

DAILY CURRENT AFFAIRS (DCA)

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Table of Content

- CJI Unveils Tower of Justice, Says Judiciary must be Efficient, Impartial
- States Fiscal Math in the Age of 'Freebies'
- India-New Zealand Strategic Partnership: Roadmap to 2030
- Weaving Sustainability Into India's Textile Future
- Indian Lab Demonstrates Quantum Advantage Using IBM Quantum Processor

News In Short

- PM-UDAY Scheme
- EU and 14 Countries Reaffirm Ruling on South China Sea
- Parrot Bornavirus 4
- Direct Seeded Rice (DSR)
- China's Temporary Export Ban on Helium
- Long March 10B Rocket
- Bureau of Port Security (BoPS)

CJI UNVEILS TOWER OF JUSTICE, SAYS JUDICIARY MUST BE EFFICIENT, IMPARTIAL

Context

- The Chief Justice of India inaugurated the “**Tower of Justice**” in Gurugram, a new judicial complex with 56 courtrooms and digital infrastructure.

CJI Remarks

- He underlined that the objective of judicial reforms cannot be limited merely to the speedy disposal of cases and priority must always be to **establish a judicial system that is both efficient and impartial**.
 - It must also be ensured that no citizen feels deprived of justice due to financial, social, or procedural hurdles.
- The goal is to build a **judiciary that is modern yet humane**; technologically advanced yet firmly rooted in constitutional values, and a sensitive institution that understands the human lives underlying every case.

Judiciary in India

- Supreme Court:** The highest court in India, with the authority to interpret the Constitution, adjudicate disputes between states and the center, and oversee the legality of laws and government actions.
- High Court:** Each state or group of states has a High Court, which handles appeals from lower courts and issues related to state-level legal matters.
- District Courts** handle civil and criminal cases at the district level, and various specialized courts such as family courts, consumer courts, and labor courts.
- Each branch operates independently** but is designed to work in harmony with the others, providing a system of **checks and balances** to ensure fair governance and adherence to the Constitution.

Challenges in the Judicial System of India

- Pendency of cases:** The ‘**State of the Judiciary**’ report points out that there are over **five crore pending cases** across all higher and subordinate courts in India.
 - To handle them, however, there are only **20,580 judges** working in the Supreme Court, the high courts and district courts.

- Infrastructure:** Many courts lack basic infrastructure and technology, which can hinder their efficiency.
 - As per the **National Judicial Data Grid**, **19.7%** of district courts did not have separate toilets for women.
- Judicial vacancies:** Against the sanctioned strength of **1,114 judges** in the high courts across the country, as many as **347 positions are vacant**.
 - Similarly, in the district judiciary, out of the total sanctioned strength of 25,081 judges, as many as **5,300 district judges’ positions are vacant**.
- Inclusivity:** India’s highest court presently has **only two female judges**.
 - Since 2014, 170 Women Judges have been appointed in the High Courts, including 96 in the last five years and 06 in the Supreme Court.
 - The district judiciary, however, shows considerable improvement with the strength of **36.33% female judges**.

Initiatives taken address the issue

- Leveraging Information and Communication Technology (ICT);**
 - The Electronic Supreme Court Reports (e-SCR) project** is an initiative to provide the digital version of the apex court’s judgments.
 - Virtual court system:** The regular court proceedings are being carried out virtually via videoconferencing.
 - eCourts portal:** It is a one-stop solution for all stakeholders like the litigants, advocates, government agencies, police, and common citizens.
 - National Judicial Data Grid (NJDG):** The statistics of cases pending at the national, state, district and individual court level are now made accessible to the general public, researchers, academicians and the society at large.
- Judicial Reforms:** It includes increasing the number of judges, modernizing court infrastructure, and implementing e-courts and technology to speed up hearings.
- Alternate Dispute Resolution (ADR):** ADR mechanisms like arbitration, mediation, and conciliation are being promoted to resolve disputes outside of the traditional court system.

- **Commercial Courts Act 2015** stipulates mandatory pre-institution mediation and settlement of commercial disputes.
- **Fast Track courts:** Fast track courts are being set up to expedite the justice delivery and reduce the pendency of cases involving heinous crimes, senior citizens, women, children, etc.

Way Ahead

- **Workload and Capacity:** The courts must operate beyond their current **capacity of 71%** to match case disposal rates with the inflow of new cases.
- **Judicial Vacancies:** Judicial vacancies in district courts stand at **28%**. Standardizing the judicial recruitment calendar is suggested as a solution to fill vacancies and maintain a consistent flow of recruits.
- **District-level Case Management Committees:** These committees should be established to identify target cases, reconstruct records and manage cases efficiently at the district level.
- **The Malimath Committee, 2003** in its report recommended that the period of vacation should be reduced by 21 days, keeping in mind the long pendency of cases.
- The perceived **gap between the district judiciary and the High Courts** needs to be addressed. This gap is seen as a **remnant of colonial subordination** and should be resolved to create a more unified judicial system.

Source: TH

STATES FISCAL MATH IN THE AGE OF 'FREEBIES'

Context

- Welfare freebies are being increasingly offered by states, and while overall state finances in India are broadly stable, fiscal stress is rising in highly indebted states.

Fiscal Position of States

- The combined fiscal deficit of states was below **3 percent of gross domestic product during FY2017-FY2024**, except during the COVID-19 pandemic when the deficit rose to **4.1 percent** of gross domestic product in FY2021.
- The fiscal deficit of states increased to **3.3% of GDP in FY2025** and is projected to stay at the same level in FY2026.

- To ensure fiscal prudence, the **16th Finance Commission** has recommended that states must retain the fiscal deficit limit of **3 percent of Gross State Domestic Product (GSDP)**.

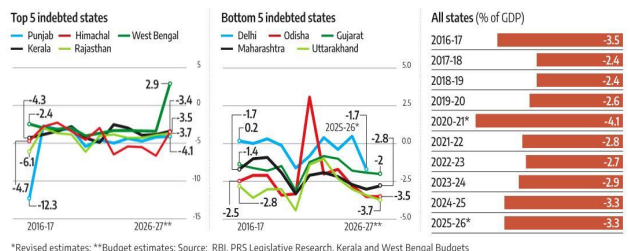
What is the fiscal deficit?

- Fiscal Deficit is defined as excess of total budget expenditure (revenue and capital) over total budget receipts (revenue and capital) excluding borrowings during a fiscal year.
- **Fiscal Deficit = Total Expenditure – (Revenue Receipts + Non-Debt Creating Capital Receipts).**

Variation in Fiscal Management Among States

- States vary widely in their capacity to control **welfare spending** without endangering fiscal stability.
 - Expenditure on **unconditional cash transfer schemes**, particularly those targeted towards women, has increased significantly in recent years.
 - Spending on such schemes has increased from 0.01% of GDP in FY2021 to around **0.57% of GDP in FY2026** (Budget Estimates).
 - Among states, Jharkhand spends the highest share of its **GSDP (Gross State Domestic Product)** on **unconditional cash transfers** at around **2.1%**, followed by **West Bengal, Odisha, Madhya Pradesh, Chhattisgarh, Kerala and Maharashtra**.
 - **Odisha** has been able to fund its welfare schemes largely through its own revenues and has been maintaining a **revenue surplus since FY2016**.

Fiscal balance as % of GSDP



What are Freebies?

- **Freebies** are non-merit, consumption-based benefits that do not create long-term public assets and are usually meant for immediate relief or electoral appeal.

- ♦ Often the practice is used by political parties offering free goods, services, or subsidies to the public, particularly during election campaigns, in an attempt to garner votes.
- **Section 123 of the RP Act deals with 'corrupt practices'**, it says that it is deemed a corrupt practice if any gift, offer or promise of gratification is made to voters directly or indirectly by a candidate or his agent or any other person acting on their consent.
- **S. Subramaniam Balaji vs. State of Tamil Nadu (2013):** The Supreme Court upheld the right of political parties to offer freebies but emphasized that the distribution of freebies should be done responsibly.
 - ♦ It stated that only an individual candidate, not his party, can commit a 'corrupt practice' under the RP Act by promising free gifts.

Concerns Related to Freebie-Based Expenditure

- **Growing debt burden:** States with weak revenue bases and limited fiscal capacity could see their debt burden increase as subsidy and cash transfer expenditure rises.
- **Crowding Out of Productive Spending:** Excess allocation towards revenue expenditure may shrink the fiscal space for investments in infrastructure, health, education and other productive sectors.
- **Less fiscal flexibility:** Long-term commitments under welfare schemes might reduce the capacity of states to respond effectively to financial crises, natural disasters or other emergencies.
- **Fiscal risks not revealed:** Absence of transparency on off-budget borrowing and contingent liabilities can generate hidden fiscal risks and threaten the sustainability of government finances.

Way Ahead

- States need to strengthen their **Fiscal Responsibility and Budget Management (FRBM) frameworks** to ensure fiscal discipline.
 - ♦ The FRBM framework implemented by way of the **FRBM Act, 2003** is a set of rules and principles to ensure fiscal discipline, control government borrowing, reduce fiscal deficits and promote sustainable public finances.

- States need to **increase their own revenue generation** and cut down excessive borrowing.
- More attention should be paid to **productive investment in the form of capital expenditure** and to the promotion of long-term economic growth.
- Public finances should be sustainable, and this requires that **off-budget liabilities be reported transparently** and fiscal assessments be made regularly.

Source: BS

INDIA-NEW ZEALAND STRATEGIC PARTNERSHIP: ROADMAP TO 2030

In News

- The India–New Zealand Strategic Partnership was announced in Auckland and they adopted the **Roadmap to 2030 as a framework for deepening bilateral cooperation** in the next four years.

Background

- India and New Zealand established **diplomatic relations in 1952 and enjoy warm and friendly relations** based on shared values of democracy, membership of the Commonwealth, common legal traditions and inclusive economic development.
- New Zealand has recognised India's growing importance by designating India as a priority partner through initiatives like the **2011 'Opening Doors to India' policy, the NZ Inc.**
- India Strategy and the **2020 'India-NZ 2025: Investing in the Relationship' Strategy**, all of which are aimed at building a more strategic, economic, trade and political partnership.

Latest Developments: Roadmap to 2030

- **Political and Diplomatic Engagement:** India and New Zealand will strengthen their political and diplomatic relations through regular high level interactions, including visits by the respective Prime Ministers, Cabinet Ministers and Foreign Ministers.
 - ♦ They hold annual meetings of senior officials to review, coordinate and ensure effective implementation of the India-New Zealand Strategic Partnership and Roadmap to 2030.
- **Defence and Security Cooperation :** Both the countries will take steps to enhance defence

and security cooperation through regular military exercises, personnel exchanges, defence dialogues and implementation of the 2025 Defence Cooperation MoU.

- **Trade and Economic Cooperation** : Both the countries are looking to enhance economic relations by increasing bilateral trade to NZ\$7 billion (35,000 crore) by 2030, advancing the India-New Zealand Free Trade Agreement (FTA) and simplifying customs procedures through the Mutual Recognition Arrangement.
 - ♦ The two countries will also step up cooperation in horticulture, forestry, animal husbandry and dairying through joint research, technical exchanges and policy cooperation.
- **People, Culture, and Sport** : India and New Zealand will enhance people-to-people linkages through engagement with the diaspora, expanding cooperation in sports, promoting exchanges in traditional medicine and deepening cooperation in the maritime sector including recognition of seafarer competency certificates and maritime heritage.
- **Education, Research, Science and Technology, and Disaster Management:** Both countries will step up cooperation in education with the implementation of the 2025 Education Cooperation Arrangement and the expansion of institutional partnerships.
 - ♦ They will collaborate on climate action, renewable energy through the International Solar Alliance and Global Biofuels Alliance, and encourage joint research and innovation in agriculture, climate, digital transformation and emerging technologies.
- **Regional and Multilateral Cooperation:** India and New Zealand will enhance cooperation in regional and multilateral fora, particularly in ASEAN-led mechanisms and the Indo-Pacific, to support a rules-based international order and peaceful settlement of disputes in accordance with UNCLOS.
 - ♦ They will enhance cooperation at the United Nations, support reforms in the UN Security Council, including India's bid for permanent membership and extend to each other mutual support for their candidatures for international organisations, wherever possible.

Importance

- The India-New Zealand Strategic Partnership is important for India as it consolidates its strategic **footprint in the Indo-Pacific, facilitates Maritime security and widens India's international partnerships.**
- It **promotes trade, investment, agriculture, education, tourism and technology cooperation and broadens cooperation in AI, fintech, digital public infrastructure and frontier technologies.**
- It will also **deepen defence cooperation, boost student and academic exchanges,** strengthen ties with the Indian diaspora in New Zealand .
- It enhances **co-ordination on UN reforms,** climate action, sustainable development and the rules-based international order.

Challenges and Concerns

- **Agricultural Sensitivities:** India's protection of its local small-scale dairy farmers has historically been a stumbling block in trade talks due to a clash with New Zealand's dairy interests.
- **Security & Extremism Issues:** It is a sensitive issue to manage cross-border crime and the activities of pro-Khalistan extremist groups on New Zealand soil, which requires wise diplomatic cooperation.
- **Logistical Connectivity:** The lack of direct commercial flights at the moment is a hindrance to faster tourism growth, business mobility and immediate supply chain links.
- **Geopolitical uncertainties** in the Indo-Pacific also constrain the full scope of the partnership.

Conclusion and Way Forward

- India and New Zealand can effectively implement the Roadmap to 2030 through time-bound action plans, and meet the 2030 trade target by increasing trade and investment.
- They should also work together to build resilient supply chains, foster collaboration in AI, clean energy, space and digital technologies
- There is a need to expand education and research partnerships, increase cooperation on climate resilience and the blue economy.
- There is a need to promote engagement from the private sector and startups, and harness the Indian diaspora to strengthen trade, innovation, and people-to-people ties.

Source :PIB

WEAVING SUSTAINABILITY INTO INDIA'S TEXTILE FUTURE

Context:

- India's textile sector is increasingly embracing **circular economy principles** to improve sustainability, resource efficiency and global competitiveness.

Importance of Textile Industry in India

- The textile and apparel industry is one of the largest manufacturing industries of India.
- It contributes about **2% towards India's GDP** and accounts for **nearly 11% of manufacturing GVA**.
- India is the **6th largest exporter** of textiles and apparel, with **almost 4% of global exports**.
- It directly employs **more than 45 million people**, especially women and rural workers.



Circular Economy For the Textile Industry

- The goal of a circular economy is to extend the productive use of materials as long as possible through **reuse, repair, recycling, upcycling and resource recovery**.
- Circularity reduces waste, saves water and energy, cuts carbon emissions and limits reliance on virgin raw materials, unlike the **traditional take-make-dispose model**.
- India's traditional practices of repair, reuse and recycling of textiles are well suited to this model.

Circularity in India's Textile Value Chain

- Annually **around 7.8 million tonnes** of textile waste are dealt with.
- More than 90 percent comes from domestic pre-consumer and post-consumer waste.
- Almost 70% of textile waste is recovered through **recycling, reuse, upcycling or downcycling**.
- Approximately 95% of factory waste (pre-consumer).
- The diversion rate of post-consumer textile waste from landfill is around 55%.

- The recycling ecosystem provides livelihood to 40-45 lakh people, especially women, in collection and sorting of recyclables.

Successful Circular Textile Models in India

- Navi Mumbai Textile Recovery Facility:** First Municipal Textile Recovery Facility in India integrates collection, sorting, upcycling, technology and livelihood generation.
 - It has handled thousands of textile products, created hundreds of upcycled products, touched over one lakh households, and empowered women artisans with market access.
- Panipat (India's Textile Recycling Hub):** Panipat has emerged as the largest downstream textile recycling cluster in India.
 - Collection, sorting, processing, knitting and recycling manage **3,500 to 5,250 tonnes of textile waste per day**.
 - The cluster has huge potential for high-value **textile-to-textile recycling**.
- Katran Market, Mongolpuri in Delhi (Informal Circular Economy):** Contribution of informal sector towards sustainability.
 - Workers pick up cuttings from garments clusters and segregate them into different colours and qualities, and send recyclable material to Panipat, thus adding strength to India's circular value chain.

Government Initiatives Across Textile Value Chain

- National Programme for Organic Production (NPOP):** It encourages organic-certified production.
 - Organic cotton certification is internationally recognised.
 - It allows exports to European markets.
- Jute-ICARE:** It promotes scientific and sustainable cultivation of jute. It also promotes certified seeds and improved retting techniques.
 - It is very greatly expanded over states and cultivated areas.
- New Age Fibre Mission:** Promotion of sustainable fibres like flax, sisal and ramie.
 - The goal is to establish India as a global leader of climate-smart fibre production.
- National Fibre Scheme:** It has a focus on natural fibre, manmade fibre and advanced fibre.
 - Its objective is to cut down import dependence and spur innovation.

- **PM MITRA Parks:** The PM Mega Integrated Textile Region and Apparel (PM MITRA) Parks are based on the **5F Vision: Farm Fibre Factory Fashion Abroad**
 - ♦ **Sustainability features include:** Common Effluent Treatment Plants (CETPs); recycling of waste water; scientific waste management; shared green infrastructure
 - ♦ There are seven integrated parks being developed in various states.
- **Assistance to MSMEs:** As MSMEs constitute more than 80% of the textile production capacity, support is being provided for a green transition through:
 - ♦ **MSE-GIFT:** Interest subsidy, credit guarantee, support for green technologies.
 - ♦ **MSE-SPICE:** It promotes circular economy, resource efficient technologies and capital subsidy for sustainable machinery.
- **Indian Carbon Market:** Textile industries to report carbon emissions under **Carbon Credit Trading Scheme (CCTS), 2023**.
 - ♦ Those that cleanly produce more than their target are rewarded with Carbon Credit Certificates, providing a financial incentive to go beyond emissions targets.

Waste Management and Resource Recovery

- **Textile Recycling Potential:** The textile recycling industry in India is likely to reach nearly **USD 3.5 billion by 2030** and create about **one lakh green jobs** over the next five years.
- **Solid Waste Management Rules, 2026 under Environment (Protection) Act, 1986:** The updated Rules strengthen waste segregation, Extended Producer Responsibility (EPR), resource recovery and circular economy principles.
 - ♦ They promote the use of **Refuse Derived Fuel (RDF)** from high calorific wastes such as textiles.
- **National Technical Textiles Mission (NTTM):** It supports research on conversion of textile waste, biomass utilisation, carbon fibres and advanced sustainable materials.
- **Effluent Standards:** The textile industries need to set up Effluent Treatment Plants (ETPs) and **Common Effluent Treatment Plants (CETPs)** to meet the environmental discharge norms as per Environment (Protection) Rules.

Promoting Sustainable Markets

- **Eco-Mark Scheme, 2024:** Textiles are included in India's Eco-Mark certification. It assesses products on resource efficiency, energy use, climate impact, waste production and hazardous substances.
- **Traceability and Quality Certification: Kasturi Cotton and Silk Mark** are initiatives that boost traceability, responsible sourcing and acceptance in the international market.
- **Bharat Tex:** The event has emerged as India's flagship textile expo featuring sustainable textiles, technical textiles, innovations from MSMEs, circular economy practices and international buyer-seller meetups.
 - ♦ The event is a reflection of India's ambition to become a global hub for sustainable textile manufacturing.
- **Reduction of Hazardous Chemicals:** India has banned benzidine-based dyes and various hazardous azo dyes, and made commitments to the **Stockholm Convention on Persistent Organic Pollutants (POPs)**.
- **Awareness Campaigns:** Key programmes are Sustainable Resolution (SURE), Circle Back Campaign, Circular Samvaad and Cluster Exchange Mechanism.
 - ♦ These encourage sustainable consumption, recycling and the adoption of ESG practices across the industry.

Challenges

- Limited recycling of mixed fibre textiles.
- Dominance of informal recycling sector.
- Limited technologies for textile to textile recycling.
- High water consumption in the processing.
- Dyeing units chemical pollution.
- Low consumer awareness on sustainable fashion.
- More traceability across supply chains is required.

Road Ahead

- Utilise the Extended Producer Responsibility (EPR) for textiles.
- Promote fibre to fibre recycling technologies.
- Formalisation and incorporation of informal waste collectors.
- Scaling up green finance to MSMEs.

- Enhanced traceability through digital technologies.
- Promote sustainable public procurement.
- Boost research on bio-based fibres and technical textiles.
- Align Indian Standards with new global sustainability regulations.

Source: PIB

INDIAN LAB DEMONSTRATES QUANTUM ADVANTAGE USING IBM QUANTUM PROCESSOR

Context

- Scientists from BITS Pilani, in collaboration with IBM Quantum, have developed a quantum algorithm that demonstrated **quantum advantage** by simulating the behaviour of subatomic particles on a 120-qubit quantum processor.

Key Findings

- The quantum processor completed the simulation in **20 seconds**. A classical computer required around two hours for the same calculation.
- The achievement has been recognised as “**active**” by the Quantum Advantage Tracker (QAT).
 - ♦ In the reference of the QAT “active” means that the **claim of quantum advantage is currently valid** and has not been disproved or overtaken by classical computing methods.
- **Significance:** It is the first quantum advantage claim from an Indian laboratory to receive active status.

What is Quantum Computing?

- Quantum computing refers to a new class of computers that **use the principles of quantum mechanics** rather than classical binary logic.
- Classical computers process information using bits (0 or 1), while quantum computers **use qubits, which can exist in multiple states simultaneously**.
- This capability allows quantum computers to perform certain calculations exponentially faster than conventional computers.

Principles of Quantum Computing

- **Superposition:** It allows a qubit to **exist in multiple states simultaneously**, enabling quantum computers to perform many calculations in parallel.
- **Entanglement:** It occurs when two or more qubits become strongly correlated, such that the state of one instantly determines the state of the other.
 - ♦ This property allows quantum computers to process and link information efficiently, helping solve complex problems faster.
- **Decoherence:** Decoherence refers to the loss of a qubit's quantum state due to interaction with the environment (such as radiation or heat).
 - ♦ **Preventing or delaying decoherence** is a major challenge in building stable quantum computers.

Quantum Computing	Vs.	Classical Computing
 Calculates with qubits, which can represent 0 and 1 at the same time		 Calculates with transistors, which can represent either 0 or 1
 Power increases exponentially in proportion to the number of qubits		 Power increases in a 1:1 relationship with the number of transistors
 Quantum computers have high error rates and need to be kept ultracold		 Classical computers have low error rates and can operate at room temp
 Well suited for tasks like optimization problems, data analysis, and simulations		 Most everyday processing is best handled by classical computers

What is Quantum Advantage?

- Quantum advantage refers to an information processing task performed more efficiently, cost-effectively, or accurately using a quantum computer than is known to be possible with classical computers alone.
- Quantum advantage is not universal; quantum computers are not faster for every type of calculation.

Quantum Advantage Tracker (QAT)

- The Quantum Advantage Tracker (QAT) is an open-source, platform-agnostic framework designed to collect, validate, and compare experimental results in the pursuit of quantum advantage.

- ♦ It verifies claims of quantum computing superiority. QAT requires users to match quantum results against classical methods to stop exaggerated claims.
- **It uses three paths:** observable estimations, variational problems, and classically verifiable problems.
- **Importance:** Prevents exaggerated claims regarding quantum computing capabilities and provides credibility to genuine breakthroughs.

Challenges in Quantum Computing

- **Lack of Indigenous Quantum Hardware:** India currently depends on foreign quantum processors for advanced research.
- **Quantum Error and Noise:** Maintaining stable qubits for longer durations is difficult.
- **Limited Real-World Applications:** Most quantum demonstrations are still experimental and commercial applications require further technological maturity.

National Quantum Mission (NQM)

- The Union Cabinet approved the **National Quantum Mission (NQM) in 2023** at a total cost of **Rs.6003.65 crore** from **2023-24 to 2030-31**.
- It aims to seed, nurture and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology (QT).
- **The Mission objectives** include developing intermediate-scale quantum computers with **50-1000 physical qubits in 8 years** in various platforms like superconducting and photonic technology.
- **Four Thematic Hubs (T-Hubs)** have been established under NQM to strengthen India's position as a global leader in quantum technology.

Quantum Domains of Four Thematic Hubs



Source: TH

NEWS IN SHORT

PM-UDAY SCHEME

In News

- Recently Delhi CM has sought 100 crore as a first phase central government financial assistance to implement the revised Pradhan Mantri Unauthorised Colonies in Delhi Awas Adhikar Yojana (PM-UDAY) in the national capital.

The Pradhan Mantri –Unauthorised Colonies in Delhi Awas Adhikar Yojana (PM-UDAY)

- It was launched on 29 October 2019 under the NCT of Delhi (Recognition of Property Rights of Residents in Unauthorised Colonies) Regulations, 2019 .
- ♦ The DDA has an online portal for issuance of Conveyance Deeds (for government land) and Authorisation Slips (for private land). As at 31 March 2026, about 40,000 documents have been issued.
- ♦ Certificates of Regularisation and provision of civic infrastructure would be issued by the MCD and local bodies.
- It aims to provide ownership, transfer and mortgage rights to the residents of eligible unauthorised colonies in Delhi, on the basis of documents like General Power of Attorney (GPA), Agreement to Sell, payment receipts and possession documents.
- It does not cover colonies in prohibited areas such as forests, protected monuments, Yamuna floodplains, road rights of way, ridge areas and 69 affluent unauthorised colonies.

Source :HT

EU AND 14 COUNTRIES REAFFIRM RULING ON SOUTH CHINA SEA

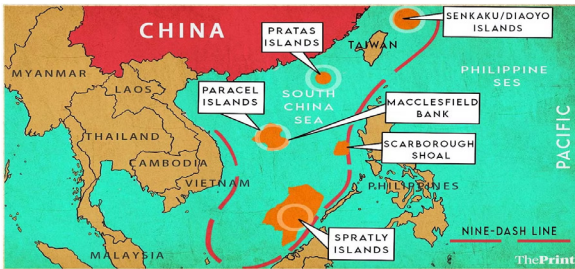
Context

- The US, the UK and other Western and Asian countries reasserted that China's expansive claims in the South China Sea are illegal based on a 2016 arbitration ruling.

South China Sea

- It is a marginal sea of the **Western Pacific Ocean**.
- It is located between **southern China, Taiwan, the Philippines, Indonesia, Vietnam, Thailand, Cambodia and Malaysia**.

- It is a crucial maritime gateway and junction for shipping between the **Pacific and Indian Oceans**.



Dispute in South China Sea

- Southeast Asian countries like **China, Vietnam, the Philippines, Brunei, Malaysia and Taiwan** have had disputes over the contentious South China Sea region for centuries.
- The two primary points of contention are: The **Spratly Islands** and the **Paracel Islands** in the sea.
- Nine-dash line:** China stakes claim to most of the region and at the heart of this claim is the U-shaped 'nine-dash line' that includes as much as **90 percent** of these waters.
 - This dotted line was adopted from Chinese maps in the 1940s, and represents Beijing's claim over the sea and all the land features that are contained within the line.

2016 Arbitration Ruling

- In 2013, the Philippines initiated arbitration proceedings against China under the **United Nations Convention on the Law of the Sea (UNCLOS)** after a maritime dispute over the Scarborough Shoal in the South China Sea.
- A tribunal constituted under the **Permanent Court of Arbitration (PCA)**, The Hague, delivered its verdict in **July 2016**.
- Key findings:** China's historic rights claims within the **Nine-Dash Line** have no legal basis under UNCLOS.
 - Disputed features in the South China Sea do not generate extensive maritime zones.
 - The ruling was declared **final and legally binding** under UNCLOS.
- China continues to reject the ruling, calling it "null and void" and refusing to recognise third-party arbitration.

Source: TH

PARROT BORNAVIRUS 4

Context

- Deadly bird virus PaBV-4** has been identified for the first time in India.

About

- Parrot Bornavirus 4 (PaBV-4)** is a **highly contagious virus** that often causes rapid death in **captive psittacine birds**.
 - Psittacine** means relating to or resembling a parrot, describes the bird family Psittacidae and order Psittaciformes.
 - It includes budgerigars, cockatiels, cockatoos, lovebirds, macaws, and parakeets.
- The virus is most commonly associated with **Proventricular Dilatation Disease (PDD)**, a **serious neurological and digestive disorder** that affects a **bird's ability to process food**.
- Infected birds may show symptoms such as** weight loss, regurgitation, poor coordination, weakness and behavioural changes. In severe cases, the infection can prove fatal.
- It is not considered a zoonotic disease** i.e. it does not naturally transmit from animals to humans.

Source: TH

DIRECT SEEDED RICE (DSR)

In News

- Recently, the Chhattisgarh government issued an advisory to focus on prioritising Direct Seeded Rice (DSR) over the traditional transplanting method against the backdrop of the uncertainty of rainfall due to El Niño.

Direct Seeding of Rice

- It refers to the practice of sowing rice seeds directly onto the main field without using a nursery to transplant seedlings. It is also known as the '**tar-wattar**' technique.
- It can be accomplished by sowing pre-germinated seed into wet soil (wet seeding via broadcast or drum seeder) or by planting dry seed (dry seeding by broadcast and seed-cum-fertilizer drill) on prepared ground.

Difference Between DSR and traditional method of transplantation

- In the traditional method of transplantation, paddy seeds are first grown in the nurseries for 25 to 35 days, then transplanted to the flooded fields.

- ♦ This method is water and labour intensive but generally improves crop health and yield.
- In Direct Seeded Rice (DSR) seeds are sown directly into the main field and no nursery is prepared and seedlings are transplanted.
 - ♦ Sowing is done 20-30 days before the transplanting schedule.
 - ♦ Fields are irrigated and laser-levelled before sowing. Seeds are treated with fungicide, soaked for 8 hours and dried for half a day for better germination and disease resistance.
- DSR requires first irrigation after 21 days of sowing and 14-17 irrigations at 7-10 days interval depending on soil and rainfall.
 - ♦ Conversely, the conventional transplanting method requires 25–27 irrigations. Thus DSR is very water-efficient.

Benefits of DSR

- It can reduce water use by 15% to 20% (the traditional puddling method requires 3,600 to 4,125 litres of water to grow a single kilo of rice).
- It requires less labour and it matures 7 to 10 days faster, giving farmers more time to manage paddy straw.
- It offers low production cost and provides better soil physical conditions for following crops and less methane emission.

Challenges associated with DSR

- Weeds are the biggest significant impediment to the success of DSR.
 - ♦ Weeds are more problematic in DSR than in puddled transplanting because sprouting weeds compete with simultaneously emerging DSR seedlings.
- Direct planting can help to reduce methane emissions, aerobic soil conditions can also increase nitrous oxide emissions.
 - ♦ Nitrous oxide generation increases with redox potential.
- Micronutrient deficiencies are a prominent cause of concern in DSR such lack of iron content of the soil can severely impact yields and lead to major financial losses for farmers.

Source :TH

CHINA'S TEMPORARY EXPORT BAN ON HELIUM

Context

- The Ministry of Commerce and General Administration of Customs, China, has temporarily banned helium exports from the country.

About Helium

- Helium is an **odorless, nontoxic, colorless, tasteless** gas. It has a very **low chemical reactivity** and it is lighter than air.
- Helium exists as a gas except under extreme conditions. At temperatures near **absolute zero**, **helium is a liquid**.
- On Earth, Helium is a **non-renewable natural resource** that is mostly recovered from **natural gas deposits**.
 - ♦ It is formed deep inside the Earth through the **radioactive decay of uranium and thorium**, which releases alpha particles that capture electrons to form helium atoms.
- **The world's major helium producers** are the **U.S. (43% of total supply)**, followed by **Qatar, Russia, Canada, and Algeria**.

How is Helium Obtained?

- Helium is extracted as a **by-product** of natural gas processing. Commercial extraction becomes viable only when **helium concentration exceeds 0.3% by volume**.
- It is separated from other gases based on its extremely **low boiling point (-269°C)**.
- Commercial-grade helium generally requires **99.997% purity**.

Applications

- Liquid helium is used to **cool down magnets in MRI machines** that doctors use to examine people for **cancer and other diseases**.
- A mixture of **80% Helium-20% Oxygen** mixtures is used for deep sea diving.
- Helium is used in cardio-pulmonary resuscitation pumps during heart surgery
- Helium is critical in **rare document preservation** (like the Declaration of Independence of the United States).
- Helium is used as a **leak detection agent** for extremely small leaks since it won't react with other gases due to its inert properties.
- **Helium-Neon lasers** are used in **eye surgery**.

Source: TH

LONG MARCH 10B ROCKET

In News

- China successfully achieved its **first reusable rocket landing at the Wenchang Commercial Space Launch Site**, making a precise sea-based recovery after separation.

About Long March 10B

- The Long March 10B also written CZ-10B is a **two-stage, medium-lift, partially reusable rocket built** by the China Academy of Launch Vehicle Technology (CALT).
- It's a **commercial derivative of the Long March 10A**, the variant China is developing for crewed lunar missions with the third stage and side boosters removed.
- It is 63 meters long, weighs about 760,000 kilograms at liftoff, and can carry up to 16,000 kg to low Earth orbit in reusable mode.
- The booster uses seven **liquid oxygen–kerosene engines**, while the upper stage runs on a liquid oxygen–methane engine.

Why it matters?

- China is now the second country to recover an orbital-class booster after propulsive descent** — joining SpaceX and Blue Origin as reusable-rocket manufacturers, and becoming the first country outside the U.S. to pull this off.
- Reusable rockets can **sharply lower launch costs**, helping China deploy large satellite constellations and compete with Western broadband networks

Source: TH

BUREAU OF PORT SECURITY (BOPS)

Context

- The Union Home Minister reviewed the **progress in the establishment of the Bureau of Port Security (BoPS)**.

About

- The Bureau of Port Security is being established as a **statutory body under Section 13 of the Merchant Shipping Act, 2025**.
- It is to be **headed by a director general**, the Bureau will function under the **Ministry of Ports, Shipping and Waterways**.
- The Bureau is being modelled on the lines of the **Bureau of Civil Aviation Security (BCAS)**.
- Functions:**
 - It will be responsible for **regulating and inspecting the security of ships and port facilities**.
 - The Bureau will also ensure the **timely collection, analysis and sharing of security-related information**, with a special focus on **cybersecurity**.
 - A dedicated division will **safeguard the IT infrastructure of ports against cyber threats**.
- The Central Industrial Security Force (CISF)** has been designated as a **Recognised Security Organisation (RSO) for port facilities** with responsibility for undertaking security assessments and preparation of security plans for ports.

Source: AIR

