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MONTHLY CURRENT AFFAIRS

FOR UPSC CIVIL SERVICE EXAMINATION

MARCH 2025



RAISINA
DIALOGUE



$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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UNESCO Recognition for Indian Properties

What's the News?

India has recently added six new sites to UNESCO's Tentative List, a key step before they can be nominated as World Heritage Sites.



Site	Key Features
Kanger Valley National Park (Chhattisgarh)	Rich biodiversity, limestone caves, waterfalls, and dense forests.
Mudumal Megalithic Menhirs (Telangana)	Prehistoric burial structures; important for archaeology.
Ashokan Edict Sites	Rock and pillar inscriptions from Ashoka's reign; reflect ancient governance and religion.
Chausath Yogini Temples	Unique circular temples with 64 Yogini idols; linked to Tantric worship.
Gupta Temples (North India)	Early temple architecture with detailed carvings from the Gupta period (4th–6th century CE).
Palace-Fortresses of the Bundelas (MP & UP)	Fortified royal structures; blend of Rajput and Mughal styles.

What is the Tentative List?

- It's a list of sites a country plans to nominate for UNESCO World Heritage status.
- Inclusion here is a mandatory first step before official nomination.
- India now has 62 such sites on the list.

India's Current UNESCO World Heritage Sites (as of 2024)

- Total: 43
 - Cultural: 35 (e.g., Taj Mahal, Jaipur City)
 - Natural: 7 (e.g., Kaziranga, Western Ghats)
 - Mixed: 1 (Khangchendzonga National Park)
- Latest addition: Moidams of the Ahom Dynasty (Assam) in 2024.



About UNESCO World Heritage Sites

- Recognized for cultural, natural, or mixed value with global importance.
- Started in 1972 under the World Heritage Convention.
- Purpose: Preserve heritage, protect biodiversity, promote sustainable tourism, and encourage global cooperation.

Kamba Ramayana

Kamba Ramayana Recitals to Be Promoted in Tamil Nadu

What's the News?

The Ministry of Culture has launched an initiative to preserve and promote Kamba Ramayana recitals across Tamil Nadu.

About Kamba Ramayana (Ramavataram)

- A 12th-century Tamil epic written by Kambar, based on Valmiki's Sanskrit Ramayana.
- Patron: Thiruvennai Nallur Sadayappa Vallal, whose name appears every 1,000 verses in the text.
- It's a literary masterpiece in Tamil, with artistic and cultural adaptations of the original Ramayana.
- Considered one of the greatest works of Tamil literature.



About Kambar

- Title: Kavichakravarthy (Emperor of Poets).
- Lived during the Chola dynasty, under Kulothunga III's reign.
- His works reflect Vaishnavite influence and contain references to Ramanuja, the renowned philosopher.
- His Ramavataram earned him royal recognition and a lasting legacy in Tamil literary history.

Jadayaswamy Festival

Jadayaswamy Festival Celebrated by Badagas of Nilgiris

What's the News?

The Jadayaswamy Festival, a key religious event of the Badaga community, was recently celebrated in Jackanarai village near Kotagiri, Tamil Nadu.

About the Jadayaswamy Festival

- Dedicated to Jadayaswamy, a revered deity of the Badagas.
- Held annually, with firewalking as a major ritual symbolizing devotion and faith.
- Plays a vital role in preserving the cultural identity of the Badagas.



Who are the Badagas?

- Largest indigenous group in the Nilgiris, Tamil Nadu.
- Migrated from Mysore in the 16th century after the fall of the Vijayanagar Empire.
- Speak Badaga (Badugu) - a Dravidian language with roots in old Kannada and influences from Tamil, Sanskrit, and English.
- Known for their high literacy in Tamil and English.
- Population (1991 Census): Around 1.45 lakh.

Revival of Vikramshila University

Vikramshila University Revival Plans in Bihar

What's the News?

After reviving Nalanda University, the government is now working to restore Vikramshila University, another ancient Buddhist learning center in Bihar.



About Vikramshila University

- Location: Bhagalpur, Bihar, on a hill by the Ganga river.
- Founded by: King Dharmapala of the Pala dynasty in the late 7th century.
- Significance: One of the three top Buddhist universities of ancient India, along with Nalanda and Odantapuri.

Academic & Religious Importance

- Specialization: Known for Tantrayana Buddhism, which included tantric rituals and esoteric teachings.
- Subjects Taught: Theology, philosophy, grammar, metaphysics, medicine, and more.

PEPSU Muzhara Movement

PEPSU Muzhara Movement: A Landmark Agrarian Struggle What's the News?

March 19 marks the anniversary of the PEPSU Muzhara Movement, a major farmers' struggle in Punjab that demanded land rights for tenant farmers.



About the PEPSU Muzhara Movement

- Took place in the Patiala and East Punjab States Union (PEPSU).
- Started in the 1930s, gained strength post-independence, and led to land reforms in 1952.
- Focus: Rights of muzharas (tenant farmers) who faced exploitation by landlords (jagirdars).

Key Demands & Issues

- Land ownership rights for tenant farmers.
- Abolition of feudal practices and excessive rents.
- Redistribution of land to those who cultivated it.

Impact & Outcome

- Raised awareness about farmers' rights.
- Influenced land reform laws in 1952, giving land ownership to muzharas.
- Seen as a turning point in Punjab's agrarian history.

Who Were the Muzharas?

- Tenant farmers who tilled land for generations without ownership.
- Under British rule, many lost their land and became dependent on feudal landlords called biswedars.

Support & Legacy

- Backed by peasant organizations and political groups.
- Remains a symbol of resistance against agrarian oppression and a milestone in land reform legislation in India.

Women Empowerment in India

International Women's Day 2025

Date: 8th March

Theme: “For ALL Women and Girls: Rights. Equality. Empowerment” — emphasizing the need for gender equality and inclusive empowerment.



What is Women Empowerment?

Women's empowerment means helping women gain awareness of gender inequality and enabling them to have equal say and opportunities in society, workplaces, and families.

Challenges Faced by Women in India

- Gender Discrimination & Patriarchy:
- India ranks 127th/146 in the Global Gender Gap Index 2023 due to systemic bias and traditional norms.
- Low Workforce Participation:
 - Female Labour Force Participation Rate: 35.6% (vs global avg. ~50%)
 - Women do 5x more unpaid domestic work than men.
- Violence Against Women:
 - 29.3% of married women (18–49 years) face domestic violence (NFHS-5).
 - Rising cases of harassment, assault, cyber crimes.
- Underrepresentation in Politics:
- Despite the Women's Reservation Bill (2023) promising 33% seats, women are still underrepresented in legislatures.
- Limited Access to Education & Skills:
 - Female Literacy Rate: 71.5% (vs 87.4% for men).
 - Girls lag in vocational and higher technical education.
- Female Foeticide & Infanticide:
 - Sex Ratio at Birth: 929 girls/1000 boys.
 - ~4.6 lakh female foeticides per year (Lancet, 2023).
- Healthcare Gaps:
 - Maternal Mortality Rate: 97 per 100,000 live births (SDG goal: <70).
 - Poor access to reproductive and maternal healthcare.
- Digital Divide:
 - Only 33% of women have used the internet vs 57% men.
 - In rural India, only 25% of women are online.

Way Forward for Women Empowerment

Stronger Laws & Fast-track Justice:

- Strict enforcement of laws like the POSH Act, Dowry Prohibition Act, Domestic Violence Act.
- Speedy justice through fast-track courts.

Boosting Economic Participation:

- Promote remote work, childcare support.
- Enforce Equal Pay Laws, support women entrepreneurs.

Better Education & Digital Skills:

- Promote girls in STEM via scholarships (Vigyan Jyoti).
- Improve digital literacy through Digital Saksharta Abhiyan (DISHA).

Improved Safety & Infrastructure:

- Use of Nirbhaya Fund for safe public transport, CCTVs, and lighting.
- Recruit more women in police forces.

Greater Political & Corporate Representation:

- Implement Women's Reservation Bill in Parliament.
- Enforce women's presence in company boards (SEBI norms).

Shift in Social Mindset:

- Public awareness to challenge patriarchy.
- Involve men in caregiving to reduce women's unpaid work burden.

Key Government Schemes

Education

- Beti Bachao Beti Padhao (BBBP): Promotes girls' education and gender equality.
- Gross Enrollment Ratio: Female GER > Male since 2017-18.
- Women in STEM: 42.57% of STEM students are girls.
- Vigyan Jyoti & various scholarships benefit over 10 lakh girl students.

Health & Nutrition

- PM Matru Vandana Yojana (PMMVY): ₹17,362 crore to 3.81 crore women.
- MMR dropped from 130 to 97 (2014-2020).
- Jal Jeevan Mission: Potable water to 15.4 crore homes.
- Swachh Bharat Mission: Built 11.8 crore toilets.
- Ujjwala Yojana: Over 10.3 crore LPG connections to women.

Economic Empowerment

- PM Jan Dhan Yojana: 55% of accounts held by women.
- Stand-Up India: 84% of loans to women entrepreneurs.
- MUDRA Loans: 69% given to women-led businesses.
- SHGs under NRLM: 10 crore women in 9 million groups.
- Bank Sakhis: Women agents processed \$40 million in 2020.
- SIDBI Fund: 10% reserved for women-led startups.

Conclusion

Women's empowerment is essential not just for social justice but also for economic progress and inclusive development. With legal reforms, targeted schemes, and a shift in mindset, India can move closer to achieving true gender equality.

Obesity Epidemic In India

Obesity in India: A Growing Public Health Concern

Context:

A Lancet study warns that by 2050, nearly one-third of Indians could be overweight or obese.

What is Obesity?

- **Definition:** WHO classifies obesity as a chronic disease involving excess body fat that harms health.
- **Measurement:**
 - **BMI (Body Mass Index):**
 - Overweight: BMI \geq 25
 - Obese: BMI \geq 30
 - Morbidly Obese: BMI \geq 35
 - Waist circumference is also used for accuracy.



Why is Obesity Rising in India?

Poor Diet & Less Exercise

- Widespread use of ultra-processed food (UPF).
- 50% of Indians don't meet recommended physical activity levels (WHO).

Urban Lifestyle

- Lack of green spaces, walkable roads, and high pollution.
- Desk jobs, screen time, and eating out add to the problem.

Socioeconomic Issues

- Unhealthy food is cheaper and more accessible.
- 55% of Indians can't afford a healthy diet (SOFI 2024).

Psychological & Hormonal Factors

- Stress, emotional eating, PCOS, and thyroid disorders contribute to obesity, especially among women.

Key Findings: Lancet Study 2024

- India (2021): Highest number of overweight/obese youth, surpassing China & the US.
- Adolescent Obesity (15-24 years):
 - Men: 1.68 Cr (2021) → 2.27 Cr (2050)
 - Women: 1.3 Cr (2021) → 1.69 Cr (2050)
- Childhood Obesity also rising rapidly.



Why Obesity Is a Major Concern

Social Normalization: Often seen as a personal issue, not a public health crisis.

Economic Impact:

- Cost India \$28.95 billion in 2019 (~1.02% of GDP).
- By 2030, this could rise to 1.57% of GDP.

Health Risks:

- Higher risk of Type-2 diabetes, heart diseases, stroke, and cancers.
- Causes 3.4 million global deaths yearly.
- **Double Burden:** Obesity + undernutrition coexist, especially in low-income groups.

Way Forward

Recognize Obesity as an NCD

Include it in national health policy and NCD programs.

Awareness & Education

Launch a National Obesity Programme with:

- School interventions
- Workplace fitness campaigns
- Taxes on unhealthy foods (HFSS, UPF)

Promote Physical Activity

- Develop parks, bike lanes, and public gyms.
- Encourage fitness at schools and offices.

Regulate Junk Food

- Higher taxes on UPF (recommended by Economic Survey 2024–25).
- Ban unhealthy food ads for children.
- Promote healthy school canteens.

Screen & Treat Early

- BMI and waist checks in routine health tests.
- Create a national obesity registry to monitor trends.

Make Healthy Food Affordable

- Subsidies for nutritious food.
- Use CSR funds and food delivery platforms for outreach.

Conclusion

Obesity is a silent epidemic with serious health and economic costs.

A coordinated national response, combined with lifestyle changes, can help India tackle this growing crisis and safeguard future generations.

Student Suicides in India

Context:

The Supreme Court of India has set up a Task Force to address student suicides and improve mental health support in higher educational institutions.

Why Now?

- Student suicide cases have overtaken farmer suicides, highlighting a severe mental health crisis among youth.
- The move follows a case related to two SC-category students from IIT Delhi who reportedly died by suicide.
- The Delhi High Court had dismissed the plea by their parents, prompting the SC to intervene.

The Indian EXPRESS

STUDENT SUICIDES OVER FIVE YEARS

YEAR	Total Student Suicides	Percent of male student suicides	Percent of female student suicides
2017	9,905	59.71%	47.56%
2018	10,159	52.85%	47.15%
2019	10,335	53.82%	46.17%
2020	12,526	55.62%	44.38%
2021	13,089	56.51%	43.49%

About the Task Force

- Headed by: Former SC Judge Justice S Ravindra Bhat
- Members: 10-member panel
- Mandate:
 - Investigate causes like ragging, discrimination, and mental health stigma.
 - Review and improve laws and institutional policies.
 - Recommend ways to create inclusive, supportive learning environments.

Why Are Students Dying by Suicide?

Academic Pressure

- High expectations, intense competition, and fear of failure lead to burnout.

2. Mental Health Issues

- 1 in 7 youth (15–24 yrs) faces poor mental health.
- Stigma prevents many from seeking help.

Family Problems

Domestic issues, financial stress, and overbearing parental pressure can lead to a feeling of entrapment.

Social Isolation

Bullying, peer pressure, and lack of friends increase loneliness.

Inadequate Counseling

- India has only 0.75 psychiatrists per 100,000 people, far below the ideal (3 per 100k).
- Most campuses lack proper mental health support systems.

Financial Stress

High cost of education and pressure to support families can push students to despair.

Substance Abuse

Drugs and alcohol can worsen mental health and increase impulsivity.

Way Forward

Strengthen Anti-Ragging Laws

- Enforce stricter punishments for violators.
- Regular monitoring and anonymous reporting channels.

Normalize Mental Health Conversations

- Parents and teachers should talk openly with students.
- Avoid pushing unrealistic expectations.

Improve Counseling in Campuses

- Recruit trained counselors.
- Set up peer support and student wellness cells.

Introduce Stress Management Programs

- Mindfulness, yoga, and emotional resilience training in curricula.
- Example: UK's "Mindfulness in Schools" program showed reduced anxiety and better focus.

Expand Helplines & Mental Health Services

- Increase funding for institutional mental health programs.
- Promote 24/7 helplines for students in crisis.

Conclusion

Rising student suicides reflect a deep mental health crisis. A multi-stakeholder approach—involving government, educators, and families—is essential. By creating supportive, pressure-free academic spaces, India can safeguard its youth and ensure their mental well-being.

Hmar and Zomi Tribe

Context:

In a positive development after recent ethnic clashes in Manipur, leaders of the Hmar and Zomi tribes have decided to cooperate for restoring peace in the region.

Who are the Zomi?

- The Zomi (meaning "Zo people") include various ethnic groups like the Mizo, Kuki, and Chin.
- Found across Manipur, Mizoram, Assam, Nagaland, as well as Myanmar and Bangladesh.
- Speak dialects from the Kuki-Chin language family.

Culture & Beliefs:

- Festival: Chapchar Kut - celebrated after clearing fields for jhum cultivation.
- Religion: Once animists, now mostly Christian (Baptist, Presbyterian).

Who are the Hmar?

- Also called Mhar or Mar, the Hmar belong to the larger Chin-Kuki-Mizo group.
- Primarily live in Manipur, Mizoram, Assam, Tripura, Meghalaya, and Chittagong Hill Tracts (Bangladesh).
- Speak the Hmar dialect, part of the Kuki-Chin-Mizo language group.



Lifestyle & Culture:

- Origin: Folk songs trace their roots to Sinlung (believed to be in China).
- Occupation: Mostly slash-and-burn cultivators (jhum).
- Housing: Build wooden houses on hilltops.
- Festival: Sikpui Ruoi - a post-harvest celebration with music and dance.
- Social Setup:
 - Follow a clan-based system.
 - Led by a Village Chief known as the “Lal.”

Why This Matters?

- The decision by these tribes to come together marks a step toward ethnic reconciliation in conflict-prone Manipur.
- Tribal unity is vital to preserve peace, promote development, and prevent further violence in the northeast.

Takeaway for UPSC

This issue highlights the importance of:

- Ethnic diversity in Northeast India
- Grassroots peacebuilding efforts
- The role of tribal leadership and cultural identity in conflict resolution

Koch-Rajbongshis

Context:

The Koch-Rajbongshi community, one of the largest ethnic groups in western Assam and northern West Bengal, has been demanding ST status for decades, citing their indigenous roots and socio-economic backwardness.

Who are the Koch-Rajbongshis?

- Also known as Rajbanshi/Rajbongshi, meaning “royal community.”
- Historical link to the Koch dynasty, a powerful medieval kingdom in the region.

Geographical Spread:

- India: Lower Assam, North Bengal, Eastern Bihar
- Nepal: Terai region
- Bangladesh: Rangpur division, parts of northern districts
- Bhutan



Language & Culture:

Language:

- Speak Rajbongshi (also called Kamtapuri, Goalpariya, Tajpuri) — part of the Indo-Aryan language group.
- Religion:
 - Initially animists
 - Later adopted Hinduism (Sanatana Dharma)
 - A small section also practices Christianity

Cultural Identity:

- Rich in folklore, traditional music, dance, and distinctive attire.

Demand for ST Status - Why?

They seek recognition as an indigenous tribe, citing:

- Cultural distinctiveness
- Socio-economic marginalization
- Historical neglect in mainstream development policies

UPSC Mains Angle (GS Paper 2 & 3):

- Link with Tribal Welfare, Identity Politics, Scheduled Tribe Recognition Process, and Issues in Northeast India.
- Raises questions on:
 - Criteria for ST status
 - Impact on existing tribal groups
 - Balancing affirmative action with social justice

Gold Discovery In Indus River

Context:

- Gold reserves discovered in Attock district, Punjab province of Pakistan.
- Geologists believe the placer gold is carried downstream by the Indus River from the Himalayas in India.



Picture: YouTube

River Route and Tributaries:

- Flows through:
- Tibet → Ladakh (India) → Baltistan & Gilgit (PoK) → Pakistan
- Cuts through:
- Ladakh Range, forms a deep gorge near Gilgit
- Major Pakistani Tributaries (Panjnad):
 - Satluj, Beas, Ravi, Chenab, Jhelum
- Tributaries in Kashmir Region (India):
 - Zaskar, Nubra, Shyok, Hunza

Key Concepts for UPSC:

- Placer Gold:
 - Gold deposited by river action, often found in alluvial sediments downstream.
- Transboundary River Dynamics:
 - Importance of Indus Waters Treaty, strategic and resource implications for India-Pakistan.
- Prelims Focus:
 - Origin, tributaries, confluences, terminus, nicknames, and regional importance.

Petrification

Context:

- A well-preserved petrified fossil discovered near Barmasia village, Pakur district, in Rajmahal Hills, Jharkhand.
- Highlights the region's rich geological and fossil history.

Definition:

- Petrification is the process of fossilization where organic matter is replaced by minerals, turning it into stone.



About Rajmahal Hills:

- Located in eastern Jharkhand, geologically significant.
- Known for Jurassic-era plant fossils, part of the Rajmahal Formation.
- Important for studies in paleobotany and Indian plate tectonics.

UPSC Relevance:

- Prelims: Definition of petrification, minerals involved (SiO_2 , CaCO_3), location of Rajmahal Hills.
- Mains (GS-1: Geography / GS-3: Environment): Significance of fossils in understanding geological history.

Wular Lake

Context:

- Wular Lake in Jammu & Kashmir is facing shrinkage and siltation, increasing flood risk for the Kashmir Valley.

Ecological & Economic Significance:

Flood Regulation

- Acts as a natural reservoir, regulates Jhelum's flow, reduces flood impact downstream.

Biodiversity Hotspot

- Habitat for Himalayan monal, fish species, and migratory birds of the Central Asian Flyway.

Livelihood Source

- Supports fishing, agriculture, willow plantations, and tourism (boating, birdwatching).

Historical Importance

- Hosts Zaina Lank, an artificial island built by Sultan Zainul-Abidin in the 15th century.



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Issue

Impact

Siltation

Reduces water-holding capacity, affects aquatic life

Encroachments

Loss of lake area due to agriculture and settlements

Pollution

From untreated waste and excessive weed growth

Flood Risk

Reduced flood buffering for Kashmir Valley

Ana Sagar Lake

SC Orders Demolition of Seven Wonders Park in Ajmer

Why in News?

The Supreme Court has directed the Rajasthan government to demolish the illegal Seven Wonders Park built near Ana Sagar Lake due to environmental violations and breach of wetland protection laws.



About Ana Sagar Lake:

- Location: Ajmer district, Rajasthan
- Type: Man-made lake
- Built by: King Arnoraja (Ana), grandfather of Prithviraj Chauhan (1135–1150 AD)
- Water Source: Seasonal Luni River, originating from the Aravalli hills.

Historical Significance:

- Jahangir: Built Daulat Bagh garden next to the lake
- Shah Jahan: Constructed five marble pavilions (Baradaris) along the banks

Three Language Policy Under NEP, 2020

Tamil Nadu Rejects Three-Language Policy in NEP 2020

Tamil Nadu has opposed the Centre's three-language policy under NEP 2020, calling it a move to impose Hindi and rejecting the requirement to implement it in order to receive funds under PM SHRI scheme.

Tamil Nadu's Stand:

- Following a Two-Language Policy since 1968: Tamil + English
- Refuses to adopt Hindi, except in CBSE schools
- Wants to join PM SHRI but without adopting NEP 2020



Resistance Across India:

- Tamil Nadu: Historical opposition due to anti-Hindi agitations (1937, 1965)
- Karnataka, West Bengal: Also cautious about implementing Hindi
- North-South Divide: Southern states prefer regional languages; fear cultural dilution

Challenges in Implementing Three-Language Formula:

- Learning Gaps: ASER 2022-23 highlights poor language skills among students
- Lack of Teachers: Especially for third language instruction
- Financial Burden: States bear most education costs, while Centre gives only ~15%
- Federalism: States assert language policy is a state subject
- Cultural Concerns: Fear of losing local identity due to standardization

Way Forward:

- Prioritize Foundational Learning: Focus on regional language and English proficiency
- State Autonomy: Allow states flexibility in language education
- Promote Organic Multilingualism: Census 2011 shows 26% Indians bilingual, 7% trilingual
- Global Edge: English crucial for India's service sector success

Immigration and Foreigners Bill, 2025

Immigration and Foreigners Bill, 2025: A Modern Law with Controversies:-

The Immigration and Foreigners Bill, 2025 was introduced in Lok Sabha to replace outdated laws and strengthen immigration control, raising debates over its impact on rights and governance.

What is Immigration?

- Immigration: Movement of people to a foreign country for work, settlement, or study.
- Immigrants: People arriving in a new country.
- Emigrants: People leaving their home country.

Existing Laws Replaced:

The Bill repeals:

- Foreigners Act (1946)
- Registration of Foreigners Act (1939)
- Passport (Entry into India) Act (1920)
- Immigration (Carriers' Liability) Act (2000)



Key Features of the Bill:

- Nodal Ministry: Ministry of Home Affairs (MHA)
- Bureau of Immigration to be set up, led by a Commissioner
- Broad Powers to regulate foreigners' entry, stay, and exit
 - Can impose biometric checks, movement restrictions, and activity bans
 - Medical exams may be required

Offense	Punishment
Entering India without valid docs	Up to 5 years jail + ₹5 lakh fine
Visa overstaying	Up to 3 years jail + ₹3 lakh fine
Fake documents	2–7 years jail + ₹1–10 lakh fine

- **Colleges & hospitals** must report foreign students/patients
- **Carriers** (airlines, shipping) must share passenger data
 - Fine of ₹50,000 for non-compliance

Role of Global Bodies:

- UNHCR: Protects refugees and stateless persons
- IOM: Ensures safe and legal migration

Key Concerns:

- No appeal mechanism for foreigners denied entry
- May violate natural justice and fundamental rights
- Excessive government control, risking arbitrary detentions
- No clear distinction between illegal migrants and refugees
- Could discourage foreign students, workers, and tourists
- Fear of selective targeting and diplomatic tensions

Way Forward:

- Create independent appeal bodies
- Ensure proportional penalties
- Add humanitarian safeguards for refugees and asylum seekers
- Define rules clearly to prevent misuse of power

Conclusion:

The Immigration and Foreigners Bill, 2025, aims to update India's immigration system and boost border control. However, concerns around rights violations, judicial oversight, and economic impact have sparked debate. Balancing security with fair treatment will be key in shaping its final form.

Bills of Lading Bill, 2024

Context:

The Lok Sabha has passed the Bills of Lading Bill, 2024, replacing the outdated Indian Bills of Lading Act, 1856, to align with modern shipping and trade practices.

What is a Bill of Lading (BoL)?

A Bill of Lading is a key document in international shipping that:

- Acts as a receipt for goods received by the carrier.
- Serves as a contract of carriage, laying out transport terms.
- Is a document of title, allowing the holder to claim the goods at the destination.

It includes:

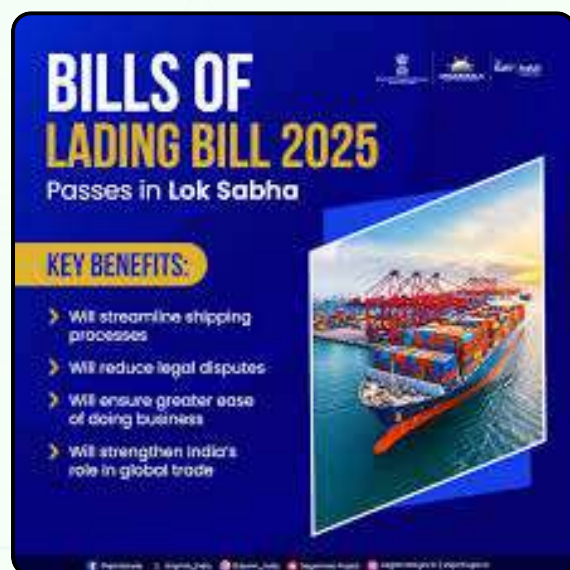
- Type, quantity & condition of goods
- Details of the shipper & receiver
- Delivery destination

Why Was a New Law Needed?

- The 1856 law had just 3 sections, unsuitable for today's complex global trade.
- Shipping practices have evolved, needing modern, comprehensive rules.

Objectives of the New Bill:

- Remove outdated colonial provisions
- Align with international shipping norms
- Reduce legal disputes in trade
- Improve India's image in global maritime commerce



Rupee Symbol Controversy

Context:

The Tamil Nadu government used the Tamil letter 'ரூ' (pronounced Roo, short for Roobai) instead of the official Rupee symbol ₹ in its 2025-26 state Budget, sparking a Centre-State political row.



What Is '₹'?

- It represents 'Roobai', the Tamil word for Rupee.
- Seen as a move to assert regional linguistic identity.
- Critics view it as a departure from nationally adopted standards.



Feature	Details
Designer	Udaya Kumar Dharmalingam (IIT-Guwahati, 2010)
Symbol Composition	Blend of Devanagari 'Ra' (₹) and Roman 'R'
Symbolism	Two parallel strokes signify national flag & economic stability
Global Recognition	Ensures distinct identity in international finance
Adoption Date	Officially adopted on July 15, 2010
Unicode Code	U+20B9
Previous Representation	"Rs" or "INR" – caused confusion with other South Asian currencies

Political & Constitutional Angle

- Seen as a state assertion of linguistic and cultural autonomy.
- Raises questions of federal coordination in official documentation.
- The Centre has not commented officially, but the move has stirred debates.

Conclusion

While Tamil Nadu's use of '₹' reflects regional pride, it brings forth questions about national currency representation and uniformity in financial symbols. The issue underscores the ongoing Centre-State tensions over language and federal autonomy.

Electors Photo Identification Card (EPIC)

Context:

West Bengal Chief Minister has alleged that the Election Commission of India (ECI) is enabling voter duplication by assigning identical EPIC numbers to voters across multiple states, raising questions over electoral integrity.



Election Commission's Role in Voter List Management

- Maintains Electoral Roll: Responsible for free, fair, and fraud-free elections.
- Handles Registration & Migration: Uses ERONET - a centralized web-based system for:
 - New voter registration
 - Address change/migration
 - Deletion of duplicate or deceased entries

Issues & Concerns

- Voter Duplication may undermine free and fair elections.
- Raises concerns over data synchronization between states.
- Highlights need for stronger verification and cross-state coordination in ERONET.

Way Forward

- Audit and rectify duplicate entries in collaboration with states.
- Implement Aadhaar-linking with voter ID (voluntary as per Supreme Court).
- Ensure transparency and accountability in voter roll management.

Global Free Speech Index 2024

Context:

A global survey by The Future of Free Speech has ranked India 24th out of 33 countries in terms of public support for free speech.

Concerns in India

- Internet shutdowns, journalist arrests, and censorship laws cited by international observers
- Chilling effect on civil society, press freedom, and dissent
- Contrasting public perception vs. ground realities indicates possible misinformation or limited awareness



Conclusion

India's low ranking calls for introspection on:

- Legal safeguards for expression
- Media independence

Protection of dissent and satire

- As a democracy, balancing national security with individual liberties is essential for sustaining free speech.

India's Maritime Policy

Context:

India has unveiled MAHASAGAR (2025)—Mutual and Holistic Advancement for Security and Growth Across Regions, expanding upon its earlier SAGAR (2015) initiative to deepen maritime cooperation across the Global South.



Why MAHASAGAR?

- Expanding Strategic Vision: Goes beyond IOR to Indo-Pacific & Global South.
- Countering China: Responds to BRI, Maritime Silk Road, and China's naval bases.
- Holistic Threat Response: Tackles cyber warfare, piracy, climate change, illegal maritime claims.
- Support for Blue Economy: Enhances sustainable trade and digital partnerships.

Key Features of MAHASAGAR

- Unveiled in Mauritius, reaffirming its centrality to India's maritime vision.
- Emphasizes:
 - Maritime domain awareness (MDA)
 - Disaster relief & humanitarian assistance (HADR)
 - Capacity building and infrastructure
 - Cultural and economic diplomacy

Geopolitical Implications

- Aligns with Indo-Pacific Strategy & QUAD
- Strengthens India's global leadership, esp. in G20, IORA, BRICS
- Boosts ties with island nations (Mauritius, Maldives, Seychelles)
- Fosters South-South Cooperation

Way Forward

- Strengthen Regional Platforms: Eg. IORA, BIMSTEC
- Enhance MDA & Surveillance: Eg. IFC-IOR in Gurugram
- Boost HADR Preparedness: Use Andaman & Nicobar as a rapid-response hub
- Invest in Infrastructure: Eg. Agalega Island airstrip (Mauritius, \$192M)
- Uphold UNCLOS 1982: Promote rule-based maritime order globally

Conclusion

The MAHASAGAR policy marks a strategic shift from a regional to a global maritime vision, reinforcing India's image as a trustworthy, empathetic partner in the Global South—balancing security, economic growth, and sustainable development.

United Nations (UN) Reforms

Context:

As the UN approaches its 80th anniversary in 2025, Secretary-General Antonio Guterres has launched the UN80 Initiative amid growing financial and structural challenges.



Why the UN Needs Reform

- Financial Crisis: 7th consecutive year of liquidity issues
 - 2025 Budget: \$3.7 billion
 - Top Contributors:
 - 🇺🇸 US - 22% share, owes \$1.5 billion
 - 🇨🇳 China - 20% share, pledged full payment (timeline unclear)
- Spending Cuts:
 - 20% budget reduction
 - Hiring freeze
- Payment Uncertainty: Only 73 nations paid dues as of March 2025

Structure of the United Nations

- General Assembly (UNGA) - All member states; deliberative body
- Security Council (UNSC) - 5 permanent (P5) + 10 non-permanent members
- ECOSOC - Coordinates global economic/social policies
- ICJ - Settles legal disputes between states
- Secretariat - Administrative organ led by the UN Secretary-General

🇮🇳 India & the UN: A Snapshot

- Founding Member: San Francisco Conference, 1945
- Peacekeeping Pioneer: Largest troop contributor - 2.4 lakh+ troops in 49 missions
- Women in Peacekeeping: First to deploy all-women unit (Liberia, 2007)
- UNSC Non-Permanent Member: 8 times, most recently in 2021-22
- Champion of Decolonization & Anti-Apartheid Movements

Issue	India's Stand
Outdated Structures	UNSC reflects post-WWII order, not current geopolitics
Veto Power Imbalance	P5's dominance affects credibility & decision-making
Underrepresentation	Asia, Africa, Latin America lack voice in UNSC
Slow Reform Progress	Intergovernmental Negotiations (IGN) need acceleration
North-South Divide	Inequity in climate finance & development policies
Ineffective Crisis Response	Weak handling of COVID-19, Russia-Ukraine war, terrorism

Way Forward

- **UNSC Expansion:** Push for equitable and democratic representation
- **Sustainable UN Funding:** Propose reserve funds, diversify contributions
- **UNGA Reforms:** Suggest bicameral structure & stronger resolution enforcement
- **Alliances for Reform:** Leverage G4, AU, and Global South platforms
- **Multilateral Engagement Beyond UN:** Expand influence in WTO, NAM, G20

Conclusion

The UN80 Initiative is a timely move to reinvigorate the United Nations. For India, a long-standing contributor and reform advocate, meaningful restructuring—especially in the UNSC—is vital to ensure the organization remains inclusive, effective, and representative of today's global realities.

India-US Extradition Treaty

Context:

Former U.S. President Donald Trump announced that his administration had approved the extradition of Tahawwur Rana to India, marking a significant development in the 26/11 Mumbai attacks case.



Who is Tahawwur Rana?

- Background: Pakistani-origin Canadian national, currently in U.S. custody.
- Allegations:
 - Accused of aiding Lashkar-e-Taiba (LeT) in the 2008 Mumbai attacks.
 - Charged under IPC and UAPA for murder and waging war against India.

India-US Extradition Treaty (1997)

- Purpose: Enables extradition of individuals charged with serious offences.
- Scope:
 - Covers crimes with minimum punishment of one year, including financial offences.
 - Applies regardless of where the crime occurred.
- Track Record:
 - Only 11 individuals extradited from the US to India (2002-2018).
 - ~60 requests still pending.

Significance of Rana's Extradition

- Could provide critical evidence on the 26/11 conspiracy.
- Demonstrates growing Indo-US legal cooperation in counter-terrorism.
- May boost India's pursuit of other fugitives, e.g., David Headley, Vijay Mallya, Nirav Modi.

US Withdrawal from Loss and Damage Fund (LDF)

Context:

The United States has withdrawn from the Board of the Loss and Damage Fund (LDF), raising concerns over the future of climate finance for vulnerable nations.

Funding & Contributions

- Total pledged so far: ~\$750 million
- US Contribution: \$17.5 million
- Significance: Developing nations, especially Small Island Developing States (SIDS), have long demanded support from historically high emitters.



Why It Matters

- LDF is seen as a symbolic victory for the Global South.
- US withdrawal undermines equity and trust in climate negotiations.
- Reinforces the need for a legally binding mechanism for climate reparations.

Raisina Dialogue

Context:

The 10th edition of the Raisina Dialogue will be held from 17-19 March 2025 in New Delhi.

Feature	Details
Name Origin	Named after Raisina Hill, seat of Indian government and Rashtrapati Bhavan
Launched In	2016
Nature	India's flagship conference on geopolitics and geoeconomics
Organizers	<ul style="list-style-type: none">Observer Research Foundation (ORF)Ministry of External Affairs (MEA), Government of India Objective Foster dialogue on global strategic and economic issues to build consensus, cooperation, and shared futures

Key Takeaways

- Platform for interaction among leaders, diplomats, scholars, and strategic thinkers from across the globe.
- Discusses themes such as emerging technologies, regional security, multilateralism, energy transitions, and global order.
- Reinforces India's role as a thought leader in global affairs and diplomacy.



Squad Alliance

Context:

Amid rising tensions with China, the Philippines is pushing for India's inclusion in a proposed informal security grouping named the "Squad."

Strategic Significance

- Reinforces the Indo-Pacific security architecture alongside existing groupings like QUAD.
- Reflects increasing alignment between India and Southeast Asian countries on freedom of navigation and rules-based international order.
- Could strengthen India's Act East Policy and maritime diplomacy in the region.



Reciprocal Tariffs

Context:

On April 2, 2025, US President Donald Trump announced the imposition of reciprocal tariffs on India and other countries.

Key Impacts

- Protects Domestic Industries: Makes foreign imports costlier, aiding local producers.
- Raises Consumer Prices: Imported goods become expensive, reducing affordability and variety.
- Affects Diplomacy: Can worsen bilateral ties and trigger retaliatory trade wars.
- Trade Negotiations: May push countries to mutually reduce tariffs and resolve disputes.

Implication for India

- Affects key export sectors like textiles, pharma, and auto-parts.
- Could impact India-US trade ties unless resolved through dialogue or WTO mechanisms.



Centre Grants 'Navratna Status' to IRCTC, IRFC

IRCTC & IRFC Get Navratna Status

The Central Government has granted Navratna status to two key public sector undertakings –

Indian Railway Catering and Tourism Corporation (IRCTC) and Indian Railway Finance Corporation (IRFC).

With this, the total number of Navratna PSUs in India has increased to 26.



What is Navratna Status?

It is a recognition given to top-performing Central Public Sector Enterprises (CPSEs), allowing them greater financial and operational autonomy.

Status	Eligibility Criteria
Maharatna (Highest Autonomy)	Must be a Navratna company Annual turnover of ₹25,000 crore+ (last 3 years) Net worth of ₹15,000 crore+ Net profit of ₹5,000 crore+ (last 3 years) Global operations or international presence Listed on Indian stock exchange with minimum prescribed public shareholding under SEBI regulations.
Navratna (Higher Autonomy)	Must be a Miniratna-I company Composite score of 60+ based on financial and operational performance. Can invest up to ₹1,000 crore or 15% of net worth without government approval
Miniratna (Basic Autonomy)	Category I: Profitable for 3 years & pre-tax profit of ₹30 crore+ Category II: Profitable for 3 years but with lower financial thresholds

Indian Diaspora

The Prime Minister inaugurated the 18th Pravasi Bharatiya Divas (PBD) convention in Bhubaneswar, Odisha, on January 9, 2025. The theme was “Diaspora’s Contribution to a Viksit Bharat.”

About Pravasi Bharatiya Divas (PBD):

- Initiated: 2003 under PM Atal Bihari Vajpayee.
- Frequency: Biennial (celebrated on January 9).
- Significance: Commemorates Mahatma Gandhi's return from South Africa (1915) and highlights the Indian diaspora's contributions.



What is a Diaspora?

- The term originates from Greek, meaning "dispersion."
- Initially used for Jewish migration, it now applies to any community maintaining cultural ties despite geographical separation.

Categories of Indian Diaspora:

- Non-Resident Indians (NRIs): Indian citizens living abroad.
- Persons of Indian Origin (PIOs): Foreign nationals with Indian ancestry.
- Overseas Citizens of India (OCIs): Foreign citizens with lifelong visa privileges in India.

Significance of the Indian Diaspora

With 35 million members across 125 countries, the Indian diaspora strengthens India's global influence through:

- Economic Contributions:
 - India received \$129.1 billion in remittances in 2024 (highest globally).
- Cultural Diplomacy:
 - Promotes Indian traditions, festivals, yoga, and Ayurveda worldwide.
 - Examples: Ramlila in Indonesia, Diwali in UK Parliament, International Yoga Day events.
- Political Influence:
 - Advocates for India-friendly policies in host nations.
 - Example: Indian-American groups lobbied for the US-India nuclear deal (2008).
- Knowledge & Social Impact:
 - Indian professionals excel in various global sectors.
 - Example: Indian doctors and nurses play key roles in UK & US healthcare.
- Global Image Building:
 - Success stories enhance India's reputation as a global leader.

Challenges Faced by the Diaspora

- Social Issues: Discrimination, racism, and integration challenges.
 - Example: Racial attacks on Indian students in Australia (2009-10).



- **Political & Legal Barriers:** Visa restrictions and limited rights in host countries.
 - Example: Gulf nations restrict property ownership and citizenship for Indians.
- **Geopolitical Risks:** Diaspora faces hardships during international crises.
 - Example: Indian students in Ukraine struggled during the Russia-Ukraine war.
- **Economic Exploitation:** Poor wages, job insecurity, and harsh work conditions.
 - Example: Migrant workers in Qatar suffer under the Kafala system.
- **Cultural Challenges:** Loss of heritage among younger generations.
 - Example: Indian-origin communities in Trinidad and Fiji struggle to preserve Hindi & Tamil.
- **Other Issues:**
 - **Policy Confusion:** OCI/PIO schemes caused confusion before their merger in 2015.
 - **High Remittance Fees:** Costly transfers, affecting low-income workers.

Way Forward for Stronger Diaspora Engagement

- **Improve Consular Services:** Strengthen support for Indian workers, especially in the Gulf.
- **Encourage Diaspora Investments:** Streamline processes for investments in Indian startups & infrastructure.
- **Cultural Outreach:** Expand Know India Program (KIP) and Bharat Ko Janiye Quiz for youth engagement.
- **Develop a Comprehensive Diaspora Policy:** Address OCI issues and streamline contributions.
- **Leverage Soft Power:** Utilize diaspora achievements to boost India's global presence.
- **Skill Development Collaboration:** Work with host countries to enhance job prospects for Indian professionals.

Conclusion

The Indian diaspora acts as a bridge between India and the world, playing a key role in economic growth, cultural preservation, and global influence. Pravasi Bharatiya Divas 2025 celebrates their invaluable contributions to a “Viksit Bharat”, reinforcing India's commitment to its global community.

Animal Diplomacy: Tigers as Gifts

Nepal's tiger population has increased from 120 in 2009 to 355 in 2022—a remarkable 296% rise.

What is Animal Diplomacy?

- The practice of gifting or lending animals as a symbol of friendship and goodwill between nations.
- These animals often hold cultural significance and serve as diplomatic tools.
- The receiving country usually takes steps to protect and conserve these animals, fostering collaboration.

Significance of Animal Diplomacy

- Strengthens International Ties - Encourages diplomatic cooperation and mutual respect.
- Soft Power Strategy - Enhances a nation's global image through wildlife conservation.
 - Example: Australia's "Koala Diplomacy" promotes its culture and conservation efforts.
- Promotes Conservation Efforts - Encourages joint initiatives to protect endangered species and their habitats.



Animal diplomacy serves as a unique way for countries to build alliances, showcase their heritage, and promote wildlife conservation on a global stage.

U.S. Entity List

The U.S. National Security Advisor recently announced the removal of Indian scientific and nuclear entities from U.S. "restricted lists" to fully implement the India-U.S. Nuclear Deal (2008).

WHAT IS US ENTITY LIST?

Published by US Department of Commerce, 270 pages

Includes individuals, companies deemed "national security risk" by US govt.



What is the U.S. Entity List?

- A list of foreign individuals, businesses, and organizations subject to export restrictions.
- Maintained by the Bureau of Industry and Security (BIS), U.S. Department of Commerce.
- Aims to prevent unauthorized trade in sensitive goods and technologies linked to terrorism, weapons of mass destruction (WMD), or activities against U.S. national security.

About the India-U.S. Nuclear Deal (123 Agreement):

- Signed in 2008 to enable civil nuclear cooperation between India and the U.S.
- Lifted restrictions on nuclear trade with India despite its non-signatory status to the Nuclear Non-Proliferation Treaty (NPT).
- Allows U.S. firms to supply nuclear fuel and technology for India's civilian nuclear energy sector.

Significance of the Removal from the Entity List:

- Strengthens India-U.S. strategic partnership in nuclear energy and technology.

- Enhances India's access to advanced nuclear technology for civilian use.
- Reflects growing trust and collaboration between the two nations in defense, energy, and technology sectors.

Aviation Safety in India

A series of fatal plane crashes in December 2024, including the Jeju Air disaster, has raised serious concerns about aviation safety. A recent Air India Airbus A320 incident at Goa's Mopa Airport further highlights the issue.



Civil Aviation in India

- One of the fastest-growing industries in the country.
- Classified into:
 - Scheduled Air Transport - Domestic & international airlines.
 - Non-Scheduled Air Transport - Charter & air taxi services.
 - Air Cargo Service - Transport of cargo & mail.

Major Aviation Safety Concerns

- Runway Safety Issues - Over 50% of accidents occur during landing or takeoff (IATA 2023).
- Bird Strikes - Airports near landfills face frequent wildlife strikes, e.g., Ahmedabad Airport (2019).
- Pilot Fatigue - Contributes to 20-30% of aviation incidents (IATA).
- Controlled Flight Into Terrain (CFIT) - A major cause of aviation fatalities, as seen in Nepal (2023).
- Adverse Weather Conditions - Wind shear, thunderstorms, and icing impact safety (20% of global incidents).
- Ground Handling Errors - Improper loading & maintenance issues cost the industry \$10 billion annually (IATA).

Key Aviation Safety Initiatives in India

- DGCA Oversight & Audits - Regular inspections to address safety gaps.
- National Aviation Safety Plan (NASP 2024-2028) - Aligns with ICAO's Global Aviation Safety Plan.
- Flight Duty Time Limitations (FDTL) - Ensures pilots get adequate rest to prevent fatigue-related errors.
- Wildlife & Bird Strike Mitigation - Airport hazard management programs since 2014.

- GAGAN Navigation System (2015) - Improves landing precision, especially in bad weather.
- Global Collaboration - India partners with IATA & ICAO for risk-based safety improvements.

Way Forward for India's Aviation Safety

- Enhance Infrastructure & Technology - Advanced wildlife detection, AI-based monitoring, better runway designs.
- Strengthen Regulatory Oversight - Frequent safety audits, improved aircraft accident investigations.
- Improve Pilot & Crew Training - Simulator training, stricter fatigue management, psychological preparedness.
- Upgrade Regional Airports - Safer operations under the UDAN scheme, better air traffic control.
- Adopt Global Best Practices - Learn from Singapore's proactive safety measures and pilot training.

Conclusion:

Despite progress in aviation safety, challenges like human error, infrastructure limitations, and external hazards persist. A proactive approach, better regulation, and technological advancements are essential to ensure safer skies for India.

Hydroclimate Whiplash

The Los Angeles wildfires were intensified by hydroclimate whiplash, a phenomenon linked to climate change and human activities.

What is Hydroclimate Whiplash?

- Definition: A rapid shift between extreme wet and severe dry conditions in a region.
- How It Happens:
 - A warmer atmosphere holds more water vapor, increasing the gap between wet and dry periods.
 - Dry spells become longer, followed by intensified rainfall when precipitation finally occurs.
 - This leads to droughts, wildfires, and flash floods, making regions more vulnerable to climate extremes.



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Impact & Significance:

- **Worsens Wildfires:** Prolonged droughts dry vegetation, making fires more intense.
- **Increases Flood Risks:** Heavy rainfall after dry spells leads to flash floods & landslides.
- **Climate Change Link:** Global warming amplifies hydroclimate whiplash, making it more frequent.

Conclusion:

Hydroclimate whiplash is a growing concern due to climate change, demanding urgent action in disaster preparedness, water management, and climate mitigation strategies.

Baanknet e-Auction Portal

The Department of Financial Services (DFS), Ministry of Finance, has launched the revamped Baanknet e-auction portal in New Delhi.

About Baanknet

- **Type:** Digital e-auction platform
- **Developed by:** DFS, Ministry of Finance
- **Objective:**
 - Streamline the recovery process for Public Sector Banks (PSBs)
 - Ensure transparent, efficient, and accessible property auctions
 - Help banks recover bad loans and reduce NPAs (Non-Performing Assets)

Significance of Baanknet

- **Transparency:** Reduces fraud and ensures fair competition
- **Efficiency:** Simplifies the auction process for buyers and banks
- **Accessibility:** Allows wider participation in property auctions
- **Financial Stability:** Helps PSBs recover dues faster and strengthen their balance sheets

Conclusion:

The Baanknet e-auction portal is a major step in financial reforms, boosting transparency and efficiency in bank-led property auctions while supporting NPAs recovery.

KaWaCHaM

The Kerala Chief Minister has launched KaWaCHaM, one of the world's fastest weather alert systems, to enhance disaster preparedness.

What is KaWaCHaM?

- Full Form: Kerala Warnings Crisis and Hazards Management System
- Purpose: A real-time disaster warning system that integrates alerts, sirens, and global weather models to ensure public safety.
- Developed By: Kerala State Disaster Management Authority (KSDMA)
- Funded By:
 - National Disaster Management Authority (NDMA)
 - World Bank (under the National Cyclone Risk Mitigation Project)
- Operations:
 - Managed by the State Emergency Operation Centre
 - Works at the taluk (subdistrict) level
 - Covers all vulnerable areas for effective disaster response

Significance:

- Rapid Disaster Alerts: Enables faster response to cyclones, floods, and extreme weather.
- Improved Preparedness: Helps local authorities and citizens take timely action.
- Global Standards: Uses cutting-edge weather models for accurate predictions.

Conclusion:

KaWaCHaM strengthens Kerala's disaster resilience, setting a benchmark for early warning systems worldwide.

India Joins UN-CEBD

India has become a member of the UN Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD), reflecting its rising influence in global statistical governance.



About UN-CEBD

- Established: 2014 (Australia was the first chair)
- Objective:
 - Integrating Big Data into official statistical systems
 - Supporting the 2030 Sustainable Development Goals (SDGs) with data-driven insights
- Membership:
 - 31 Member States (including India)
 - 16 International Organizations

Key Functions of UN-CEBD

Big Data Integration:

- Utilizes non-traditional data sources like IoT devices, satellite imagery, and private sector data.
 - Capacity Building:
- Training statisticians in data science techniques.
 - Framework Development:
- Establishes ethical guidelines for cross-border data sharing.

Significance for India

- Strengthens India's role in global data governance
- Enhances India's statistical capabilities in Big Data and AI
- Boosts India's participation in international policy-making for data science

Conclusion:

By joining UN-CEBD, India is poised to shape global data policies, leveraging Big Data for national and global development goals.



National Turmeric Board (NTB)

The Union Minister of Commerce and Industry has inaugurated the National Turmeric Board (NTB) to strengthen India's turmeric sector.



About the National Turmeric Board (NTB)

- **Objective:** To develop, promote, and expand the turmeric sector in India.
- **Headquarters:** Nizamabad, Telangana
- **Composition:**
 - **Central Ministries:** Ministry of AYUSH, Department of Pharmaceuticals, Department of Agriculture & Farmers Welfare, and Department of Commerce
 - **State Representatives:** Maharashtra, Telangana, and Meghalaya (Lakadong Turmeric) (States will be represented on a rotational basis.)
 - **Other Members:** Exporters, producer bodies, and farmers from various states

Key Functions of NTB

- **Research & Development:** Promote new turmeric-based products
- **Value Addition:** Support processing and branding for global markets
- **Awareness & Promotion:** Highlight health benefits and medicinal properties
- **Yield Improvement:** Enhance production techniques and supply chains
- **Quality & Export Standards:** Ensure global market compliance

Significance of NTB

- **Strengthens India's leadership** in turmeric production & exports
- **Improves farmers' incomes & market access**
- **Promotes turmeric-based pharmaceuticals and wellness products**

Conclusion:

The National Turmeric Board is a landmark initiative to boost turmeric research, trade, and farmer welfare, ensuring India's dominance in the global turmeric market.



Mission SCOT (Space Camera for Object Tracking): Enhancing Space Safety

The Prime Minister of India lauded Indian space startup Digantara for the successful launch of Mission SCOT, a significant step in Space Situational Awareness (SSA).



About Mission SCOT

- Full Form: Space Camera for Object Tracking
- Purpose: One of the world's first commercial satellites for SSA, enhancing tracking of Resident Space Objects (RSOs).
- Developer: Digantara (Indian space startup, backed by Aditya Birla Ventures & SIDBI)
- Launch Vehicle: SpaceX's Transporter-12 Mission
- Orbit: Sun-Synchronous Orbit (SSO) (ideal for monitoring Low Earth Orbit objects)

Aims & Objectives

- Space Safety:
 - Real-time tracking of space debris to prevent collisions
 - Supports effective space traffic management
- National Security:
 - Strengthens India's space surveillance capabilities
 - Enhances protection of space assets
- Bridging Monitoring Gaps:
 - Improves existing SSA systems
 - Addresses limitations in global space tracking networks

Significance of Mission SCOT

- Strengthens India's role in global space safety
- Supports sustainable space exploration
- Encourages private-sector innovation in space tech

Conclusion:

Mission SCOT is a milestone achievement in India's space technology, ensuring better space traffic management, safety, and security for global operations.



Wealth Tax

What is a Wealth Tax?

- A tax on an individual's or entity's net wealth, mainly targeting the super-rich.
- Introduced in 1957 based on the Kaldor Committee's recommendations.
- Imposed 1% tax on net wealth exceeding ₹30 lakh, applicable to individuals, Hindu Undivided Families (HUFs), and companies.
- Abolished in 2015 and replaced with higher surcharges on the wealthy.



Post-Abolition Measures

- Surcharge on Individuals: Increased from 2% to 12% for those earning over ₹1 crore annually.
- Surcharge on Companies: Increased from 2% to 12% for companies with annual income above ₹10 crore.

Why Reintroduce Wealth Tax?

- Reducing Inequality: The richest 0.04% of the population holds a disproportionate share of wealth.
- Funding Development: Taxing them could finance health and education, creating a stronger workforce and reducing economic disparity.

Arguments For Wealth Tax

- Reducing Inequality:
 - High wealth concentration limits opportunities for many.
 - Taxing the top 0.04% can fund health and education without increasing debt.
- Global Precedents:
 - Countries like UK and Norway have wealth taxes with minimal capital flight.
 - Encourages global cooperation for wealth tracking and tax transparency.
- Feasibility in India:
 - India's digital tax infrastructure can help implement a wealth tax effectively.
- Developmental Benefits:
 - Revenue can improve public healthcare, education, and social welfare.
 - Leads to a fairer distribution of national resources.

Logistics Ease Across Different States (LEADS) 2024' Report

About The LEADS 2024 Report

The Logistics Ease Across Different States (LEADS) 2024 Report is the 6th edition of this assessment, modeled after the World Bank's Logistics Performance Index (LPI).



Key Details:

- Released By: Ministry of Commerce and Industry
- Objective: Evaluates logistics efficiency at the State/UT level to identify areas for improvement.
- Evaluation Pillars:
 - Logistics Infrastructure - Quality and availability of transport facilities.
 - Logistics Services - Efficiency of transport and supply chain services.
 - Operating & Regulatory Environment - Policy framework and ease of doing business.
 - Sustainable Logistics - Adoption of eco-friendly logistics practices.

Green Steel Mission

What is Green Steel?

- Eco-friendly steel produced using renewable energy and sustainable practices.
- Reduces carbon emissions and improves waste management.

About the Green Steel Mission

- Initiative by: Ministry of Steel
- Estimated Cost: ₹15,000 Crore
- Objective: To decarbonize the steel industry and promote sustainable production.
- This mission is a crucial step in aligning the steel sector with India's climate commitments.



Key Components of the Green Steel Mission

- Production-Linked Incentive (PLI) Scheme for Green Steel
 - Encourages eco-friendly steel production.
 - Attracts investments to boost domestic specialty steel manufacturing.
 - Aims to reduce dependence on imports.
- Incentives for Renewable Energy
 - Promotes the use of renewable energy in steel production.
 - Helps lower the carbon footprint of the industry.
- Mandates for Government Agencies
 - Requires government agencies to procure green steel.
 - Drives demand and supports sustainable practices.

Key Details:

- Released By: Ministry of Commerce and Industry
- Objective: Evaluates logistics efficiency at the State/UT level to identify areas for improvement.
- Evaluation Pillars:
 - Logistics Infrastructure - Quality and availability of transport facilities.
 - Logistics Services - Efficiency of transport and supply chain services.
 - Operating & Regulatory Environment - Policy framework and ease of doing business.
 - Sustainable Logistics - Adoption of eco-friendly logistics practices.

This mission is a major step towards making India's steel industry greener and more sustainable.

Constitution of Working Group for the Revision of the Current Series of Wholesale Price Index (Base 2011-12)

Key Details:

- Chairperson: Ramesh Chand, NITI Aayog Member
- Objective: Update WPI to reflect structural economic changes

Terms of Reference:

- Commodity Basket Review: Suggests an updated WPI and PPI (Producer Price Index) basket based on the 2022-23 economy.
- Price Collection System: Reviews and proposes improvements in data collection.
- Computation Methodology: Determines the most suitable method for WPI/PPI calculation.
- Switch to PPI: Examines the feasibility of transitioning from WPI to PPI for better price tracking.



Wholesale Price Index (WPI): An Overview

The Wholesale Price Index (WPI) measures the price of goods at the wholesale stage, focusing on bulk trade between businesses rather than retail consumers.

Key Features of WPI:

- Released By: Economic Advisor, Ministry of Commerce & Industry
- Base Year: 2011-12 (proposed revision to 2022-23)
- Scope: Covers only goods, excluding services
- Usage: Primarily used as a GDP deflator to measure inflation at the wholesale level
- Pricing Methodology: Considers basic prices only, excluding taxes, trade discounts, and transport costs

WPI Basket Components & Weightage:

- Primary Articles - 22.62% (Agricultural and mining products)
- Fuel & Power - 13.15% (Petroleum, electricity, and coal)
- Manufactured Products - 64.23% (Industrial goods, machinery, and chemicals)

The WPI plays a crucial role in inflation analysis, influencing policy decisions and economic planning.

India's First Organic Fisheries Cluster in Sikkim

India's First Organic Fisheries Cluster Launched in Sikkim

The Ministry of Fisheries, Animal Husbandry & Dairying has launched India's first organic fisheries cluster in Sikkim under the Pradhan Mantri Matsya Sampada Yojana (PMMSY).

Key Highlights:

- Initiative: Organic Fisheries Cluster
- Location: Sikkim (India's first fully organic state)
- Under: PMMSY - A scheme promoting sustainable fisheries and aquaculture

Significance of the Initiative:

- Promotes eco-friendly fish farming using organic feed and sustainable practices.
- Boosts income for fish farmers by catering to the organic market.
- Supports India's goal of sustainable aquaculture and environmental conservation.

This initiative is a major step towards making fisheries more sustainable and profitable while ensuring eco-friendly practices.

Benefits of Organic Fisheries:

- **Eco-Friendly:** Reduces environmental pollution and protects aquatic ecosystems.
- **Higher Market Value:** Organic fish products command premium prices in domestic & international markets.
- **Sustainability:** Ensures long-term fish production without harming natural resources.
- This initiative strengthens sustainable aquaculture while boosting economic opportunities for fish farmers in Sikkim.

Blue Flag Certification

About Blue Flag Certification:

What is it?

- A globally recognized eco-label awarded to beaches, marinas, and sustainable tourism operators for environmental excellence.



Classic
ACADEMY
SINCE 2009

Eligibility Criteria:

- Awarded annually by the Foundation for Environmental Education (FEE), Denmark.
- Beaches must meet 33 strict criteria across four categories:
 - Environmental Education & Information
 - Water Quality
 - Environmental Management & Conservation
 - Safety & Services

Global Reach:

- 4,000+ beaches worldwide hold the Blue Flag status.
- Spain leads with 729 certified beaches, followed by Greece.

India's Blue Flag Beaches:

India now has 13 Blue Flag beaches, including Kappad and Chal. Other certified beaches:

- Shivrajpur (Gujarat), Golden Beach (Odisha), Ghoghla (Diu), Kasarkod & Padubidri (Karnataka), Rushikonda (Andhra Pradesh), Radhanagar (Andaman & Nicobar), Kovalam (Tamil Nadu), Eden (Puducherry), Minicoy Thundi & Kadmat (Lakshadweep).



Significance:

Boosts eco-tourism & sustainability

Ensures cleaner, safer beaches

🇮🇳 Strengthens India's commitment to global environmental standards

The certification places India's beaches on the global tourism map, promoting sustainability and environmental conservation.

Biennial Update Report (BUR)

India Submits 4th Biennial Update Report (BUR-4) to UNFCCC

India has submitted its Biennial Update Report-4 (BUR-4) to the United Nations Framework Convention on Climate Change (UNFCCC), outlining its progress in climate action and emission reductions.

What is the Biennial Update Report (BUR)?

Requirement: Developing countries must submit climate action reports under the Paris Agreement.

Purpose: Reports on greenhouse gas (GHG) emissions, mitigation efforts, and progress towards climate goals.

Key Highlights of BUR-4

Emission Intensity Reduction:

- India committed to reducing its GDP emission intensity by 45% (from 2005 levels) by 2030.
- Progress: By 2020, India reduced emission intensity by 36% compared to 2005.

Total Greenhouse Gas (GHG) Emissions:

- 2020 GHG Emissions: 2,959 million tonnes of CO₂ equivalent.
- Net Emissions (after forestry absorption): 2,437 million tonnes.
- Decline: 7.93% reduction in total emissions from 2019, despite an overall 98.34% increase since 1994.

Sector-wise Emissions:

- Energy - 75.66% (largest contributor)
- Agriculture - 13.72%
- Industry & Product Use - 8.06%
- Waste - 2.56%



Carbon Sink Development (2005-2021):

- 2.29 billion tonnes of CO₂ absorbed through forest & tree cover.
- Current forest & tree cover: 25.17% of India's total land area (showing steady growth).

Major Contributors to GHG Emissions:

- Fossil fuel combustion (coal, oil, gas)
- Methane from livestock (agriculture sector)
- Industrial activities (cement & aluminum production)

Significance of BUR-4

- Reaffirms India's commitment to climate action under the Paris Agreement.
- Demonstrates progress in lowering carbon intensity.
- Highlights India's efforts towards achieving net-zero emissions by 2070.

This report showcases India's climate leadership while emphasizing sustainable development and emission reduction strategies.

Dark Oxygen

Discovery of "Dark Oxygen" in the Clarion-Clipperton Zone

Scientists have discovered "dark oxygen" production in the Clarion-Clipperton Zone of the Pacific Ocean, challenging the belief that oxygen generation only occurs through photosynthesis.

What is Dark Oxygen?

- Definition: Oxygen produced without sunlight or photosynthesis deep in the ocean.
- Discovery: July 2024, at a depth of 13,100 feet in the Clarion-Clipperton Zone.

How is Dark Oxygen Produced?

- Electrochemical Reaction:
 - Polymetallic nodules (rich in manganese and iron) on the seafloor generate oxygen.
 - These nodules split seawater molecules (H₂O) into hydrogen and oxygen through electrochemical activity.

Significance of the Discovery

- Revolutionizes Understanding of Oxygen Production - Shows oxygen can be formed without photosynthesis.
- Hints at Extraterrestrial Life - Suggests oxygen-rich environments could exist on other planets.
- Redefines the Origin of Life - Oxygen may have existed before photosynthesis, reshaping theories on Earth's early atmosphere.



About the Clarion-Clipperton Zone

- Location: North Pacific Ocean, between Hawaii and Mexico.
- Rich in Minerals: Manganese, Nickel, Copper, and Cobalt – essential for green technologies (EV batteries & solar panels).

This groundbreaking discovery expands our understanding of oxygen generation, deep-sea chemistry, and life beyond Earth.

Human Metapneumovirus (HMPV)

China is experiencing an outbreak of HMPV, particularly affecting children under 14 years. While India has not reported any cases yet, authorities are closely monitoring the situation.

What is HMPV?

- Family: Belongs to the Pneumoviridae family, related to RSV, measles, and mumps.
- Seasonal Disease: Commonly seen in winter and early spring.
- Discovered in 2001 by Bernadette G. van den Hoogen in the Netherlands.



Who is at Risk?

- Children & Elderly – 10-12% of respiratory illnesses in children are due to HMPV.
- Immunocompromised Individuals – Those with HIV, asthma, or COPD are more vulnerable.

Symptoms of HMPV

- Mild Symptoms: Similar to a common cold – cough, fever, sore throat, runny nose, wheezing.
- Incubation Period: 3 to 6 days.
- Severe Cases: Can lead to bronchiolitis, pneumonia, bronchitis, asthma flare-ups, and ear infections.

How Does HMPV Spread?

- Direct Contact: Cough, sneeze droplets, shaking hands, touching contaminated surfaces (phones, doorknobs, keyboards).
- Diagnosis & Treatment
- Diagnosis: Molecular testing has improved identification of HMPV.
- Treatment:
 - No vaccine or specific antiviral available.
 - Over-the-counter medications for fever and congestion.
 - Severe cases may require hospitalization.



Why is this Important?

- HMPV is a rising global health concern, especially in children and elderly populations.
- Preventive measures (hand hygiene, avoiding close contact with infected individuals) are crucial.
- Monitoring is essential to prevent outbreaks in India and other regions.

With no vaccine or specific cure, early detection and symptom management remain the best approach for handling HMPV infections.

Scramjet Engine For Hypersonic Missiles

Defence Research and Development Laboratory (DRDL), Hyderabad, has successfully conducted the first ground test of a scramjet combustor, marking a major breakthrough in India's hypersonic missile technology.



Significance of the Test

- Key milestone in developing hypersonic missiles powered by scramjet engines.
- Successful ignition and stable combustion, demonstrating India's progress in air-breathing propulsion technology.

What is a Scramjet Engine?

- Supersonic Combustion Ramjet (Scramjet) - An advanced air-breathing engine designed to operate at hypersonic speeds (above Mach 5).
- Improves upon Ramjet Engines by allowing supersonic airflow through the combustion chamber, making it more efficient at extreme speeds.

Key Features of Scramjet Engines

- Air-Breathing Technology: Uses atmospheric oxygen for combustion, eliminating the need for onboard oxidizers.
- No Moving Parts: Operates with a streamlined design, allowing efficient air intake and fuel combustion at hypersonic speeds (~1.5 km/sec).
- Flame Stabilization: Innovative techniques ensure continuous combustion in supersonic airflow, similar to keeping a candle lit in a hurricane.
- Computational Fluid Dynamics (CFD) Simulations: Used by DRDO to predict performance and enhance engine design.

Why is This Important?

- **Strategic Edge:** Enables India to develop hypersonic cruise missiles and spaceplanes.
- **Faster, More Efficient Defense Systems:** Reduces travel time for missiles, making them harder to intercept.
- **Global Leadership in Hypersonic Technology:** Joins elite nations like USA, Russia, and China in advancing hypersonic propulsion.

This successful test strengthens India's defense capabilities and brings it closer to indigenous hypersonic missile development.

Vikas Liquid Engine

The Indian Space Research Organisation (ISRO) has successfully conducted a demonstration test of restarting the Vikas liquid engine and flagged off the Core Liquid Stage (L110) of the LVM3 launch vehicle.

Key Details of the Test

- **Venue:** ISRO Propulsion Complex, Mahendragiri, Tamil Nadu
- **Significance:**
 - A crucial milestone toward developing reusable launch vehicles.
 - Supports future advancements in stage recovery and reuse technologies.



About the Vikas Rocket Engine

- **Engine Type:** Liquid-fueled rocket engine
- **Developed By:** Liquid Propulsion Systems Centre (LPSC), ISRO in the 1970s
- **Named After:** Vikram Ambalal Sarabhai, the father of India's space program

Usage in ISRO's Launch Vehicles

- Polar Satellite Launch Vehicle (PSLV)
- Geosynchronous Satellite Launch Vehicle (GSLV)
- LVM3 (Launch Vehicle Mark-3, formerly GSLV Mk III)

Fuel Composition

- **Fuel:** Unsymmetrical Dimethylhydrazine (UDMH) (40 metric tonnes)
- **Oxidizer:** Nitrogen Tetroxide (N_2O_4)

About the Core Liquid Stage (L110) of LVM3

- **Powered By:** Twin Vikas Engines with a propellant capacity of 110 tonnes
- **Designed By:** Liquid Propulsion Systems Centre (LPSC), ISRO

- **Significance:**
 - Vital for LVM3 (ISRO's heavy-lift launch vehicle)
 - Earmarked for an upcoming LVM3 mission under a commercial agreement between NewSpace India Limited (NSIL) and AST SpaceMobile & Science, LLC
 - Will be used to launch the BlueBird Block 2 satellite

Why This Matters?

- Enhances ISRO's Capabilities in Stage Recovery & Reusability
- Strengthens India's Commercial Space Launch Market
- Supports Future Crewed and Interplanetary Missions

This successful demonstration brings India closer to reusable launch vehicles, making future space missions more cost-effective and efficient.

Ministry of Defence's Declare 2025 as a 'Year of Reforms'

The Ministry of Defence (MoD) has declared 2025 as the "Year of Reforms" to modernize the Armed Forces into a technologically advanced, combat-ready force for integrated multi-domain operations.



SHAPING TALENT SINCE 2009

Evolution of Defence Reforms in India

- **Post-Independence Era (1947-1961)**
 - **Democratic Civilian Control:** Ensured governance and oversight over the military.
 - **Challenges:** Heavy reliance on imports and weak domestic defence capabilities.
- **Post-1962 War Reforms**
 - Strengthened geographical commands and operational structures for better military preparedness.
- **Kargil War Reforms (1999-2001)**
 - Established the Defence Intelligence Agency (2002), tri-service commands, and Integrated Defence Staff to improve coordination, intelligence sharing, and joint operations.

Major Reforms (2014-2024)

- Chief of Defence Staff (CDS) & Department of Military Affairs (DMA) (2019)



- Enhanced synergy between the Army, Navy, and Air Force.
- CDS acts as a single-point military advisor, while DMA streamlines decision-making and promotes indigenous defence production.
- Agnipath Scheme (2022)
 - Introduced short-term recruitment of "Agniveers" to maintain a young, skilled force while reducing long-term personnel costs.
- Integrated Battle Groups (IBGs)
 - Agile, mission-specific units for rapid deployment and independent operations to tackle modern threats.
- Defence Acquisition Procedure (DAP) 2020
 - Focuses on self-reliance by banning imports of certain defence items, boosting private sector participation, and promoting indigenous manufacturing.
- Ordnance Factory Restructuring (2021)
 - 41 ordnance factories reorganized into seven Defence Public Sector Undertakings (DPSUs) to improve efficiency and accountability.

Boosting Indigenous Capabilities

- Key Indigenous Projects
 - Development of HTT-40 trainer aircraft, light combat helicopters, advanced radars, and warships.
 - Over 500 defence items banned from imports to strengthen domestic production.
- Innovation through iDEX
 - iDEX (Innovations for Defence Excellence) supports startups and MSMEs in developing cutting-edge technologies like AI, robotics, and hypersonics.
- Defence Space Agency (2019)
 - Integrates space technology into military operations to enhance national security.

Challenges in Defence Reforms

- Budget Constraints: Limited funding slows modernization and domestic production.
- Innovation Gaps: Dependence on foreign technology hinders indigenous R&D.
- Procurement Delays: Bureaucratic inefficiencies lead to slow defence acquisitions.
- Resistance to Change: Political and inter-service disagreements delay structural reforms like Integrated Theatre Commands (ITCs).
- Export Limitations: Private sector mainly exports components, not complete systems, reducing India's global defence footprint.
- Technology Adoption: Integration of AI, 5G/6G, and quantum systems requires strong policies and investments.
- Limited Private Sector Role: Despite growth, private sector contributes only 22% of total defence production (FY 2024).

Northeast India as the Next Saffron Hub

Context: The Union Minister for Science & Technology recently announced plans to promote saffron cultivation in Northeast India.



Key Points:

- Mission Saffron (NSM):
- Started in 2010-11 under Rashtriya Krishi Vikas Yojana (RKVY) to boost saffron farming in Jammu & Kashmir. Since 2021, it has expanded to Sikkim, Arunachal Pradesh, and Meghalaya.
- Current Cultivation:
- Large-scale farming is ongoing in Menchukha (Arunachal Pradesh) and Yuksom (Sikkim). Expansion is planned in Nagaland and Manipur.

About Saffron:

- Scientific Name: *Crocus sativus*
- Used Part: Stigma (called thread or filament)
- Grown From: Corms (bulb-like structures)
- Key Compounds: Crocin, Picrocrocin, Safranal - used in medicines and for coloring/flavoring

Saffron in India:

- 90% of production is from Kashmir, especially Pampore, known as the “Saffron Bowl of India”.

Ideal Conditions:

- Altitude: Around 2,000 meters
- Soil: Loamy/sandy, pH 6-8
- Temperature: Below 40°C in summer, can go down to -20°C in winter
- Climate: Dry to moderate, well-drained soil needed

Cotton Crisis and Bollgard-3

Context: Cotton farmers in North India are facing major crop damage due to whiteflies and pink bollworms.

Bt Technology - A Quick Overview

- Bt (*Bacillus thuringiensis*): A soil bacterium whose genes are inserted into crops to make them resistant to pests.
- How it works: Bt genes produce toxins that kill insect larvae, reducing pesticide use and increasing yield.
- Common Bt Crops:
 - Bt Cotton - resists bollworms
 - Bt Brinjal - targets shoot and fruit borers
 - Bt Maize - protects against stem borers

Bollgard-3: A Next-Gen Bt Cotton

- What it is: A genetically modified (GM) cotton developed by Monsanto.
- Key Feature: Contains three Bt proteins - Cry1Ac, Cry2Ab, and Vip3A - more effective than Bollgard-2 (which has only two).
- Advantage: Better resistance against pink bollworm and other lepidopteran pests.

Why Bollgard-3 Matters for India

- Bollgard-2 Losing Effectiveness: Launched in 2006, it is now less effective as pink bollworms have developed resistance.
- Cuts Pesticide Use: Helps farmers save money and reduces health risks.
- Boosts Yield: Enhances productivity and lowers crop losses.

Pest Profile: Pink Bollworm (*Pectinophora gossypiella*)

- Attacks cotton bolls from inside.
- Feeds on seeds and fibers.
- Thrives in warm weather.
- Resistant to many pesticides.

Whiteflies (*Bemisia tabaci*)

- Suck sap from cotton leaves.
- Spread Cotton Leaf Curl Virus (CLCuV).
- Multiply quickly in hot, dry weather.
- Hard to control with chemicals.



Certification for Eri Silk

Context: The North Eastern Handicrafts and Handlooms Development Corporation (NEHHDC) has received the Oeko-Tex certification from Germany for eri silk, marking a significant boost for ethical and sustainable silk production in India.

What is Oeko-Tex Certification?

- Global textile safety standard.
- Confirms that fabrics and materials (like yarns, threads, buttons, etc.) are free from harmful substances.
- Increases consumer confidence and meets international sustainability norms.

About Eri Silk:

- **Region:** Mainly produced in Northeast India.
- **Unique Feature:** Known as the world's only vegan silk.
- **Ethical Production:** Moths naturally emerge from cocoons, unlike in traditional silk-making where they are killed.
- **Sustainability:** Eri silk is eco-friendly, cruelty-free, and globally respected for its ethical process.

Other Major Types of Silk in India:

Type	Key Region	Notable Feature
Mulberry	Southern India (esp. Karnataka)	Most widely produced silk in India
Tasar	Central India, Jharkhand	Coarse texture, durable
Muga	Assam	Known for its golden-yellow sheen and longevity



Sagarmala 2.0: Boosting India's Maritime Power

Context: The 4th National Sagarmala Apex Committee (NSAC) reviewed the original Sagarmala Programme and discussed the launch of Sagarmala 2.0.

What is Sagarmala 2.0?

- Upgraded version of the original Sagarmala scheme.
- Focuses on shipbuilding, ship repair, breaking, and recycling.
- Backed by ₹40,000 crore budgetary support to attract investments.
- Aligns with the Maritime Amrit Kaal Vision (MAKV) 2047, aiming to make India a top 5 shipbuilding nation.

About the Original Sagarmala Programme (Launched 2015)

- Led by the Ministry of Ports, Shipping & Waterways.
- Goal: Promote port-led development, reduce logistics cost, and strengthen coastal trade.



Four Pillars of Sagarmala:

1. **Port Modernization & New Port Development**
 - - Upgrade existing ports and develop new ones.
2. **Port Connectivity Enhancement**
 - - Improve multi-modal transport links (rail, road, and waterways) to hinterlands.
3. **Port-linked Industrialization**
 - - Set up Coastal Economic Zones (CEZs) and clusters near ports.
4. **Coastal Community Development**
 - - Support local livelihoods via skill training, tourism, fisheries, and infrastructure.

North India's First Nuclear Power Plant – Gorakhpur, Haryana

Context: Union Minister Dr. Jitendra Singh announced the setting up of North India's first nuclear power project in Gorakhpur, Haryana.

About the Project: Gorakhpur Haryana Anu Vidyut Pariyojana (GHAVP)

- Implemented by Nuclear Power Corporation of India Limited (NPCIL).
- Aimed at boosting India's clean energy capacity through nuclear power.

Key Details:

- Total capacity: 2,800 MW
- Structure: 4 Units of 700 MW each
 - Phase 1: GHAVP-1 & GHAVP-2 (2 × 700 MW)
 - Phase 2: GHAVP-3 & GHAVP-4 (2 × 700 MW)

Significance:

- Clean Energy: Reduces carbon footprint and supports climate goals.
- Energy Security: Strengthens electricity supply in North India.
- Strategic Expansion: Diversifies India's nuclear energy footprint beyond southern and western regions.

State of Climate Report 2024 – WMO Warning

Context: The World Meteorological Organization (WMO) released the State of Climate 2024 report during COP29 in Baku, highlighting record-breaking climate changes and their alarming impacts.

Key Findings:

Greenhouse Gas (GHG) Surge:

- CO₂: Reached 420 ppm – highest in 800,000 years
- Methane (CH₄): 1923 ppb (266% of pre-industrial levels)
- Nitrous Oxide (N₂O): 335.8 ppb (124% of pre-industrial levels)

Global Warming:

- 2024 is the warmest year in 175 years of record-keeping
- First year to cross 1.5°C warming threshold of the Paris Agreement
- Copernicus (EU) predicts permanent crossing of this threshold by 2029

Ocean and Ice Trends:

- Ocean heat content highest ever
- Sea levels rising, glaciers melting at record pace
- Antarctic sea ice at 2nd-lowest level ever
- Ocean acidification continues (fall in pH levels)

Extreme Weather & Displacement:

- 2024 saw record climate disasters: cyclones, floods, droughts
- Highest climate-related displacement since 2008
- Largest 3-year glacier mass loss (2022–2024) ever recorded

Why Is This Happening?

Rising GHG Emissions:

- Fossil fuels: Continued use of coal, oil, gas
- Deforestation: Fewer trees to absorb CO₂
- Industries & Farming: Cement, livestock, fertilizer – major emitters

Temperature Rise:

- GHG effect intensified by CO₂, CH₄, N₂O
- El Niño effect in early 2024
- Urban Heat Islands make cities hotter

Ocean Warming & Sea Level Rise:

- Oceans absorb 90% of excess heat
- Thermal expansion and melting polar ice drive sea level rise
- Oceans absorb more CO₂ → carbonic acid → acidification

Extreme Events:

- Warmer air holds more moisture, fueling floods and storms
- Stronger cyclones, longer droughts
- Increased climate-induced migration



World Health Organization

A UN agency guiding global health responses and policy.

About

A specialized UN agency responsible for international public health, offering leadership on global health matters, setting standards, and monitoring health trends.

Established – 1948 – Geneva, Switzerland

Members – 194 Countries

Mandate

Health system strengthening, disease prevention, emergency response, and promotion of health & well-being worldwide

Key Reports

- ✓ World Health Statistics Report
- ✓ Global Health Estimates
- ✓ World Malaria Report
- ✓ Global Tuberculosis Report

World Air Quality Report 2024 – IQAir

Context: The 7th edition of IQAir's report highlights global air pollution trends and rankings based on PM2.5 levels.

Most Polluted Countries (PM2.5 in $\mu\text{g}/\text{m}^3$):

1. Chad – 91.8 (18x WHO safe limit)
2. Bangladesh – 78.0
3. Pakistan – 73.7
4. DR Congo – 58.2
5. India – 50.6



Metropolitan Areas:

- Most Polluted: Byrnhat (Assam-Meghalaya border), India – 128.2 $\mu\text{g}/\text{m}^3$
- Cleanest: Mayaguez, Puerto Rico – 1.1 $\mu\text{g}/\text{m}^3$
- Most Polluted Capital: Delhi – 91.8 $\mu\text{g}/\text{m}^3$ (retains top position)

India-Specific Insights:

- Global Rank: 5th (down from 3rd in 2023)
- Pollution Drop: 7% fall in PM2.5 levels (2024: 50.6 vs 2023: 54.4)
- Health Impact: Air pollution may reduce average life expectancy by 5.2 years
- Urban Crisis: 6 of top 10 and 13 of top 20 most polluted cities are in India

Pilibhit Tiger Reserve to Welcome Rhinos

Context: Pilibhit Tiger Reserve (PTR) in Uttar Pradesh is set to become a new home for rhinos under Project Rhino, with translocations planned from Assam and Nepal.



About Pilibhit Tiger Reserve (PTR):

- **Location:** Spans Pilibhit, Lakhimpur Kheri, and Bahraich districts in UP; borders Nepal.
- **Notable Recognition:** Won the TX2 award in 2020 for doubling tiger numbers in 4 years.
- **Landscape:** Lies in the Terai Arc; Gomti River originates here.
- **Rivers & Dams:** Includes Sharda, Chuka, Mala Khannot rivers; Sharda Sagar Dam forms the boundary.
- **Vegetation:** Moist deciduous forests with 76% sal woodland, grasslands, and swamps.
- **Fauna:** Bengal tiger, swamp deer, Bengal florican, leopards, hog deer, etc.

About Project Rhino:

- **Aim:** Introduce rhinos from Assam and Nepal to PTR.
- **Long-Term Vision:** Develop a stable rhino population in PTR, leveraging seasonal migration from Nepal's Shuklaphanta National Park.
- **Duration:** 10-year plan (2022-2031).

MISHTI Scheme: Gujarat Leads in Mangrove Conservation

Context: Gujarat has emerged as a national leader in mangrove afforestation under the MISHTI scheme, boosting coastal conservation efforts.



Key Highlights:

- Gujarat's Success: Planted mangroves on 19,020 hectares in just two years.
- National Goal: The Centre targets 54,000 hectares of mangrove plantations across the country over five years.

About MISHTI Scheme:

- Full-Form: Mangrove Initiative for Shoreline Habitats & Tangible Incomes.
- Launched: 2023, by the Government of India.
- Duration: 5-year project (2023-24 onwards).
- Coverage: 9 coastal States and 3 Union Territories.
- Funding Sources:
 - MGNREGS
 - CAMPA (Compensatory Afforestation Fund)
 - Other convergence-based schemes

Objective:

- Promote large-scale mangrove plantations to protect coastal ecosystems and support the livelihoods of coastal communities.

Sagareshwar Wildlife Sanctuary: India's First Man-Made Sanctuary

Context: A recent study revealed a high deer population in Sagareshwar Wildlife Sanctuary, with 536 sambars and 295 cheetals, making it one of the most densely populated man-made sanctuaries.



Key Highlights:

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Cali Fund Launched to Boost Global Biodiversity Finance

Context: A new international fund named “Cali Fund” was launched at COP16 of the Convention on Biological Diversity (CBD) held in Rome, Italy.



About Cali Fund:

- **Purpose:** Supports fair and equitable sharing of benefits from Digital Sequence Information (DSI) on genetic resources.
- **Origin:** Proposed under a multilateral mechanism adopted during COP15 of CBD (2022), aligned with the Kunming-Montreal Global Biodiversity Framework (KMGBF).
- **Objective:** Contribute to Goal C and Target 13 of the KMGBF — aimed at halting and reversing biodiversity loss by 2030.
- **Management:** Jointly managed by UNDP and UNEP.
- **Secretariat:** Hosted by the CBD Secretariat.

About the Convention on Biological Diversity (CBD):

- **Adopted:** 1992 at the Rio Earth Summit.
- **Objective:**
 - a. Conservation of biodiversity.
 - b. Sustainable use of biodiversity.
 - c. Fair sharing of benefits from genetic resources.
- **Membership:** 196 countries (except the USA, which hasn't ratified it).
- **Secretariat:** Based in Montreal, Canada.

About Kunming-Montreal Global Biodiversity Framework (KMGBF):

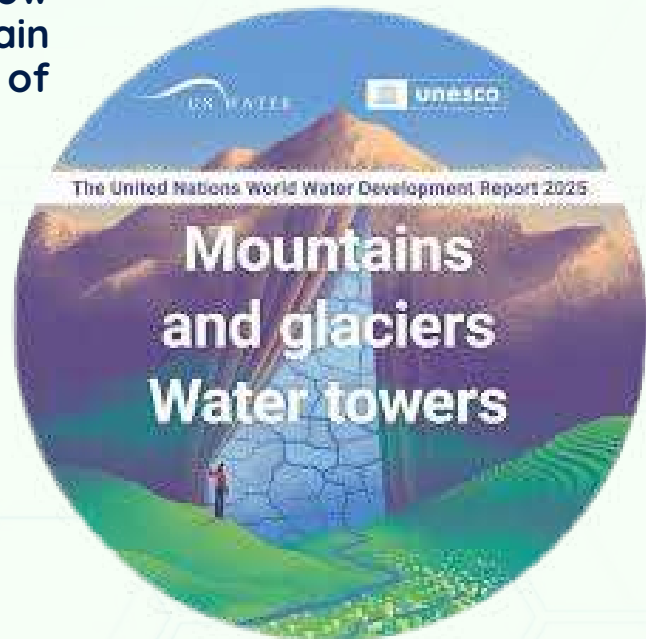
- **Adopted:** At COP15 in 2022.
- **Goal:** Restore biodiversity by 2030 and ensure harmony with nature by 2050.
- **Structure:** Includes 4 goals for 2050 and 23 targets for 2030.
- **Replaces:** The earlier Aichi Biodiversity Targets.

UN World Water Development Report 2025: “Mountains and Glaciers – Water Towers”

Context: The 2025 UN WWDR emphasizes how climate change is threatening mountain glaciers, which are critical sources of freshwater for billions.

Key Takeaways:

- **Mountains as Water Towers:**
- Mountain meltwater supports drinking water, food, energy, and ecosystems for over 2 billion people globally.
- **Climate Threats:**
 - Glaciers are melting faster due to global warming.
 - Leads to extreme water cycles—more floods, droughts, landslides, and sea-level rise.
- **Call to Action:**
- Urges urgent carbon emissions reduction to slow down glacier retreat.
- **SDG Relevance:**
- Protecting frozen water resources is vital to achieve Sustainable Development Goals (SDGs), especially SDG 6: Clean Water and Sanitation.



About UN-Water:

- **Established:** 2003, to coordinate UN efforts on water and sanitation.
- **Goal:** Accelerate global progress on water-related SDGs.
- **Key Reports:**
 - World Water Development Report (WWDR)
 - GLAAS (Assessment of Sanitation & Drinking Water)
 - SDG 6 Synthesis Report

World Water Day 2025:

- **Date:** March 22 (observed annually since 1993)
- **Theme:** Glacier Preservation
- **Purpose:** Raise awareness on sustainable water use and global water challenges.



Aditya-L1 Captures Solar Flare Kernel: A Major Milestone in Space Science

Context: India's Aditya-L1 mission has captured the first-ever image of a solar flare kernel, a major discovery in solar physics.



What is a Solar Flare Kernel?

- A kernel is a bright spot in the Sun's lower atmosphere.
- It marks the beginning point of a solar flare—an intense burst of solar energy.

What is a Solar Flare?

- A solar flare is a sudden release of energy due to the Sun's magnetic field snapping.
- It emits UV rays, X-rays, and charged particles, which can affect satellites and communications on Earth.

How Aditya-L1 Studies Solar Flares:

- Key Instruments:
 - SUIT, SoLEXS, and HELIOS detect UV & X-ray emissions from flare regions.
- Why Space-Based?
 - Earth's atmosphere blocks harmful radiation; only space-based observatories can study it in detail.

Major Findings by Aditya-L1:

- SUIT detected an X6.3-class flare—one of the strongest flare categories.
- Observed in Near Ultra Violet (NUV) range (200–400 nm) for the first time ever.
- Showed how flare energy travels through the Sun's layers—photosphere, chromosphere, and corona.
- Confirmed the link between flare energy and plasma temperature rise.
- Helps in better space weather prediction and satellite protection.

About Aditya-L1 Mission:

- India's first solar observatory, launched on September 2, 2023 by ISRO.
- Orbit: Sun-Earth Lagrange Point (L1)—allows continuous solar observation without atmospheric disruption.
- Makes India part of the elite group of solar-research nations alongside NASA and ESA.

Chandrayaan-5: India's Next Leap in Lunar Exploration

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Blue Ghost Mission 1: A New Milestone in Private Lunar Landings

Context: US-based Firefly Aerospace has successfully landed its Blue Ghost Mission 1 on the Moon — 2nd private company to land on the Moon, 1st private lander to land upright.



About the Blue Ghost Mission:

- Part of NASA's Commercial Lunar Payload Services (CLPS) program.
- No rover on board — lander remains stationary.
- Operates for one lunar day (~14 Earth days).

Key Objectives:

- Carried 10 scientific payloads (mostly from NASA).
- Focus Areas:
 - Robotic drilling tests for future missions.
 - Study of lunar surface and subsurface composition.®
 - Dust mitigation strategies to protect lunar hardware.
 - Understanding the effects of space weather.

Landing Site:

- Near Mare Crisium - a large, ancient impact basin later filled with basaltic lava.

Significance:

- Advances private participation in space exploration.
- Aids NASA's future Artemis missions and broader Moon research.
- Contributes to developing sustainable lunar infrastructure.

NASA's PUNCH Mission: Studying Solar Winds in 3D

Context: NASA is launching the PUNCH Mission to study how the Sun's outer atmosphere (corona) transforms into solar wind and causes Coronal Mass Ejections (CMEs) — both of which significantly affect space weather on Earth.



About PUNCH

- Full Form: Polarimetry to Unify the Corona and Heliosphere
- Launch Date: February 28, 2025
- Launch Provider: SpaceX
- Orbit: Low Earth Orbit (LEO)
- Mission Duration: 2 years
- Configuration: A constellation of four small satellites working together

Key Features

1. First mission to use polarized light to study the Sun's outer atmosphere in 3D
2. Advanced imaging using 4 cameras for real-time, high-resolution visuals
3. Tracks origin and evolution of solar wind and CMEs

Why It Matters

- Will improve space weather forecasting
- Helps protect communication networks, GPS, and power systems on Earth
- Aids future space missions by predicting solar activity threats

Starliner Mission: NASA's Crewed Test with Boeing's Capsule

Context: NASA astronauts Sunita Williams and Butch Wilmore returned to Earth after an extended space mission aboard the Boeing Starliner, marking a crucial test for NASA's commercial space program.

Mission Highlights

- Launch Date: June 5, 2024
- Vehicle: Boeing CST-100 Starliner (first crewed test flight)
- Planned Duration: 8 days
- Actual Duration: Over 9 months due to technical issues
- Return: March 18, 2025 — via SpaceX Crew Dragon



About Boeing's Starliner (CST-100)

- Type: Partially reusable crew spacecraft
- Purpose: Transport astronauts to the International Space Station (ISS)
- Modules:
 - Crew Module: Habitable area for astronauts
 - Service Module: Supports with power, propulsion, air, water, and temperature control

Mission Objective

- Test the performance of Starliner in a real space environment with humans onboard
- Dock with ISS and safely return to Earth
- Supports NASA's goal of having multiple commercial options for space travel

Melioidosis Disease (Whitmore's Disease)

Context: A recent environmental mapping study in Odisha shows that melioidosis infections peak during and after the monsoon, highlighting the disease's seasonality and link with environmental conditions.



About the Disease

- **Type:** Bacterial infectious disease
- **Causative Agent:** *Burkholderia pseudomallei*
- **Reservoir:** Found in soil and surface water in tropical and subtropical regions

Geographical Prevalence

- **Endemic in:**
 - Southeast Asia
 - Northern Australia
 - Indian Subcontinent, Southern China, Hong Kong, Taiwan

Transmission

- Not spread from animals to humans
- **Modes of Infection:**
 - Inhalation
 - Ingestion
 - Direct contact with contaminated soil/water

Vulnerable Groups

- **Most affected:** Adults (40–60 years) with underlying health conditions
- **Rare in:** Children under 15

Environmental Factors Increasing Risk

- High rainfall → Increases soil and water contact
- High humidity & temperature → Promotes bacterial survival
- Cloud cover → Reduces solar radiation, helping bacteria persist

Treatment

- Can be effectively treated with antibiotics

About Environmental Mapping

- Practice of mapping environmental data to analyze natural phenomena
- Helps understand disease-environment links, aiding in public health planning

Bose Metal

Context: Recent research by scientists from China and Japan on Niobium Diselenide (NbSe_2) indicates it may exhibit properties of a Bose Metal, a theoretical quantum state.



What is a Bose Metal?

- A theoretical state of matter representing an anomalous metallic state (AMS).
- Sits between superconductivity and superinsulation.
- No physical evidence yet; mostly theoretical.

Key Characteristics

- **Made of Cooper Pairs:**
 - Form at very low temperatures in thin superconducting films.
 - These pairs of electrons usually lead to superconductivity.
- **Lack of Superconducting Coherence:**
 - Though Cooper pairs exist, they don't form a coherent state, so no zero-resistance flow.
- **Anomalous Conductivity:**
 - Unlike conventional metals or superconductors, Bose metals have finite resistance, even near absolute zero.
- **Intermediate Quantum State:**
 - Between a metallic and superconducting phase, challenging standard condensed matter theories.

Scientific Significance

- Explains puzzling metallic behavior in thin films at low temperatures.
- A step forward in quantum material research.

Limitations & Challenges

- **No Industrial Use Yet:** Purely theoretical so far.
- **Experimental Difficulty:** Needs extreme precision in temperature, film thickness, and magnetic field.
- **Unclear Classification:** Still debated whether it's a new phase or a transitional state.
- **Exists in Disordered Systems:** May form where disorder and localization affect Cooper pairs.

Frozen Light & Supersolid State

Context: Scientists have recently demonstrated that light can be “frozen” into a supersolid—a rare quantum state combining properties of solids and superfluid.



What is a Supersolid?

- An exotic state of matter with:
 - Solid-like structure → maintains rigidity
 - Superfluid-like flow → moves without friction
- Previously observed only in Bose-Einstein Condensates (BECs) at ultra-low temperatures.

Key Characteristics

- **Dual Nature:** Simultaneously rigid and flows without resistance.
- **Quantum Coherence:** Particles exist in a correlated quantum state.
- **Zero Viscosity:** Moves without internal friction.
- **Temperature Dependency:** Only forms near absolute zero (-273.15°C).

Why Such Low Temperatures?

- Reduces thermal agitation → minimizes particle chaos
- Enhances quantum effects → particles settle in ground state
- Allows particles to act as a single quantum entity

How Was Light Frozen?

Role of Polaritons:

- Hybrid particles = Photons (light) + Excitons (electron-hole pairs)
- Possess mass and quantum properties, enabling supersolid behavior.

Mechanism:

1. Photon-matter coupling creates polaritons.
2. Polaritons form a structured lattice (solid property).
3. They also flow without friction (fluid property).

Significance of the Discovery

Applications:

- **Quantum Computing:** Better qubits & stability
- **Superconductors:** Enhanced zero-resistance conduction
- **Frictionless Lubricants:** For ultra-efficient machines
- **Optics & Photonics:** Advancing photonic circuits and sensors
- **Fundamental Science:** Sheds light on quantum interactions and exotic matter states

Plastic Ice VII

Context: Scientists have confirmed a new exotic form of ice—Plastic Ice VII, expanding our understanding of water beyond its typical solid, liquid, and gas states.



What is Plastic Ice VII?

- A rare phase of ice where:
 - Water molecules form a solid crystal structure
 - Yet rotate freely, unlike in typical solid ice
- First predicted in 2008, confirmed recently using advanced tools like neutron-scattering and diamond-anvil cells.

Conditions for Formation

- High Pressure: Above 3 GPa (30,000x Earth's atmospheric pressure)
- High Temperature: Above 450 K (~177°C)

Key Features

- Rigid Crystal Structure like ice
- Rotating Molecules → Molecules spin despite being in a solid
- Differs from common ice due to this plasticity + rigidity combo

Why It Matters

- Space Science:
 - Ice VII is already known to exist on Ganymede, Titan (Jupiter & Saturn's moons)
 - Plastic Ice VII shows water may behave more unpredictably in space
- Scientific Impact:
 - Enhances understanding of planetary interiors
 - Useful in designing materials for extreme environments

SwaYaan Initiative & NIDAR

Context: The Ministry of Electronics & IT (MeitY) and Drone Federation of India (DFI) launched NIDAR, an innovation challenge under the SwaYaan Initiative, to boost drone R&D and human resource development in India.



What is SwaYaan?

A national capacity-building program focused on Unmanned Aircraft Systems (UAS) like drones.

Key Features:

- Target: Train 42,560 participants
- Implemented via:
 - Hub-and-Spoke Model with 30 premier institutions (IITs, NITs, IIITs, IISc, CDAC, etc.)
- Training Areas:
 - Drone electronics
 - Aeromechanics
 - GNC algorithms
 - Simulations
 - Drone applications and allied UAS tech

Achievements:

- 14,000+ individuals trained
- M.Tech in UAS Engineering started at IIT Kanpur
- Conducted: Bootcamps, workshops, minor degrees, and industry engagement activities

What is NIDAR?

NIDAR = National Innovation Challenge for Drone Application & Research

Launched by: MeitY + Drone Federation of India (DFI)

Aim: Encourage students & researchers to develop autonomous drone solutions for real-world use.

Focus Areas:

1. Disaster Management (Scout & Deliver Drones):
 - For search, rescue, and delivery in disaster-hit zones
 - Functions: Survivor detection, communication, and supply drops
2. Precision Agriculture (Scan & Spray Drones):
 - For crop health monitoring
 - Accurate spraying of pesticides/fertilizers

Unmanned Aircraft Systems (UAS):

- Air vehicles without onboard human pilots
- Controlled remotely or autonomously
- Also known as: UAVs, RPAS, or Drones



Google Tax

Govt Plans to Scrap Equalisation Levy on Online Ads

The government has proposed to abolish the 6% Equalisation Levy (EL) on online advertisements through amendments in the Finance Bill, 2025.

What is Equalisation Levy (EL)?

Also known as the 'Google Tax', it was introduced in 2016 to tax digital advertising by non-resident companies, ensuring fair tax treatment between Indian and foreign e-commerce firms.

Background:

- A 6% EL was charged on payments over ₹1 lakh/year to non-resident digital ad service providers.
- In 2021, India removed the 2% EL on e-commerce transactions, but the 6% levy on ads remained—until now.



First Riverine Dolphin Estimation Report

India's First Nationwide Dolphin Survey (2021-2025)

India conducted its first-ever national survey of Gangetic dolphins between 2021 and 2025, covering 8,507 km of the Ganga and its tributaries.

Who conducted it?

The Ministry of Environment, Forest and Climate Change, with researchers using advanced acoustic tracking methods.

How was it done?

Instead of visual spotting, the survey used sound-based triangulation with acoustic hydrophones, as these dolphins are blind and depend on echolocation.



Key Findings:

- Total dolphins counted: 6,327
 - Ganges river dolphins: 6,324
 - Indus river dolphins: 3
- Highest numbers were found in the main Ganga (3,275) and its tributaries (2,414).
- Top states: Uttar Pradesh > Bihar > West Bengal > Assam
- Other sightings:
 - Brahmaputra mainstream: 584 dolphins
 - Tributaries of Brahmaputra: 412 dolphins
 - Beas River: 101 dolphins

Anthurium Flowers

Mizoram Exports Anthurium Flowers to Singapore for the First Time

Mizoram has exported Anthurium flowers to Singapore for the first time, highlighting India's potential in floriculture exports.



About Anthurium:

- Also known as Flamingo Flower or Painter's Palette
- Native to: Americas (Mexico to Argentina and Caribbean)
- In India: Mostly grown in Mizoram and other North Eastern states
- Grows on soil (terrestrially) or on other plants (epiphytically)

Why it matters for Mizoram:

- Air Purifying: Helps improve indoor air quality
- Tourism Booster: Mizoram holds an annual Anthurium Festival to promote tourism and showcase the flower

AI Kosha

MeitY Launches AI Kosha - India's Secure AI Dataset Platform

The Ministry of Electronics & IT (MeitY) launched AI Kosha, a secured platform to support AI research, innovation, and startups in India.



Why it matters:

Launched on the IndiaAI Mission's anniversary, AI Kosha aims to:

- Democratize access to AI resources
- Boost AI use in governance
- Support AI startups and academia

Key Features of AI Kosha:

- Houses 316 datasets, mainly for language translation tools in Indian languages
- Part of the IndiaAI Datasets Platform, under the IndiaAI Mission
- Supported by the Compute Capacity pillar, giving startups & researchers shared access to GPUs for training AI models

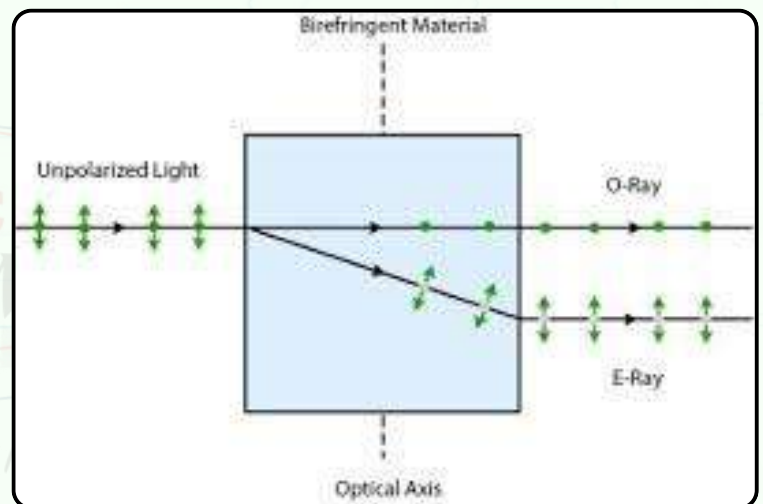
Birefringence

Birefringence: Light Splitting in Crystals

Birefringence is the optical phenomenon where a single light ray splits into two rays—

- Ordinary ray
- Extraordinary ray

These rays are either linearly polarized in perpendicular planes or circularly polarized in opposite directions.



Why does it happen?

- It occurs in materials that have more than one refractive index, bending light differently based on direction.
- These materials are anisotropic—they show different optical behavior along different axes.

Key Term:

- Refractive Index = Speed of light in vacuum ÷ Speed of light in the material

Examples of Birefringent Materials:

- Natural: Mica, Quartz, Calcite
- Synthetic: Barium Borate, Lithium Niobate
- Induced Birefringence: Can be created using stress, electric, or magnetic fields

Applications:

- Widely used in LCDs, microscopes, optical switches, lasers, waveplates, and frequency converters for light control and manipulation.

Selenium Toxicity

Maharashtra Reports Sudden Hair Loss Linked to Selenium in Wheat

Over 300 cases of sudden hair loss were reported in Shegaon taluka, Maharashtra (Dec 2024 - Jan 2025). Cause: High levels of selenium found in PDS wheat were linked to the cases.



About Selenium:

- Source: Found in Earth's crust, often with sulfur minerals.
- Dietary Presence: Commonly found in cereals, fish, and meat.
- Geographic Variation: Selenium levels in food vary by the region where it's grown.

Health Impact of Excess Selenium (Selenosis):

- Symptoms: Hair loss, brittle nails, nausea, and neurological issues
- Safe Limit: FAO/WHO recommends a maximum of 400 µg/day

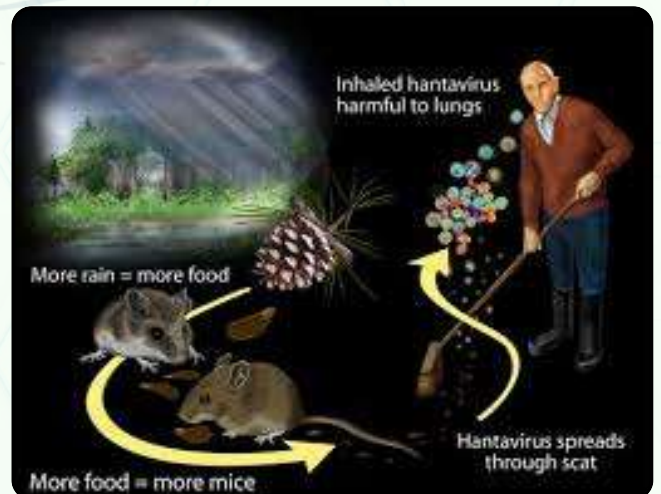
Hantavirus

Gene Hackman's Wife Dies from Hantavirus-Linked Illness

Betsy Arakawa, wife of Oscar-winning actor Gene Hackman, passed away due to a respiratory illness linked to hantavirus.

About Hantavirus:

- Origin: First identified during the Korean War (1950s); named after the Hantaan River in Korea.
- Carriers: Spread mainly by rodents like deer mice, white-footed mice, rice rats, and cotton rats.
- Impact on Humans: Can cause severe respiratory or hemorrhagic illnesses, with high fatality rates.



How It Spreads:

- Primary Transmission: Inhalation of virus particles from rodent urine, droppings, or saliva.
- Rare Human Transmission: Certain strains (e.g., Andes virus in Argentina/Chile) can spread person-to-person, though this is uncommon.

Diagnosis & Treatment:

- No specific treatment or vaccine available.
- Focus is on early detection, supportive care, and symptom management to improve survival chances.

White Hydrogen

France Discovers Massive Reserve of White Hydrogen

France has discovered a 46 million-ton reserve of white hydrogen beneath Folschviller in the Moselle region—a major breakthrough in clean energy.



What is White Hydrogen?

- A naturally occurring gas found in the Earth's crust
- Requires no industrial production and emits zero carbon emissions
- Considered a clean and eco-friendly energy source
- Different from:
 - Gray/Brown/Blue/Green hydrogen, which are man-made and often carbon-intensive

Why is the Discovery Important?

- Reserve equals over half of global annual gray hydrogen production
- Breaks the myth that hydrogen must be produced artificially
- Much cheaper:
 - White hydrogen: ~\$1/kg
 - Green hydrogen: ~\$6/kg

Potential Uses of White Hydrogen

- Seen as a future energy solution for aviation, shipping, steel manufacturing
- When burned, hydrogen emits only water, not pollutants—making it a sustainable alternative to fossil fuels

Golden Dome

U.S. Unveils Golden Dome: A Futuristic Missile Defense System

The United States has announced the development of the Golden Dome, an advanced missile defense system aimed at countering hypersonic, ballistic, and cruise missile threats.



What is the Golden Dome?

A nationwide defense system that combines multiple technologies to provide early detection and interception of incoming missiles.

Key Features:

- Space-Based Sensors & Interceptors
- Detect and destroy threats early, before they reach U.S. territory.
- Layered Defense:
- Uses ground-based and naval systems for additional protection.
- Real-Time Communication:
- Advanced networks for instant data sharing and rapid response.

Why It Matters:

With growing threats from hypersonic and advanced missile technology, the Golden Dome aims to offer superior early-warning and defense capability across the U.S.

Pratibimb Module

'Pratibimb' GIS Tool Helps Nab Over 6,000 Cybercrime Accused

The Pratibimb Module has aided in the arrest of 6,046 accused, helped identify 17,185 linkages, and responded to 36,296 cyber investigation requests, as reported in the Lok Sabha.

What is Pratibimb?

- A GIS-based cybercrime tracking software
- Developed by the Indian Cyber Crime Coordination Centre (I4C) under the Ministry of Home Affairs (MHA)



Key Features:

- Visual Tracking: Maps mobile numbers used in cybercrimes across India
- GIS Mapping: Enables location-based visualization for Law Enforcement Agencies (LEAs)
- Real-Time Insight: Assists in identifying & tracking cybercriminals more effectively

Why it Matters:

Pratibimb improves the efficiency of cybercrime investigations by giving law enforcement real-time, location-based insights, making it easier to spot patterns and coordinate action.

Lachit Barphukan

Lachit Barphukan Police Academy Inaugurated in Assam

The Union Home Minister recently inaugurated the Lachit Barphukan Police Academy in Dergaon, Assam, in honor of the legendary Assamese warrior.

About Lachit Barphukan (1622-1672):

- Born in: Charaideo district, Assam
- A top military leader and one of the five Borphukans (governors) of the Ahom Kingdom
- Known for his heroic leadership in the Battle of Saraighat (1671)
- Appointed by King Charadhwaj Singha with administrative, military, and judicial powers



Battle of Saraighat (1671):

- Fought on the Brahmaputra River, near modern-day Guwahati
- Ahom Army, led by Lachit Barphukan, defeated the Mughal forces commanded by Ram Singh
- Marked a decisive victory that ended Mughal ambitions in Assam

Lachit Barphukan remains a symbol of patriotism and military brilliance in Indian history.

Rashtriya Karmayogi Jan Seva Programme

First Batch of Rashtriya Karmayogi Jan Seva Programme

The Ministry of Ayush inaugurated the first batch of the Rashtriya Karmayogi Jan Seva Programme, aimed at improving public service delivery.

About the Programme:

- Objective:
 - To foster a Seva Bhav (spirit of service) among government employees
 - Build a more accountable and citizen-centric workforce
 - Upskill and broaden perspectives of public servants
- Launched By:
 - Anchored by the Capacity Building Commission
- Target Audience:
 - Central Government employees involved in public service



Key Features:

- Interactive Training:
 - Replaces lecture-style learning with group discussions, teamwork, and problem-solving tasks
- Focus on Self-Growth:
 - Encourages self-discovery and motivation through leadership stories and inspirational narratives

PM-YUVA 3.0

PM-YUVA 3.0: Mentoring the Next Generation of Indian Authors

The third edition of PM-YUVA (Prime Minister's Scheme for Mentoring Young Authors) has been launched to nurture young literary talent across India.



About PM-YUVA 3.0:

- Launched in: 2021; now in its third phase
- Nodal Ministry: Ministry of Education, Department of Higher Education
- Implemented by: National Book Trust (NBT), India

Key Features:

Objective:

- To train and mentor young authors (under 30 years) and promote a reading and writing culture
- It also aims to showcase Indian literature and heritage to a global audience.

Languages Covered:

- Entries accepted in 22 Indian languages and English
- Selection:
- 50 authors will be chosen through an All-India Contest

Focus Areas:

- Encouraging youth to understand India's culture, history, and contributions of national visionaries

This initiative not only builds writing skills but also helps position India as a literary and cultural powerhouse on the global stage.

One Nation-One Port Initiative

One Nation-One Port Initiative Announced

The Ministry of Ports, Shipping, and Waterways (MoPSW) has launched the One Nation-One Port initiative to bring uniformity and efficiency across India's port operations.

What is the One Nation-One Port Initiative?

Aim:

To standardize processes and eliminate inconsistencies in documentation and operations at India's major ports.

Why it Matters:

- Cuts logistics costs and reduces operational delays
- Boosts global competitiveness of Indian ports
- Increases transparency in port systems

Key Achievements So Far:

Reduced Documentation:

- Container operation documents: Reduced by 33% (from 143 to 96)
- Bulk cargo documents: Reduced by 29% (from 150 to 106)

Strategic Significance:

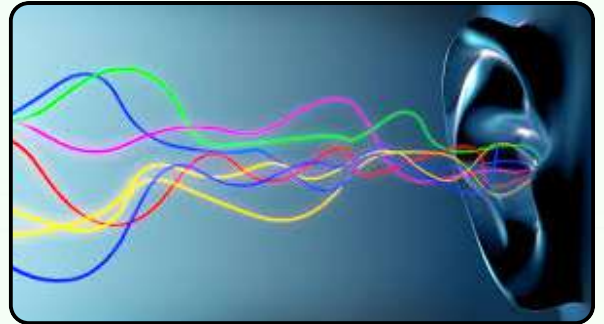
- Part of the Maritime Amrit Kaal Vision 2047
- Supports the PM Gati Shakti Master Plan and National Logistics Policy
- Aims to create efficient, sustainable, and resilient port infrastructure



Audible Enclaves

Audible Enclaves: A New Way to Send Private Sound Without Headphones

Researchers at Penn State University have developed a technique to create “Audible Enclaves” — sound zones that can be heard only at specific spots, without using headphones or disturbing others.



What are Audible Enclaves?

Localized Sound Zones:

- They create small pockets of sound that are audible only at specific locations

No Sound Leakage:

- Unlike normal speakers, they don't spread sound everywhere

How Does It Work?

Self-Bending Ultrasound Beams:

- Uses two ultrasonic waves at different frequencies that are inaudible to humans

Sound Creation at Target Point:

- Where these beams intersect, they interact and produce a new, audible frequency
- → This is known as difference frequency generation

Precision with Acoustic Metasurfaces:

- These surfaces bend and steer sound like lenses bend light, allowing audio to reach around obstacles

Why It Matters:

- Enables private audio delivery in public — ideal for museums, offices, or transport
- No need for headphones or physical barriers

This breakthrough could transform how we experience sound in shared spaces by offering targeted, non-intrusive audio delivery.

SIPRI Report on Global Arms Trade, 2025

Context:

The Stockholm International Peace Research Institute (SIPRI) released its latest report analyzing arms transfers during 2020–2024.

Key Global Highlights:

Overall Trend:

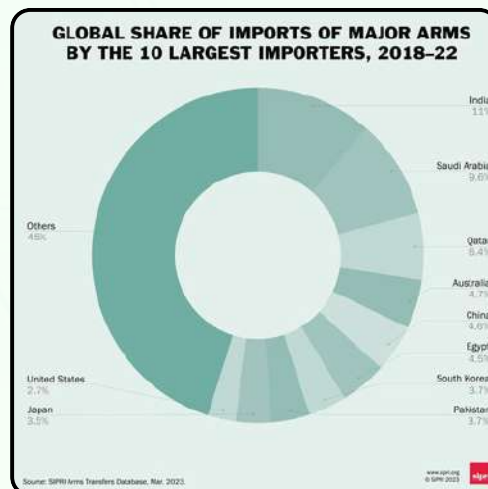
- Global arms transfers remained stable compared to 2010–2014 and 2015–2019, but were 18% higher than in 2005–2009.

Ukraine:

- Became the largest arms importer, with imports rising 100 times compared to 2015–2019.

India:

- Ranked 2nd-largest importer despite a 9.3% drop in imports.
- Remained the top destination for:
 - Russia (36% of its exports)
 - France (28% of its exports)



Top Arms Exporters (2020–2024):

Country	Global Share
USA	43%
France	9.6%
Russia	7.8%
Italy	4.8% (jumped from 10th to 6th)

About SIPRI:

- A global research institute based in Sweden, founded in 1966
- Tracks arms transfers by volume, not monetary value
- Uses 5-year periods to provide stable and comparative data

Sonic Weapons

Context:

During protests in Belgrade, Serbia, demonstrators accused the authorities of using sonic weapons to disperse crowds, though officials have denied these claims.

What Are Sonic Weapons?

Also Known As:

- Sonic weapons, or Long-Range Acoustic Devices (LRAD), are devices that emit intense sound waves instead of bullets.



Purpose:

- They are non-lethal tools used for crowd control or long-distance communication.

Range:

- These weapons can project loud noises up to 1 kilometer away, unlike regular sound which weakens with distance.

History:

- While sound amplifiers have existed for centuries, they were first used for crowd control in the early 1990s. The US military used these devices in Iraq in 2004.

How Do Sonic Weapons Work?

Transducers:

- Sonic weapons use hundreds of transducers—devices that convert energy to sound—to create concentrated sound waves.

Sound Control:

- The sound is directed in a narrow beam, and authorities can adjust frequency, intensity, and duration to control crowd movement effectively.

These devices are becoming a growing method for controlling crowds without physical harm but remain a topic of controversy and concern regarding their ethical use.

Indian Navy's India-Africa Initiatives: AIKEYME and IOS Sagar

Context:

The Indian Navy has launched major initiatives to enhance cooperation with African nations and countries in the Indian Ocean Region (IOR).

Africa India Key Maritime Engagement (AIKEYME)

Meaning:

- AIKEYME means "Unity" in Sanskrit.

What is it?

- It is the first-ever large-scale India-Africa multinational maritime exercise.

Co-hosted by:

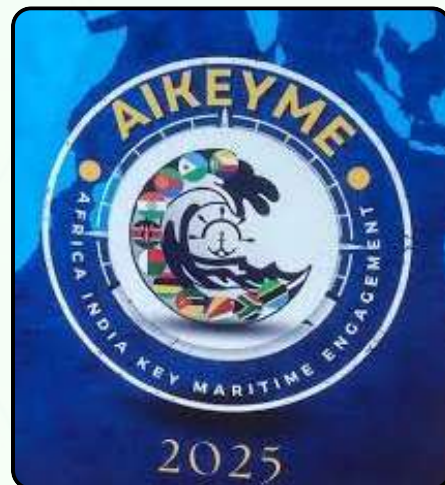
- Indian Navy & Tanzania Peoples' Defence Force (TPDF)

Location:

- Dar-es-Salaam, Tanzania

Participating Nations:

- Africa & IOR countries: Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka, and South Africa



Indian Ocean Ship Sagar (IOS Sagar)

Aim:

- To strengthen naval cooperation and deepen engagement with IOR countries.

Ship Deployed:

- INS Sunayna
 - Duration: April 5 - May 8, 2025
 - Area: Southwest Indian Ocean Region

Crew Composition:

- A joint crew from Indian Navy and 44 personnel from 9 Friendly Foreign Countries (FFC):
 - Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka, South Africa

These initiatives reflect India's growing maritime outreach and strategic partnership with Africa and the IOR.

Large Phased Array Radar (LPAR)

Context:

China has installed a Large Phased Array Radar (LPAR) in Yunnan province, close to the China-Myanmar border.



About the LPAR System

- Range: Over 5,000 km — capable of tracking deep into India and the Indian Ocean.
- Technology:
 - Unlike traditional radars, LPARs use electronic scanning instead of mechanical rotation.
 - This allows faster and broader area coverage.

Strategic Capabilities

Missile & Aircraft Detection:

- Can detect ballistic missiles that leave Earth's atmosphere and re-enter.

Electronic Warfare:

- Can disrupt communication networks, including radio, TV, GPS, and aviation navigation.

Network Integration:

- Part of China's larger early-warning defense system, alongside radars in Korla and Xinjiang.

Implications for India

- The radar's coverage includes Dr. APJ Abdul Kalam Island (Odisha), a key missile testing site.

Missiles tested from the site include:

- Agni-V (Intercontinental Ballistic Missile)
- K-4 (Submarine-Launched Ballistic Missile)

Security Concern:

- China may track missile tests and gather trajectory and speed data, which could help it develop countermeasures and strategic responses.