fully. Saturday's women's final between No. 1 Aryna Sabalenka and No. 2 Coco Gauff was as dramatic and capricious, but alternated between middling and glorious. In the end, it was Gauff who proved steadier, overcoming some treacherous conditions and her erratic opponent in two hours and 38 minutes. Sabalenka, in fact, was the favourite, having also ousted three-time defending champion Iga Swiatek en route. But her power-packed game crumbled in the face of Gauff's restrained art as the American left her nursing consecutive defeats in Slam finals. For Gauff, 21, it was her second Major, and with a technique that is gradually improving, she is sure to rise further.

History Lessons: On the French Open इतिहास से सीख: फ्रेंच ओपन पर

The top layer of men's and women's tennis is now more stable and settled.

पुरुषों और महिलाओं के टेनिस में शीर्ष स्तर अब अधिक स्थिर और संतुलित हो गया है।

• Sports fans often crave for historical greatness, comparing present stars to legends of the past.

खेल प्रेमी अक्सर ऐतिहासिक महानता की लालसा रखते हैं, और वर्तमान सितारों की तुलना अतीत के दिग्गजों से करते हैं।

• This narrative was expected after the era of the 'Big Three' — Federer, Nadal, and Djokovic.

यह कथा तब उभरने की उम्मीद थी जब 'बिग थ्री' — फेडरर, नडाल, और जोकोविच का युग समाप्त हो रहा था।

• However, Carlos Alcaraz and Jannik Sinner have prevented such doubts from emerging.

हालांकि, कार्लोस अल्कराज और जानिक सिनर ने ऐसे संदेहों को उभरने नहीं दिया।

• In the French Open final, Alcaraz defeated World No. 1 Sinner in a thrilling five-set match that lasted five hours and 29 minutes.

फ्रेंच ओपन फाइनल में अल्कराज ने वर्ल्ड नंबर 1 सिनर को एक रोमांचक पांच सेट के मुकाबले में हराया, जो 5 घंटे 29 मिनट तक चला।

• The win gave Alcaraz his fifth Grand Slam title, and he became only the third man after Kuerten and Nadal to defend the title at Roland-Garros this century.

इस जीत से अल्कराज को पांचवां ग्रैंड स्लैम खिताब मिला, और वह इस सदी में कुएर्टन और नडाल के बाद रोलां-गैरो में खिताब बचाने वाले तीसरे पुरुष बने।

• Alcaraz and Sinner have now won the last six Grand Slams, and eight of the last eleven.

अल्कराज और सिनर ने अब पिछले छह ग्रैंड स्लैम और पिछले ग्यारह में से आठ जीते हैं।

• Their rivalry is now defining the era in men's tennis.

उनकी प्रतिद्वंद्विता अब पुरुष टेनिस के युग को परिभाषित कर रही है।

Sinner's Strong Start and Alcaraz's Comeback

सिनर की मजबूत शुरुआत और अल्कराज की वापसी

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- **Sinner**, aged 23, was dominant early on, defeating **Djokovic** in the **semifinal** and winning **29 consecutive sets** in Grand Slams this year.
23 वर्षीय सिनर ने शुरुआत में दमदार प्रदर्शन किया, **सेमीफाइनल में जोकोविच** को हराया और इस साल लगातार **29 सेट ग्रेंड स्लैम** में जीते।
- He added **two more sets** against Alcaraz in the final, taking the count to **31**.
फाइनल में उन्होंने **अल्कराज के खिलाफ दो और सेट** जीते, जिससे कुल संख्या **31** हो गई।
- A **third straight Major** and **fourth overall** seemed certain for Sinner at that point.
उस समय ऐसा लग रहा था कि **सिनर का तीसरा लगातार मेजर और कुल मिलाकर चौथा खिताब** निश्चित है।
- But **Alcaraz**, fresh off wins in **Monte Carlo** and **Rome**, raised his level under pressure.
लेकिन **मॉन्टे कार्लो और रोम** में जीत के बाद आए **अल्कराज** ने दबाव में खुद को उंचा उठाया।
- He **saved three match points**, **broke Sinner** when he was serving for the title, and **recovered from failing to serve it out himself** in the final set.
उन्होंने **तीन मैच प्वाइंट बचाए**, **सिनर की सर्विस तोड़ी** जब वह खिताब के लिए सर्व कर रहे थे, और **खुद भी निर्णायक सेट में सर्विस न कर पाने के बाद वापसी की**।

Gauff's Triumph Over Sabalenka

गॉफ की सबालेंका पर जीत

- The **women's final** between **World No. 1 Aryna Sabalenka** and **World No. 2 Coco Gauff** was full of **drama and unpredictability**.
वर्ल्ड नंबर 1 आर्यना सबालेंका और वर्ल्ड नंबर 2 कोको गॉफ के बीच महिलाओं का फाइनल नाटकीयता और अनिश्चितता से भरा हुआ था।
- In the end, it was **Gauff** who held her nerve and won in **two hours and 38 minutes**.
आखिरकार, **गॉफ** ने संयम बनाए रखा और **2 घंटे 38 मिनट** में जीत दर्ज की।
- **Sabalenka** was the **favourite**, especially after defeating **three-time champion Iga Swiatek**.
सबालेंका को **प्रबल दावेदार** माना जा रहा था, क्योंकि उन्होंने **तीन बार की चैंपियन इगा स्वियातेक** को हराया था।
- However, her **aggressive game collapsed** under pressure, and **Gauff's calm technique** triumphed.
हालांकि, **उनका आक्रामक खेल दबाव में ढह गया**, और **गॉफ की शांत तकनीक** विजयी रही।
- **Gauff**, aged 21, claimed her **second Grand Slam title**, and with her improving technique, she is likely to rise even further.
21 वर्षीय **गॉफ** ने अपना **दूसरा ग्रेंड स्लैम खिताब** जीता, और उनकी तकनीक में सुधार के साथ, वह और उंचाइयों तक पहुंच सकती हैं।



Bill Atkinson, architect of the modern Mac interface, passes away at 74

John Xavier

Bill Atkinson, a pioneering software engineer whose groundbreaking work underpinned the look and feel of Apple's seminal computers, died at his Portola Valley home on Thursday (June 5, 2025). He was 74.

His family confirmed in a Facebook post that he passed away surrounded by family after a lengthy battle with pancreatic cancer.

Atkinson, Apple's 51st employee, joined the company in 1978, abandoning his PhD in neurobiology at the University of Washington after being persuaded

by co-founder Steve Jobs. His entrance marked the beginning of Apple's move toward graphical computing.

Atkinson's design of QuickDraw, a graphics library that efficiently rendered text, shapes, and images on screen, laid the foundation for the graphical user interfaces of both the Lisa (1983) and Macintosh (1984) desktop computers.

He also introduced interface staples like the pull-down menus, the double-click gesture, the selection lasso, and the rounded-corner rectangle – elements now universal in digital design.

"We are deeply saddened by the passing of Bill Atkinson," Apple CEO Tim Cook posted on social platform X.

"He was a true visionary whose creativity, heart, and groundbreaking work on the Mac will forever inspire us. Our thoughts are with his loved ones."

Launch of HyperCard

Atkinson's creative flair was most visible in MacPaint, the digital art application bundled with the Macintosh. It gave everyday users pixel-level drawing control and introduced tool palettes that were revolutionary for non-technical users.



Bill Atkinson joined Apple in 1978, it marked the beginning of the company's move toward graphical computing. WIKICOMMONS

His description of himself as "a cross between an artist and an inventor" couldn't ring truer.

In 1987, Atkinson launched HyperCard, one

of the earliest success stories in hypermedia software and a direct precursor to the World Wide Web. HyperCard brought programming and data linkage

to non-programmers. After Mr. Jobs left Apple in 1985, Atkinson remained to complete HyperCard and secured its release as a bundled feature in Macintosh systems.

He departed Apple in 1990 to co-found General Magic, an innovative but commercially premature handheld computing ven-

ture that anticipated the smartphone revolution.

In later years, Atkinson found a parallel life in nature photography, creating striking close-up images of stones and launching a book, *Within the Stone* (2004).

He remained active in creative and tech communities, attending events like the burning man festival and sailing trips well into his late seventies.

His wide circle of family survives him, including his wife Jingwen Cai, two daughters, two stepchildren, and siblings.

Atkinson's legacy is woven into nearly every modern interface, from the

icons we click to paint apps

we sketch in, to the hyperlinks we follow on the web. His genius broke the barrier between text and visuals, and his code made computers accessible, intuitive, even beautiful for millions.

Atkinson's death marks the end of a Silicon Valley era. Many of his innovations – QuickDraw, MacPaint, HyperCard – have faded into the architecture of modern software, but their DNA persists. Without his willingness to reimagine the user experience, personal computing might never have become so widely embraced.



Dhoni among seven players inducted into **ICC's Hall of Fame**

PCS

Press Trust of India

LONDON

Former India captain Mahendra Singh Dhoni was inducted into the ICC's Hall of Fame for 2025 along with six other cricketers, including two female players, here on Monday. Dhoni is the 11th Indian to make the elite club.

Dhoni was joined by Australia's Matthew Hayden, South African duo of Graeme Smith and Hashim Amla as well as former New Zealand skipper Daniel Vettori as the five male cricketers in the list.

Also inducted were former England women's wicketkeeper-batter Sarah Taylor and ex-Pakistan captain Sana Mir.

The ICC hailed Dhoni as a player who excelled not just in numbers but also in "extraordinary consistency, fitness and longevity".

Trailblazer

"Celebrated for his calm under pressure and unmatched tactical nous, but also a trailblazer in the shorter formats, M.S. Dhoni's legacy as one of the

game's greatest finishers, leaders and wicketkeepers has been honoured with his induction into the ICC Cricket Hall of Fame," said an ICC statement.

"With 17,266 international runs, 829 dismissals and 538 matches across formats for India, Dhoni's numbers reflect not just excellence but extraordinary consistency, fitness and longevity," it added.

"Dhoni's ODI legacy is studded with records, including the most stumpings in the format (123), the highest individual score by a wicketkeeper (183 not out), and the most matches as captain for India (200), to name a few.

"But the crowning moment of his career came in 2011, when he led India to World Cup glory after a 28-year wait," the statement elaborated.

"His glove work defied convention. Dhoni's technique behind the stumps was unorthodox, yet extraordinarily effective. He turned wicketkeeping into an art form of its own, effecting run-outs off deflections, completing stump-

ings in the blink of an eye, and pulling off catches with a style all his own," the ICC said.

Recalling India's title win in the inaugural edition of the T20 World Cup in 2007, the said it made Dhoni "one of the most influential captains the game has ever seen".

"The victory not only sparked a new era in Indian cricket but confirmed that the future of its leadership was in safe hands. What followed was a period of sustained success across formats and the rise of Dhoni as one of the most influential captains," the ICC said.

Dhoni, who led India to the T20 World Cup win in 2007, ODI World Cup victory in 2011 and the Champions Trophy in 2013, said "it is an honour to be named in the ICC Hall of Fame, which recognises the contributions of cricketers across generations and from all over the world. To have your name remembered alongside such all-time greats is a wonderful feeling. It is something that I will cherish forever".



Portugal fights back to edge Spain on penalties, wins second title

NATIONS LEAGUE

IFCS

Agence France-Presse

MUNICH

Ruben Neves scored the decisive spot kick after Alvaro Morata missed as Portugal beat Spain 5-3 via penalties on Sunday, following a 2-2 draw, to claim its **second Nations League title**.

Portugal twice went behind in regulation time but fought back to level the scores. After 21 minutes, Martin Zubimendi put Spain in front. The brilliant Nuno Mendes levelled things up five minutes later. Mikel Oyarzabal put *La Roja* back in front just before the break.

Cristiano Ronaldo equalised with 61 minutes gone, adjusting quickly after a Mendes cross was deflected into the air, muscling past Marc Cucurella



Sweet success: It was the third major triumph for Portugal. GETTY IMAGES

and volleying the dropping ball home.

Ronaldo was subbed off before full-time with a cramp. Even though Portugal had the better of extra time, the match went to penalties. Both sides con-

verted their first three spot kicks. Mendes buried Portugal's fourth, before Morata stepped up and shot straight at Diogo Costa. Neves nervelessly converted in front of the red and green of the Portugal fans.

The results: Final: In Munich: Portugal 2 (Mendes 26, Ronaldo 61) drew with Spain 2 (Zubimendi 21, Oyarzabal 45) aet. Portugal won 5-3 on penalties.

Third-place playoff:

In Stuttgart: Germany 0 lost to France 2 (Mbappe 45, Olise 84).

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