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Time: 45 Min

Date: 28-07-2025

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AUSTRALIA- UK SIGN 50-YEAR GEELONG TREATY UNDER AUKUS

Context

- Australia and the UK signed the bilateral Nuclear-Powered Submarine Partnership and Collaboration Treaty (**the Geelong Treaty**) in Geelong, Australia, solidifying their commitment to the AUKUS defense pact.

About Geelong Treaty

- The Geelong Treaty is a historic agreement that commits the UK and Australia to **50 years** of bilateral defense cooperation under **AUKUS Pillar I.**
- The Treaty will enable comprehensive cooperation on the design, build, operation, sustainment, and disposal of their **SSN-AUKUS submarines.**
- The signing of the treaty came as the United States wavered on its role in the AUKUS alliance.
  - It has announced a review of the trilateral security partnership to determine whether the agreement aligns with the **America First agenda.**

What is AUKUS?

- AUKUS is a **trilateral defence and security partnership** between **Australia, the United Kingdom and the United States.**
- It was established in **2021** to bolster their allied deterrence and defense capabilities in the **Indo-Pacific.**
- The trilateral partnership has two pillars.
  - **Pillar I** revolves around the acquisition and development of conventionally armed nuclear-powered submarines for the Royal Australian Navy;
  - **Pillar 2** focuses on cooperation in eight advanced military capability areas: artificial intelligence (AI), quantum technologies, innovation, information sharing, and cyber, undersea, hypersonic and counter-hypersonic and electronic warfare domains.

Why was AUKUS formed?

- **Increasing Presence of China:** The Indo-Pacific region has witnessed increasing geopolitical tensions, including territorial disputes, military build-up, and assertive behavior by China.
  - The participating countries share concerns about maintaining peace, stability, and freedom of navigation in the region.
- **Technological Cooperation:** AUKUS aims to enhance technological cooperation, particularly in the field of defense and security.
- **Alliance Strengthening:** AUKUS represents a deepening of security ties between Australia, the United Kingdom, and the United States.
- **Response to Regional Dynamics:** The formation of AUKUS is seen as a response to shifting regional dynamics and evolving security challenges in the Indo-Pacific.
  - It reflects a broader trend of countries in the region seeking to forge closer security partnerships and alliances to address common concerns and counterbalance China's influence.

Opportunities of the treaty

- **Australia:** It will become one of the few countries in the world to have nuclear-powered submarines. This strengthens its navy and gives it more defence independence.
- **UK:** It boosts the UK's **defence manufacturing sector**, especially in areas like submarine production. It also strengthens the UK's presence in the Indo-Pacific.
- **Technology and Security:** Through AUKUS Pillar II, the three countries will also work together on Artificial Intelligence (AI), Quantum technologies, Cyber security, Underwater robotics and Hypersonic weapons.

India's View on AUKUS

- India is not part of AUKUS and has maintained a neutral and non-aligned position regarding its formation.
- India sees opportunities in AUKUS for regional stability but remains wary of nuclear proliferation risks and China's reaction, especially in the Indian Ocean.
- India continues to engage bilaterally with AUKUS members (US, UK, Australia) through defence dialogues, technology partnerships, and Quad summits.
- While India shares the core objective of ensuring peace, stability, and a rules-based order in the Indo-Pacific, it remains **wary of the precedent set by the transfer of nuclear propulsion technology** to a non-nuclear weapons state under the **Nuclear Non-Proliferation Treaty (NPT).**

Challenges

- **US Production Capability:** The US currently builds ~1.13 Virginia-class submarines per year, but needs ~2.33 to fulfill AUKUS and US demands. Delays could leave Australia without submarines in the earliest years.
- **US Policy Uncertainty:** The ongoing US review of AUKUS, aligns with political shifts under an "America First" agenda, creating strategic ambiguity for both Pillar I and II.
- **Non-Proliferation Scrutiny:** Concerns are raised over precedent-setting transfer of nuclear propulsion technology to a non-nuclear weapon state, even under IAEA safeguards and NPT compliance.
- **Industrial Complexity:** Building a reliable submarine industrial base demands continuous workforce, expertise, and infrastructure development over decades. Supply chain gaps or political shifts could disrupt progress.

Concluding remarks

- The Geelong Treaty strengthens Australia–UK defence ties under AUKUS, ensuring long-term cooperation on nuclear submarines and advanced technologies.
- For India, it offers both strategic opportunities and nuclear governance concerns, requiring careful monitoring to safeguard its interests in the Indo-Pacific.

Source: AIR

TEXTILE SECTOR IN INDIA

Context

- PM Modi in his Mann Ki Baat program, remarked that the **textile sector has become a major strength of the country.**

About

- He mentioned that over **3,000 textile start-ups** are now active in India, many of which are promoting India's handloom identity on a global scale.
  - The Prime Minister pointed out that this year marks the **10th anniversary of National Handloom Day.**

Overview of India's Textile Industry

- **Contribution:** The textile and apparel industry contributes **2.3% to our GDP, 13% to industrial production, and 12% to exports.**
- **Export Basket:** India exported textile items worth US$ 34.4 billion in 2023-24, with apparel constituting 42%, followed by raw materials/ semi-finished materials at 34% and finished non-apparel goods at 30%.
- **Employment:** It is the **second largest employment generator**, after agriculture, with over 45 million people employed directly.
  - Nearly 80% of its capacity is spread across Micro, Small and Medium Enterprises (MSME) clusters in the country.
- **Future Projections:** Indian textile market currently **ranks fifth globally**, and the government is actively working to accelerate this growth to a rate of **15-20% over the next five years.**

Challenges Faced by the Sector:

- **Fragmented Structure:** Predominantly unorganised and decentralised, especially in the powerloom and handloom sectors.
- **Outdated machinery in many units leads to:** Low productivity, poor quality output and higher operational costs compared to global competitors (e.g., China, Bangladesh).
- **Inadequate Infrastructure:** Poor logistics, power shortages, and high cost of electricity.
- **Environmental Concerns:** Textile processing is water- and chemical-intensive.
  - Non-compliance with environmental norms leads to factory closures and export bans.
- **Stiff Global Competition:** Competes with low-cost producers like Bangladesh, Vietnam, and China.
  - India's higher production and compliance costs reduce export competitiveness.
- **Fluctuating Export Demand:** Trade barriers, global economic slowdown, and changing consumer preferences affect exports.
  - Lack of Free Trade Agreements (FTAs) with key markets like the EU hampers growth.

Government Initiatives for the Growth of Textile Sector:

- **The Make in India initiative** has catalyzed textile manufacturing and exports through key policy interventions, enhanced infrastructure, and incentives.
- **Production Linked Incentive (PLI) Scheme for Textiles:** To increase manufacturing in man-made fibre (MMF) and technical textiles.
  - Financial incentives for large-scale textile manufacturers.

- **PM MITRA (Mega Integrated Textile Region and Apparel) Parks:** For developing integrated large scale and modern industrial infrastructure facilities for the total value-chain of the textile industry like spinning, weaving, processing, garmenting, textile manufacturing, processing & textile machinery industry.
  - **Current Status:** A total of 7 Parks established in states of Gujarat, Maharashtra, Madhya Pradesh, Tamil Nadu, Karnataka, Uttar Pradesh, and Telangana.
- **Amended Technology Upgradation Fund Scheme (ATUFS):** It provides capital subsidies for technology upgradation.
- **Samarth (Scheme for Capacity Building in Textile Sector):** To provide skill training to workers in the textile industry, in partnership with the Ministry of Skill Development & Entrepreneurship.
- **Textile Cluster Development Scheme (TCDS):** To create an integrated workspace and linkages-based ecosystem for existing as well as potential textile units/clusters to make them operationally and financially viable.
- **National Technical Textiles Mission (NTTM): The Mission focuses on:** research, innovation and development; promotion and market development; education and skilling and; export promotion in technical textiles to position the country as a global leader in technical textiles.
- **Union Budget Allocations for Ministry of Textiles:** The Union Budget announced an outlay of 5272 crores for the Ministry of Textiles for 2025-26.
  - This is an increase of 19% over budget estimates of 2024-25.

Conclusion

- The Make in India initiative has significantly enhanced India's position in global textile manufacturing and exports through targeted policies, infrastructure development, and investment promotion.
- With sustained efforts, India is poised to become a global textile leader, driving economic growth and employment generation.

Source: TH

BOOST TO INDIA'S SEAFOOD EXPORTS TO THE UK AFTER CETA

Context

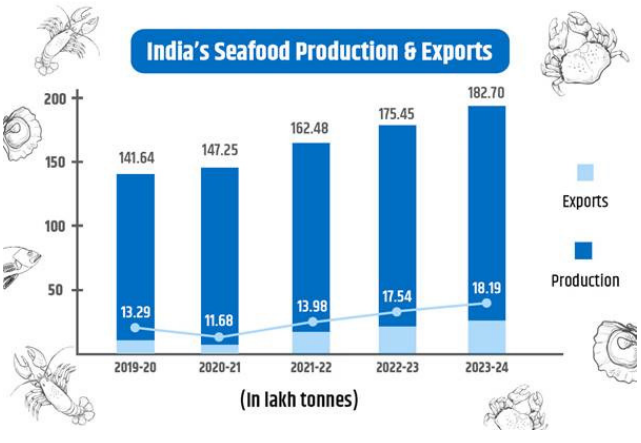
- **The Comprehensive Economic and Trade Agreement (CETA)** between India and UK **removes import tariffs** on a **wide range of seafood products**, enhancing Indian exporters' competitiveness in the UK market.

About

- **India's key seafood exports to the UK** currently include Vannamei shrimp, frozen squid, lobsters, frozen pomfret, and black tiger shrimp.
  - These products previously attracted tariffs ranging from **0% to 21.5%,** all of which are now removed, substantially **improving cost competitiveness** in the UK market.
- **Indian seafood** now competes on par with countries like **Vietnam and Singapore, which already benefit from FTAs with the UK.**
- **India's share in the UK's $5.4 billion** seafood import market is just **2.25%.**
  - With CETA now in force, **industry estimates project a 70% surge** in marine exports to the UK in the coming years.

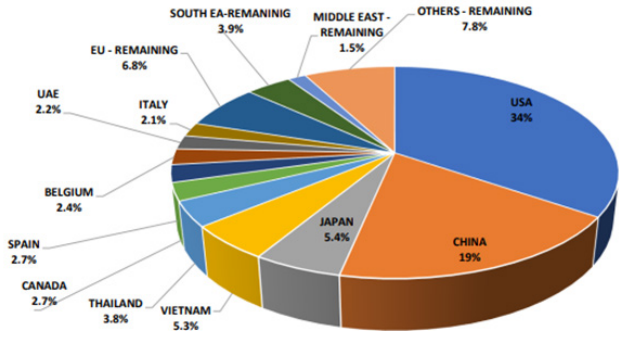
India's Seafood Industry

- India is the **third-largest** fish and aquaculture-producing country.
  - It accounts for **8%** of the total global fish production.
- **India mainly has eight major fish-producing states:** Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Odisha, Tamil Nadu, and West Bengal.
- **India's total seafood exports in 2024–25** reached $7.38 billion, amounting to 1.78 million metric tonnes.
  - Frozen shrimp remained the top export, accounting for **66% of earnings with $4.88 billion.**



- **India exported marine products to 132 countries**, demonstrating its extensive reach in the global seafood market. **Top five destinations are:** USA, China, Japan, Vietnam and Thailand.

Major Market wise Exports 2023-24 (Value USD)



Government Initiatives to Boost Seafood Exports:

- **Infrastructure Development: The Marine Products Export Development Authority (MPEDA)** offers assistance to upgrade processing facilities, establish quality testing laboratories, and participate in international trade fairs.
  - This helps enhance the quality and competitiveness of Indian seafood products in global markets.
- **Aquaculture Support:** This support includes the transfer of advanced technologies and best practices to increase production and productivity.
- **Duty Reduction:** The government in Budget 2024-25 has reduced import duties on essential ingredients used in seafood feed.
  - Key reductions include the complete removal of duties on fish lipid oil, algal prime, crude fish oil, and pre-dust breaded powder.
  - Additionally, import duties on krill meal, mineral and vitamin premixes, and prawn/ shrimp and fish feed have been significantly lowered.
- **Export Incentives:** The government has enhanced the Remission of Duties and Taxes on Export Products (RoDTEP) scheme.
  - The refund rate for various seafood products has been increased from 2.5% to 3.1% of the export value, with a higher cap of Rs. 69 per kilogram.
- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** This flagship scheme aims to modernize the fisheries sector, including developing cold chain infrastructure, reducing post-harvest losses, and improving overall productivity.

Challenges and existing Issues

- **Overfishing**: Excessive catch limits and unsustainable practices are threatening marine biodiversity and long-term productivity.
- **Climate Change and Pollution:** Rising ocean temperatures, acidification, and coastal pollution are disrupting breeding cycles and lowering catch volumes.
- **Infrastructure and Export Hurdles** – Inadequate cold chain infrastructure, poor handling practices, and stringent international quality standards hamper seafood exports.

Conclusion

- India's seafood industry has demonstrated **robust growth and resilience** over the past five years, significantly enhancing its position in the global market.
- India has not only increased its production and export volumes but also expanded its market reach to 132 countries.
- With India's vast production capacity, skilled manpower, and improved traceability systems, CETA enables Indian exporters to seize a larger share of the UK market and diversify beyond traditional partners like the US and China.

Source: PIB

INDIA'S PREPARATION AGAINST GLACIAL LAKE OUTBURST FLOOD (GLOF) EVENTS

In News

Recently ,Nepal faced a severe Glacial Lake Outburst Flood (GLOF) on July 8, causing flash floods along the Lende river, destroying a China-built bridge and disabling hydro plants that supplied 8% of Nepal's power.

Do you know ?

- With glacial melt increasing GLOF risks, Nepal has suffered repeated events, but lacks early warnings—especially for trans-boundary lakes in Tibet.
- Nepalese officials criticized the absence of alerts from China despite rising risks.
- Past major GLOFs in 1981, 1985, and 1998 highlight the urgency for cross-border early warning systems. Nepal has initiated mitigation efforts at some high-risk lakes, but more collaborative action is needed.

What is Glacial Lake Outburst Flood (GLOF)?

- It is the sudden, catastrophic release of water from a glacier-formed lake, often dammed by ice, debris, or bedrock.

- They produce extreme peak discharges, far exceeding normal flood levels, and can trigger destructive debris flows due to their high erosion and transport power.

Causes

- **Moraine or Ice Dam Failure:** Weak structural integrity due to melting or seismic activity.
- **Rising temperatures:** Rising temperatures have led to rapid glacier melting, forming unstable moraine-dammed lakes
- **Avalanches and Landslides:** Sudden mass movements into lakes can displace water and cause dam failure
- **Seismic Events:** Seismic Activity: Earthquakes can destabilize moraine dams or trigger landslides.
- **Heavy Rainfall and Cloudbursts**: Excessive precipitation increases lake volume and pressure on natural dams.

Impacts of GLOFs

- **Loss of Life and Livelihoods:** Events like the 2023 South Lhonak lake breach in Sikkim killed over 100 people and displaced thousands.
- **Infrastructure Damage:** Bridges, roads, and hydropower projects are highly vulnerable.
- **Environmental Degradation:** GLOFs erode riverbanks, trigger landslides, and disrupt ecosystems.
- **Economic Losses:** Damage to power stations, transport networks, and agriculture leads to long-term economic setbacks.

Situation In India

- The Indian Himalayan Region (IHR), home to 11 river basins and 28,000 glacial lakes, faces growing threats from glacial lake outburst floods (GLOFs), driven by rising global temperatures and complex terrain.
- Two main lake types—supraglacial and moraine-dammed—are particularly vulnerable, with most GLOFs triggered by ice avalanches, landslides, or meltwater pressure.
- With 7,500 lakes located at high altitudes above 4,500 metres, monitoring is limited to remote sensing, which only tracks surface growth after the fact and offers little for early warning.
- **Vulnerable downstream areas** face severe risks to infrastructure, ecosystems, and lives, as seen in the 2023 South Lhonak GLOF in Sikkim and the 2013 Kedarnath disaster.

Government Response

- Central Government has approved **National Glacial Lake Outburst Flood (GLOF) Risk Mitigation Project (NGRMP)** for its implementation in four states namely, Arunachal Pradesh, Himachal Pradesh, Sikkim and Uttarakhand at a financial outlay of Rs.150.00 crore.
- India, through the National Disaster Management Authority (NDMA), is shifting from a post-disaster response approach to proactive GLOF risk reduction.
- Its Committee on **Disaster Risk Reduction (CoDRR)** coordinates central agencies, research institutions, and States/UTs to monitor and mitigate GLOF threats.
- A national programme was launched, initially focusing on 56 at-risk glacial lakes, now expanded to 195, ranked by risk level.
    - The programme's five key objectives are:Hazard assessment of glacial lakes,Installation of Automated Weather and Water Stations (AWWS),Deployment of Early Warning Systems (EWS) downstream,Risk mitigation through water drawdown or retention structures and Community engagement for preparedness and resilience

Progress

- India's GLOF mitigation efforts have shown promising progress, with multi-institutional expeditions across J&K, Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh returning successful outcomes.
    - These teams conducted bathymetry, slope surveys, and Electrical Resistivity Tomography (ERT) to assess lake volumes and moraine dam stability.
- **Community engagement proved essential,** with local cooperation critical to success.
- **Monitoring stations have been installed** at two lakes in Sikkim, providing real-time weather and water data.
- In the absence of automated systems, the Indo-Tibetan Border Police (ITBP) assists with manual early warnings.
    - More monitoring systems and expeditions are planned post-monsoon to close critical data gaps in the region.

Suggestions and Way Forward

- **Improve Early Warning Systems** and cell broadcast alerts in vulnerable zones.

- **Transboundary Cooperation**: Collaborate with Nepal, Bhutan, and China for upstream monitoring.
- **Infrastructure Planning**: Avoid critical installations downstream of high-risk lakes.
- **Climate Adaptation**: Integrate GLOF risk into broader Himalayan climate resilience strategies.

Source :TH

INDIA'S INSURANCE SECTOR SET TO MORE THAN DOUBLE BY 2030: IBAI-MCKINSEY REPORT

Context

- Recently, a joint report by the Insurance Brokers Association of India (IBAI) and McKinsey & Company outlined that India's insurance industry is projected to surge by 123% by 2030 — from 11.2 lakh crore in 2024.

India's Insurance Industry

- It is one of the premium sectors experiencing upward growth.
  - This upward growth of the insurance industry can be attributed to growing incomes and increasing awareness in the industry.
- **India is the fifth largest life insurance market in the world's emerging insurance markets**, growing at a rate of 32-34% each year.
- In recent years, the industry has been experiencing fierce competition among its peers which has led to new and innovative products within the industry.

Data Analysis

- **Current Statistics:**
  - **Gross Written Premiums (GWP):** 11.2 lakh crore in 2024, up from 7.8 lakh crore in FY2020.
    - It is projected to reach 25 lakh crore GWP by 2030, a 123% increase;
    - **Insurance Penetration in India** is currently at 3.7% of GDP, below the **global average of 6.8%.**
    - **Non-life GWP** to triple to 2.8 lakh crore *(nearly 3 times its current value)*, led by SMEs and capital-intensive industries like textiles, pharma, and automotives.
  - **Retail Insurance:** The **retail segment** is expected to account for **₹21 lakh crore** of the total GWP by 2030.
    - More than **90%** of this is projected to be driven by the **life insurance segment**.
    - **Two Key Customer Tiers:**
- **Top-end (UHNI and HNI)**: Households with personal financial assets over 8.5 crore.
- **Mass-market**: A broad base of underserved customers.

Key Challenges

- **Underinsurance & Coverage Gaps:** Many consumers, especially in rural areas, are unaware of insurance benefits.
  - 87% gap in life insurance coverage nationwide;
  - 31% of population lacks health insurance;
  - 50% of vehicles operate without mandatory third-party insurance;
- **Low Penetration:** Insurance penetration remains at 3.7% of GDP, below the global average of 6.8%.
- **Affordability & Trust:** Insurance is often seen as expensive or unreliable; technical jargon deters buyers.
- **Mis-selling & Fraud:** Persistent issues with unsuitable products and deceptive practices undermine trust.
- **Claims Complexity:** Lengthy documentation and poor support discourage policyholders.
  - 50% of affluent customers switched insurers due to poor claims handling.
  - 55% of SMEs faced claim rejections; 75% need help with documentation.
- **Regulatory Bottlenecks:** Overregulation and data limitations hinder product innovation, especially in agriculture.

Policy Support for India's Insurance Sector

- **IRDAI's Vision 2047:** The Insurance Regulatory and Development Authority of India (IRDAI) is driving reforms to bridge protection gaps and simplify access to insurance.
- **Legislative Support:** Key acts include the I**nsurance Act (1938), IRDA Act (1999),** and amendments allowing greater foreign investment and operational flexibility.
- **Bima Vistaar Scheme:** A proposed all-in-one bundled policy covering life, health, accident, and property risks — designed for quick payouts and ease of use.
- **Bima Sugam Platform:** A digital one-stop shop for buying policies and settling claims, with plans to link state death registries for faster life insurance settlements.

Government Interventions and Incentives

- **FDI Liberalization:** The government raised the foreign direct investment cap in insurance from 74% to 100%, encouraging capital inflow and global partnerships.
- **GST Reforms:** Ongoing discussions aim to reduce the 18% GST on health and life insurance, especially for senior citizens and term policies.
- **Social Schemes:** Over 44 crore people were covered under **PM Suraksha Bima** and **PM Jeevan Jyoti Yojana** in FY23.
- **Parametric Insurance:** States like Nagaland are adopting **climate-linked insurance models** for disasters, with payouts triggered by weather thresholds.

Operational and Market Reforms

- **Use-and-File Policy:** Insurers can launch products without prior IRDAI approval, speeding innovation and market responsiveness.
- **Digital Expansion:** IRDAI is promoting online distribution, AI-driven claims processing, and simplified policy language to boost trust and accessibility.
- **Bond Forward Adoption:** Insurers are shifting 3.5 trillion in derivative exposure to bond forwards, improving capital efficiency and portfolio stability.

Road Ahead

- **Simplify Products:** Standardized offerings like **Saral Jeevan Bima and Arogya Sanjeevani** are steps in the right direction.
- **Boost Digital Access:** UPI, ABHA IDs, and online platforms are expanding reach and efficiency.
- **Empower SMEs:** Tailored advisory and sector-specific products can drive adoption.
- **Strengthen Regulation:** IRDAI's reforms aim to balance innovation with consumer protection.
- **Bridging the Gap:** The IBAI-McKinsey report underscores the **need for product customization**, sector-specific solutions, and **advisory support** to bring underserved segments — particularly SMEs — **under the umbrella of insurance.**

Source: IE

NASA-ISRO NISAR SATELLITE

Context

- The Indian Space Research Organisation (ISRO) is set to launch the NISAR satellite from Sriharikota on July 30 onboard a GSLV Mk-II rocket.

NISAR Satellite

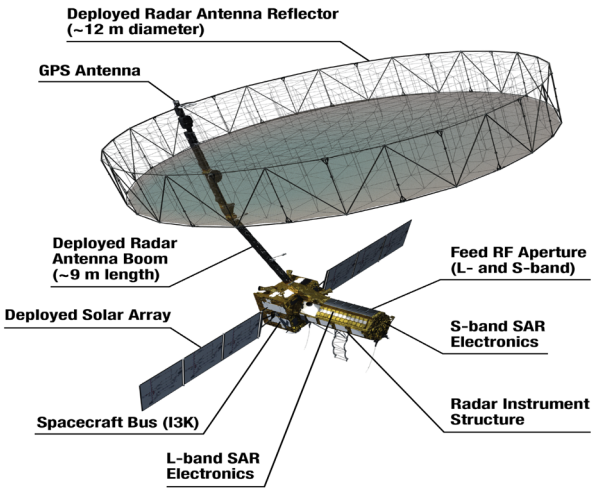
- NISAR is an Earth-observation satellite that stands for **NASA-ISRO Synthetic Aperture Radar.**
- It is Jointly developed by the **National Aeronautics and Space Administration (NASA)** and the **Indian Space Research Organisation** under a partnership agreement signed in **2014.**
- It will be launched into a **polar Sun-synchronous dawn-dusk orbit** at 747 km altitude and an inclination of 98.4º.
- NISAR is the first satellite mission to collect radar data in two microwave bandwidth regions, called the **L-band and the S-band.**
  - **The S-band** payload has been made by the ISRO and the **L-band** payload by the U.S.

Monitoring of Earth Surface

- The NISAR system comprises a **dual frequency, fully polarimetric radar,** with an imaging swath greater than **150 miles (240 km).**
- This design permits complete global coverage every **12-days,** allowing researchers to create **time-series interferometric imagery** and systematically map the changing surface of Earth.
  - It can monitor various aspects in very high resolution.
- After a 90-day commissioning period, the mission will conduct a minimum of **three full years** of science operations with the L-band radar to satisfy NASA's requirements,
  - ISRO requires **five years** of operations with the S-band radar.

How NISAR Works?

- NISAR combines two types of **Synthetic Aperture Radar (SAR)** systems:
  - **The L-band SAR (1.257 GHz)** uses longer-wavelength radio waves that can penetrate thick vegetation and even soil, making it ideal for observing ground deformation beneath forests.
  - **The S-band SAR (3.2 GHz)** uses shorter-wavelength radio waves that are more effective at detecting surface details such as crops, water surfaces, and urban infrastructure.
- The satellite also uses **polarimetric radar technology,** which involves sending and receiving radar signals in both horizontal and vertical polarizations.
  - **Satellite operations and commanding** will be managed by **ISRO**, while **NASA** will provide the **orbit maneuver plan** and radar operations plan.



Objectives of the Mission

- NISAR can **measure tectonic plate movements** accurately. So a lot of geological, agricultural and water-related observations can be obtained from this satellite.
- It can study the **water-stressing, climate change-related issues, agricultural changes through patterns, yield, desertification and continental movements** precisely with respect to annual water cycle movements.
- NISAR's data can help people worldwide **better manage natural resources and hazards**, as well as providing information for scientists to better understand the effects and pace of climate change.

Source: TH

NEWS IN SHORT

EXERCISE BOLD KURUKSHETRA 2025

Context

- The 14th edition of India–Singapore Joint Military Exercise, Bold Kurukshetra 2025, commenced in **Jodhpur, India**.

About the Exercise

- First held in **2005**, Exercise Bold Kurukshetra is a **Table Top Exercise and Computer-Based Wargame** focused on validating **mechanised warfare procedures**.
- It aims to boost **interoperability** and **joint training** under a **United Nations mandate**, reinforcing **India–Singapore defence cooperation**.

Do you know?

- The Singapore India Maritime Bilateral Exercise **(SIMBEX),** which began as **'Exercise Lion King'** in 1994, holds the distinction of being the **longest continuous naval exercise** that the Indian Navy has with any other country.

Source: PIB

TEEJ FESTIVAL

Context

- The Ministry of Tourism, through its Indiatourism Delhi office, organized a vibrant celebration of the **Teej Festival** at 88 Janpath, New Delhi.

About the festival

- Teej, **celebrated primarily by women** across North India, especially in **Rajasthan, Uttar Pradesh, Haryana and Punjab**, marks the advent of the **monsoon season** and honors the reunion of **Goddess Parvati with Lord Shiva**.
- The festival is known for its traditional music, dance, **henna (mehndi), swings**, festive attire, delectable cuisine, prosperity and happiness.

Do you know?

- Teej includes **three distinct festivals**, each with its own significance:
  - **Haryali Teej** is celebrated to commemorate the wedding of Lord Siva and Parvati.
  - **Kajri Teej**, which falls in August, also called **Badi Teej**, usually takes place 15 days after Haryali Teej on the third day of Krishna Paksha (dark fortnight).
  - **Hartalika Teej**, which falls in Bhadon month (August-September), is observed to mark the day when female friends of Parvati abducted her and brought her into the thick, deep forests, to escape her father who was determined to marry her to another Lord.

Source: PIB

NAPNE WATERFALL

Context

- A glass bridge built over the **Napne waterfall** was recently inaugurated by the Maharashtra Minister.

About

- The glass bridge is part of the **Sindhuratna tourism scheme**, aimed at promoting lesser-known destinations across the state.

- **Napne waterfall** originates near Nadhavade village, it is located in the **Konkan region** and is **a perennial waterfall in Maharashtra.**
- It is home to **hornbills, butterflies, and an abundance of endemic flora** offering both aesthetic and ecological appeal.
- The place is also home to some **exotic bird life** attracting birdwatchers from all over.

Source: TH

KYOTO PROTOCOL

Context

- Vijai Sharma, Kyoto Protocol architect & India's ex-chief climate negotiator has passed away.

Kyoto Protocol

- It is an international treaty adopted under the **United Nations Framework Convention on Climate Change (UNFCCC).**
- It was adopted in **1997 and entered into force in 2005.**
- **Objective:** To reduce greenhouse gas (GHG) emissions and combat global warming.
- **Legally Binding Commitments:** For developed countries (Annex I countries) to reduce their GHG emissions.
  - Developing countries, including India and China, had no binding targets.
- **Target Period: First Commitment Period (2008–2012):** Reduce emissions by an average of 5.2% below 1990 levels.
  - **Second Commitment Period (2013–2020):** Known as the Doha Amendment (not ratified by many nations, including the US and Canada).
- The targets for the first commitment period of the Kyoto Protocol cover emissions **of the six main greenhouse gases, namely:** Carbon dioxide (CO2); Methane (CH4); Nitrous oxide (N2O); Hydrofluorocarbons (HFCs); Perfluorocarbons (PFCs); and Sulphur hexafluoride (SF6).
- **An Adaptation Fund** was established to finance concrete adaptation projects and programmes in developing countries that are Parties to the Kyoto Protocol.
- Currently, there are **192 Parties to the Kyoto Protocol.**
- The Kyoto Protocol is largely considered a **landmark legislative achievemen**t as one of the more prominent international treaties in regards to climate change.
  - Though the treaty has been superseded by the Paris Agreement, the Kyoto Protocol remains an important part of environmental and conservation history.

Do you know?

India is a Party to the **United Nations Framework Convention on Climate Change (UNFCCC), and its Kyoto Protocol (KP), and the Paris Agreement (PA).**

- India is also a party to the Convention on Biological Diversity (CBD) and United Nations Convention to Combat Desertification (UNCCD).

Source: IE

VOTING SYSTEM IN CHOLA ADMINISTRATION

In News

Prime Minister Narendra Modi, speaking at a **Chola-era temple,** highlighted the ancient **democratic traditions of the Chola Empire, noting their electoral system predates the Magna Carta.**

- PM Modi referenced **Rajendra Chola 1 's** symbolic act of bringing Ganga water to his capital, reflecting a vision of ethical and ritual statecraft.

Chola Empire's Democratic system

- The **inscriptions of Uttaramerur**, a village in present-day Kanchipuram district, offer some of the world's earliest surviving evidence of a formal electoral system and provide evidence of formal local self-rule.
- The Chola administrative system was built on two local governing bodies — the **Sabha for Brahmin settlements** and the **Ur for non-Brahmin villages —** which had real powers over governance aspects like revenue, irrigation, and justice.
- **Elections** were held through the **Kudavolai or "ballot pot" system,** using palm leaf lots drawn publicly to ensure fairness.

- **Strict eligibility and disqualification criteria** upheld moral governance, while annual audits ensured accountability.
    - Candidates had to own tax-paying land, be between 35 and 70 years old, possess knowledge of Vedic texts or administration, and have no record of crime or domestic abuse.
    - Debt defaulters, alcoholics, and close relatives of sitting members were disqualified.
    - Though progressive for its time, the system excluded women, labourers, and landless people.
- The **Cholas also empowered merchant guilds** and decentralized administration, combining military success with sustainable civic systems.

Source :IE

SOHARAI ART

Context

The indigenous mural tradition of Sohrai Art took centre stage at the second edition of Kala Utsav 2025 – Artists in Residence Programme, held at Rashtrapati Bhavan

- President Droupadi Murmu met with artists of Sohrai, Pattachitra, and Patua art forms

Sohrai Art

- It is a **ritualistic wall-painting tradition** practised by **tribal communities in Jharkhand.**
- It is typically created by women during harvest and festive seasons.
- It deeply rooted in the cultural tapestry of communities like the Kurmi Mahto,
- Santhals, Oraons, and Mundas.
    - Artists use natural earth pigments and bamboo brushes to paint mud walls with vibrant images of animals, plants, and geometric patterns, reflecting agrarian life and spiritual beliefs.

Pattachitra

- It is a traditional cloth-based painting from Odisha which is rooted in religious and folk traditions.
- It is traditionally drawn by the **Mahapatra or maharanas**, the original artiste caste in Odisha.
- It involves a detailed process: preparing a cloth canvas with chalk powder and tamarind glue, sketching directly with brushes, and using natural pigments from minerals and plants.
- **Common themes** include Krishna Leela and Lord Jagannath.
    - The Pattachitra artists also paint their themes on wooden boxes, on bowls, on tussar silk, on outer shells of the coconut, and on wooden doors.

Patua painting

- It is also known as Pattachitra or scroll painting, and stands as a vibrant testament to the rich cultural heritage of West Bengal.
- It is rooted in the traditions of the Patua community
- **Themes** range from Hindu mythology and local folklore to social issues and contemporary events, each narrative brought to life through bold outlines and expressive forms.

Source :PIB

INTERNAL COMPLAINTS COMMITTEES

In News

A student's self-immolation in Balasore, Odisha, has raised concerns about the failure of the Internal Complaints Committee (ICC) to address her sexual harassment complaint.

Evolution of internal complaints committees

- The Supreme Court first addressed workplace sexual harassment in its landmark 1997 judgment in response to the gang-rape of Bhanwari Devi, a social worker in Rajasthan who was attacked for preventing a child marriage.
- This led to the formulation of the **Vishaka Guidelines**, which defined sexual harassment at the workplace and mandated the **formation of Complaints Committees by employers.**
    - These committees were to be headed by a woman, have at least 50% female members, and include an external member to ensure impartiality and prevent internal pressure.

Composition

- Vishaka Guidelines remained non-binding until the public outcry following the 2012 Nirbhaya case prompted legislative action.
- This resulted in the **enactment of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, known as the POSH Act,** which gave legal force to the Vishaka Guidelines.
- The Act made it mandatory for all workplaces with over **10 employees to establish Internal Complaints Committees (ICCs).**

- It also provided for the creation of Local Committees by district authorities to address complaints from women working in smaller or informal sector organizations.

Powers

- The Internal Complaints Committee (ICC) has powers similar to a civil court and must complete inquiries within 90 days.
- It is Headed by a senior woman, it includes members with legal or social work experience, and at least half must be women.
- It can attempt conciliation or conduct an inquiry into sexual harassment complaints filed within three months.
- If the complaint is proven, it recommends action against the accused.
    - The employer must assist the victim if she seeks to file a criminal case. All proceedings and identities involved must remain confidential.

Progress

- implementation of the POSH Act remains poor, with many institutions lacking Internal Complaints Committees (ICCs).
- The Supreme Court flagged serious enforcement lapses in December 2024. Experts highlight gaps in monitoring, lack of accountability across ministries, inadequate training, and breaches of confidentiality, making many ICCs ineffective in practice.

Source : TH

INDIAN RAILWAYS TESTS FIRST HYDROGEN-POWERED COACH

Context

- Indian Railways tested the first hydrogen-powered coach or driving power car at its Integral Coach Factory (ICF) in Chennai.

What is hydrogen?

- Hydrogen is the chemical element with the symbol H and **atomic number 1.**
- Hydrogen is the lightest element and the most abundant chemical substance in the universe, constituting roughly **75%** of all normal matter.
- It is **colorless, odorless, tasteless, non-toxic**, and **highly combustible gas**.

What is the project?

- Indian Railways' Northern Railway zone has undertaken this project which began in **2020-21.** The project has two major components.
    - **First**, the conversion of two conventional 1600 HorsePower (HP) diesel power cars into hydrogen fuel cell-powered traction system, and
    - **Second**, setting up a hydrogen storage and fuelling facility at Jind in Haryana.
- The primary design, validation, and testing is being undertaken by Indian Railways' Research Design & Standards Organisation (RDSO).
- The hydrogen train project was conceptualised for conversion of a **10-coach diesel-electric multiple unit (DEMU)** into a hydrogen-powered multiple unit, with two 1600 HP Power cars.

Importance

- The project marks a historic step in India's mission to build hydrogen-powered trains, a feat achieved by a few nations like **Germany and China.**
- The hydrogen coach is part of Indian Railways broader vision to deploy 35 hydrogen-powered trains under the **"Hydrogen for Heritage" initiative**, specially designed to run on heritage and hill routes across India.

Source: IE

'POWER CORRIDORS' THROUGH GREAT INDIAN BUSTARD HABITATS

Context

- Recently, a Supreme Court-appointed **expert committee** has proposed the creation of designated **'power corridors'** through the habitats of **Great Indian Bustard (GIB)** in **Rajasthan and Gujarat.**

Background

- In 2024, the Supreme Court of India pointed out that **its 2021 blanket ban on overhead lines** marked a shift toward coexistence between conservation and renewable energy goals.

What the Expert Panel Proposes?

- **Designated Power Corridors:**
    - 5 km wide in Rajasthan;
    - 1–2 km wide across two zones in Gujarat
- **Revised Priority Areas:**
    - Rajasthan: Expanded to 14,013 sq km
    - Gujarat: Increased to 740 sq km
- **Voltage-Based Mitigation:**
    - Immediate undergrounding of 33 kV lines in key habitats;

  - 220 kV and above lines to be assessed individually;
  - 11 kV and lower lines permitted only within corridors;
- **No New Projects in Priority Zones:** Wind turbines, solar plants over 2 MW, and new overhead lines are barred from priority areas.

Great Indian Bustard

- **Habitat:** Arid and semi-arid grasslands in **Rajasthan, Gujarat, Maharashtra, Karnataka, and Andhra Pradesh.**
- **Physical Traits:** Stands nearly 1 meter tall; males weigh up to 15 kg; known for a black crown and booming mating calls.
  - Ground-nesting, slow breeder, omnivorous — feeds on insects, seeds, and small reptiles.
- **Status:** Critically Endangered (IUCN Red List)

Conservation Efforts

- **Captive Breeding:** 29 bustards housed in Rajasthan's breeding centers; first natural breeding recorded in 2023
- **Project GIB:** Rajasthan's flagship program to fence breeding grounds and restore habitats.
- **'Jump Start' Breeding:** Using eggs from Rajasthan's breeding centers to be incubated by wild females in Gujarat.
- **Tagging and Monitoring:** Remaining GIBs in Gujarat will be tracked to better understand movement and habitat use.

Source: IE

WORLD'S FASTEST MICROSCOPE CAPTURES MOLECULAR MOTION IN REAL TIME

Context

- An imaging technique developed by scientists at the California Institute of Technology has resulted in the **world's fastest single-shot microscope,** capable of visualizing the real-time motion of molecules at the angstrom scale.

Do you know ?

Conventional microscopes are invasive, have limited fields of view, and cannot distinguish molecules as small as tens of angstroms.

- They also rely on slow, point-by-point scanning methods.

About the microscope

- It is a non-invasive, single-shot microscope that uses ultrafast laser pulses and a digital micromirror device (DMD) to observe how molecules interact with light, enabling them to estimate size based on **Brownian motion**.
- It is capable of filming at hundreds of billions of frames per second, offers wide-field imaging and avoids damage from sample preparation.
- It is Tested with fluorescein-dextran and even in turbulent gas environments.
- It accurately measures molecule sizes and opens up new possibilities for biomedical research, drug development, disease detection, and nanotechnology.

What is Brownian Motion?

- Brownian motion is the **random movement of tiny particles in a liquid or gas.**
  - It was explained by **Albert Einstein in 1905.**
- This motion happens because molecules in the fluid keep hitting the particles, pushing them around.

Source: TH

DEEP-BRAIN STIMULATION

Context

- Over 1.6 lakh people worldwide have received deep-brain stimulation (DBS), a cutting-edge neurotechnology increasingly used in treating complex brain disorders.

About

- **Deep-brain stimulation (DBS)** is a medical technique where doctors implant **electrodes** deep inside specific areas of the brain to treat certain disorders.
- These electrodes are connected by wires to a small device, similar to a heart's pacemaker, which is usually placed under the skin in the upper chest.
- The device sends controlled, mild electrical impulses to targeted brain regions, helping adjust abnormal brain activity or chemical imbalances.

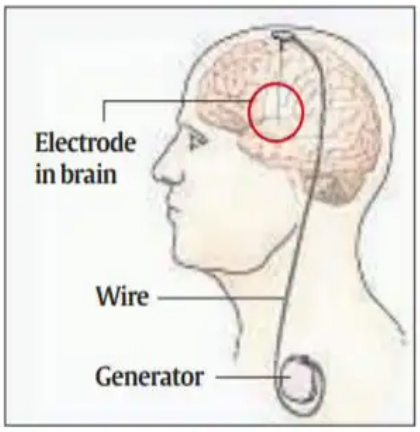
How Does It Work?

- Technically, DBS works by modifying how groups of neurons talk to each other. Many of these disorders involve faulty electrical signals in the brain.
- Delivering electrical pulses through DBS can interrupt these erratic signals, helping reduce symptoms such as tremors or muscle stiffness.

- The amount and pattern of stimulation can be precisely adjusted by doctors or, to some extent, by patients themselves using external programmers.
- One advantage of DBS is that, unlike brain surgery that destroys tissue, **its effects are reversible**: if you turn off the device, the stimulation stops.

Applications

- DBS is primarily used to treat movement disorders such as: **Parkinson's Disease, Essential Tremor and Dystonia**.
- It has also been approved for some psychiatric conditions like obsessive-compulsive disorder, and is being studied for severe depression and **epilepsy**.



Source: TH