

DAILY CURRENT AFFAIRS (DCA)

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INDIA-OMAN BILATERAL RELATIONS

Context

- Recently, the External Affairs Minister of India met his Omani counterpart in Muscat and held discussions on various facets of the cooperation between the two countries.

About India-Oman Relations

- The **Sultanate of Oman** is a **strategic partner of India** and an **important interlocutor** at the Gulf Cooperation Council (GCC), Arab League, and Indian Ocean Rim Association (IORA) fora.
- India and Oman have a historic, multi-dimensional and strategically important relationship.
- Oman, strategically **located at the mouth of the Persian Gulf** overlooking the **Strait of Hormuz**, is a critical maritime partner for India's energy security, trade and Indo-Pacific vision.
- Significance for India:**
 - Gateway to West Asia and the Gulf;
 - Strategic position near the Strait of Hormuz;
 - A reliable power supplier;
 - Resilient defence and maritime co-operation;
 - Key partner in **India's West Asia Policy, SAGAR** (Security and Growth for All in the Region) and **MAHASAGAR** maritime vision;

Historical Development

- Ancient Period:** Thriving sea trade of spices, textiles, dates, copper, frankincense.
- Colonial Era:** Traders from Gujarat and Kerala in India set up thriving business communities in Muscat.
- Post Independence:** Diplomatic relations were established in 1955 and consolidated after Sultan Qaboos assumed power in 1970.
- Strategic Partnership (2008):** Enhanced cooperation on defence, maritime security, energy, trade and investment.
- Contemporary Phase:** Relations diversified to technology, renewable energy, food security, digital economy, connectivity

India-Oman Relations: Key Dimensions

- Political Relations:** Regular visits at high level. Institutional dialogue through Joint Commission Meeting (JCM), Foreign Office Consultations and strategic consultations.
 - Oman continues to be one of India's most reliable partners in the Gulf.

- Defence and Security Cooperation:** Defence Cooperation is one of the strongest pillars of bilateral relations.
 - Defence Exercises:** **AL NAJAH** Exercise (Army), **Eastern Bridge** Exercise (Air Force) and **Naseem Al Bahr** Exercise (Navy)
 - Security Cooperations:** Maritime Security, Naval Cooperation, Hydrography, Counter Terrorism, Anti-Piracy Operations, White Shipping Information Sharing and Capacity Building
 - Strategic Significance:** Oman gives India operational access to the Port of Duqm, thereby extending India's naval footprint in the western Indian Ocean.
 - Duqm Port provides logistics, ship maintenance and strategic access to Africa and West Asia.
- Economic and Trade Relations:**
 - Bilateral Trade:** US\$ 8.947 billion (FY 2023-24) and 10.613 US\$ billion (FY 2024-25)
 - Main Indian Exports:** Engineering goods, food products, rice, pharmaceuticals, machinery, textiles, chemicals.
 - Key Imports:** Crude oil, LNG, fertilisers, petrochemicals, minerals.
 - Investment:**
 - Indian investments** are in manufacturing, steel, cement, health care, education, hospitality, renewable energy and Information Technology.
 - Omani investments** in India are increasing with sovereign wealth funds and private enterprises.
- Energy Cooperation:** Key areas are long term crude oil supplies, LNG imports, petrochemicals, green hydrogen, renewable energy, clean fuels and strategic petroleum cooperation.
 - The two countries are looking at collaborating on green hydrogen, green ammonia and energy transition technologies.
- Diaspora Relation:** India has the largest expatriate community in Oman with more than 6 lakh Indians living and working there .
 - Indians contribute significantly in healthcare, education, engineering, banking, construction, services and Information Technology.
- Cultural Relations:** India-Oman have vibrant civilisational links and celebrate Indian festivals and cultural exchanges.

- ♦ Cooperation in education and traditional medicine and Indian schools operate throughout Oman.

Issues in India–Oman Relations

- **Economic:** Low levels of bilateral trade, below potential, and limited diversification beyond hydrocarbons.
- **Geopolitical:** Regional instability in West Asia; Iran–Gulf tensions; and maritime security challenges in the Arabian Sea and Gulf region.
- **Competition:** Growing engagement of China, United States and European states in Oman's infrastructure and strategic sectors.
- **Labour Issues:** Omanisation policy could reduce opportunities for foreign workers; and need for continuous skill upgradation of the Indian workforce.
- **Connectivity:** Limited direct integration of logistics; Scope to improve connectivity for shipping and air cargo.
- **Investment Bottlenecks:** Regulatory procedures and need for more private-sector participation.

Way Forward: Deepening India-Oman Relations

- **Political:** Institutionalise annual strategic dialogue; and increase parliamentary and state level exchanges
- **Defence:** Enhance naval interoperability; boost joint military exercises; reinforce Maritime Domain Awareness; and operationalise greater use of Duqm Port.
- **Trade:** Expand trade basket, facilitate MSME collaboration, and enhance logistics connectivity.
- **Energy:** Transition from hydrocarbons and Develop partnerships in green hydrogen, green ammonia, renewable energy, critical minerals and carbon capture technologies.
- **Investment:** Promote joint ventures, encourage sovereign wealth funds' participation and build industrial corridors and logistics hubs.
- **Technologies:** AI cooperation, digital public infrastructure, cyber security, FinTech, semiconductor collaboration and start-up ecosystem.
- **Blue Economy:** Fisheries, marine biotechnology, port-led development and ocean governance.
- **People-to-People:** Safeguard welfare of diaspora; increase educational exchanges; and promote tourism and cultural diplomacy.

Source: News On AIR

INDIA AND THE UNITED KINGDOM COMPREHENSIVE ECONOMIC AND TRADE AGREEMENT (CETA)

Context

- India and the United Kingdom announced that the Comprehensive Economic and Trade Agreement (CETA) will enter into force on 15th July 2026.

Background

- The India–UK FTA negotiations were formally launched in **2022**, as part of efforts to deepen economic cooperation and boost bilateral trade.
- Following **fourteen intensive rounds of negotiations**, CETA was concluded in May 2025 and officially signed on 24 July 2025.
- To complete the framework, the **companion Double Contribution Convention (DCC)** was subsequently signed on 10 February 2026.

Key Highlights and Benefits of the Agreement

A win-win deal: Who gets what

India gains	UK gains
- Zero-duty access for 99% of exports to the UK, including 95% of agricultural products - Duty-free entry for gems & jewellery, seafood, generic drugs, medical devices, electronics, leather, footwear, textiles, rubber, and chemicals - Major boost for food processing: Tariffs up to 70% eliminated 75,000 Indian workers exempt from UK social security payments for 3 years - Indian professionals can work in 35 UK sectors for 24 months without a UK office 1,800+ chefs, yoga experts, and musicians can work annually in the UK	- India to cut or eliminate tariffs on 90% of UK goods, covering 92% of current UK exports; 64% tariff-free from day one - Average tariff drop from 15% to 3% on UK goods - Steep tariff cuts: Aerospace (11% to 0%), automotive (10% to 10% under quota), electrical machinery (22% to 0% or halved) - Whisky tariff to fall from 150% to 75% immediately, then to 40% over 10 years "Legally guaranteed access" to bid for 40,000 Indian government contracts worth £38 billion annually

What it doesn't: The UK retains protections in sugar, milled rice, pork, chicken, and eggs

What it doesn't: No tariff cuts in sensitive Indian sectors like dairy, apples, oats, and edible oils
No access to India's legal services

For India:

- ♦ **Duty-free access to the UK market for 99% of Indian products:** This is a huge win for Indian exports, especially in labour-intensive sectors like textiles, footwear, gems and jewellery, and engineering goods, which previously faced duties of 4% to 16%.
- ♦ **Easier entry for Indian professionals:** The agreement provides assured temporary access to the UK market for Indian professionals like chefs, yoga instructors, and IT specialists.
- ♦ **Boost for Manufacturing:** Sectors like electronics, pharmaceuticals, chemicals, food processing, and plastics are expected to see a boost in exports.
- ♦ **Boost for Agriculture and Fisheries:** Indian farmers and the fisheries sector will benefit from duty-free access for many agricultural and marine products, allowing them to compete better in the UK market.

- **For the UK:**
 - ♦ **Reduced tariffs on nearly 90% of UK goods entering India:** This will make British products more affordable in India.
 - ♦ **Big cuts on duties for British whisky and gin:** Tariffs on popular British products like whisky and gin will drop significantly, from 150% to 75% immediately and then gradually to 40% within ten years. This gives UK distillers a significant advantage in the large Indian market.
 - ♦ **Lower tariffs on certain UK-made automobiles:** Car duties will be reduced, improving the competitiveness of British car manufacturers in India.
 - ♦ **Access to Indian federal government procurement tenders:** UK firms can bid for government contracts in India worth over a certain amount, opening up a large market.
 - ♦ **Benefits for financial and professional services:** The agreement includes commitments that benefit UK companies in IT, financial services, and professional services like consulting and engineering.

Overall Impact

- The deal is expected to **significantly increase bilateral trade** with projections aiming to **double it to around \$120 billion by 2030**.
- **Zero or reduced tariff for 99 percent** of Indian exports to the UK, which is a **stronger position for India vs. other leading export markets** such as Bangladesh, Vietnam, and China.
- **Export boost in leading manufacturing clusters** in Tiruppur, Surat, Ludhiana, Pune, Chennai, Gujarat, West Bengal, Assam, etc.
- It's seen as a **major economic win for both countries**, creating jobs, boosting wages, and driving growth.
- The FTA is also accompanied by a **UK-India Vision 2035 roadmap**, aiming to deepen ties in areas like defence, climate solutions, and education.

UK-India Vision 2035 Roadmap

- **Increased ambition:** Since elevating the relationship to a Comprehensive Strategic Partnership, India and the UK have catalysed significant partnerships and growth across all sectors. The new vision builds on this momentum, setting ambitious goals to deepen and diversify bilateral cooperation.

- **Strategic Vision:** The India-UK Vision 2035 sets **clear strategic goals and milestones**, tracking a path for sustained future collaboration and innovation.

Key Economic Gains

- **Agreement on Social Security** also referred to as the **Double Contribution Convention (DCC)**, entering into force alongside the Agreement, exempts Indian workers and employers from **making dual social security contributions** in the United Kingdom during temporary assignments.
 - ♦ The period of exemption has been increased from **3 years to 5 years**.
- **Interests of Steel Exporters Protected:** Following constructive deliberations regarding the UK's upcoming steel measures effective from July 1, 2026, both sides mutually agreed to protect commercial interests, minimize market disruptions, and ensure an overall balanced and stable trading environment for exporters.
 - ♦ **85%** of India's exports are out of the Steel measures.
 - ♦ On the lines under the Steel measures **India's interest has been protected through a mix of CSQ, residual quota and access under Authorised Use Scheme (AUS)**.

Challenges of the Agreement

- **Compliance with Global Standards:** Indian exporters may face difficulties in meeting stringent **UK quality, safety, sanitary and technical standards**, particularly in sectors such as food processing, pharmaceuticals, textiles, and engineering goods.
- **Pressure on Domestic Industries:** Increased market access for UK products, particularly in sectors like automobiles, premium goods, and machinery, may intensify competition for Indian manufacturers.
- **Persistence of Non-Tariff Barriers:** Despite tariff reductions, issues such as regulatory differences, certification requirements, technical barriers to trade, and sustainability norms may continue to restrict export growth.

Way Ahead

- **Improve productivity, technology adoption, and quality standards** to enable Indian firms to compete effectively in the UK market.
- **Provide training, digital platforms, and institutional support** to help MSMEs understand Rules of Origin, certification processes, and FTA benefits.

- **Expand testing laboratories, certification facilities**, and regulatory frameworks to align Indian products with international standards.
- **Encourage diversification of exports**, promote high-value manufacturing, and integrate Indian industries into global value chains to fully leverage CETA benefits.

Source: PIB

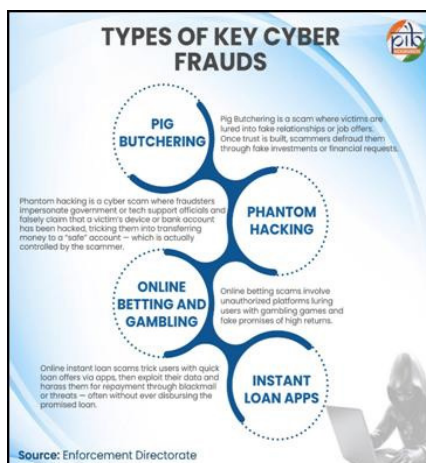
CRACKDOWN ON CYBERCRIME

Context

- The Ministry of Home Affairs (MHA) has informed the Prime Minister about measures taken to combat rising cyber fraud in the country.

What is Cybercrime?

- Cyber crime is the use of digital technologies such as computers and the internet to commit criminal activities.
- These cases are **financial fraud** (credit card fraud, online transaction fraud), **crime against women and children** with regard to sexually explicit material, and **deep fake content** etc.
- According to the **Seventh Schedule** of the Indian Constitution, cybercrimes are within the **purview of State subjects**.
- **Cyber Crime Scenario in India:**
 - ♦ There were **98 lakh cybercrime complaints** registered between 2019 and 2026.
 - ♦ **Only 2.3 lakh FIRs** were registered, resulting in an FIR conversion rate of **2.36%**.
 - ♦ **Reported cybercrime losses** (2021– 2026): ₹64,447 crore.



Reasons for increase in Cybercrime

- **Rapid Digitalization:** With a growing number of individuals and businesses relying on the

Internet and digital technologies there are more opportunities for cybercriminals to exploit vulnerabilities.

- **Large Internet User Base:** India has **95 crore** Internet users. With a large population using the internet, there are more potential targets for cybercriminals, making it a lucrative market for cyberattacks.
- **Inadequate Cybersecurity Infrastructure:** In India the cybersecurity infrastructure is still developing. Many organizations, especially smaller businesses, may not have robust cybersecurity measures in place, making them easy targets for cybercriminals.
- **Insider Threats:** Insider threats, where employees or individuals with access to sensitive information misuse it for malicious purposes, are a significant concern in India, particularly in the corporate sector.
- **Payment Systems Vulnerability:** With the rise of digital payments and online transactions, there is an increased risk of financial crimes such as phishing, credit card fraud, and online scams.
 - ♦ In 2024, India saw UPI (Unified Payments Interface) transactions worth about **Rs 20,64,000 crore** which is **46 percent** of the global digital transactions.
- **Low digital literacy:** Lower awareness among the general public and digital gaps amongst nations create an unsustainable environment in the cyber domain.

Effects of Cybercrime

- **Financial Losses:** Cybercrime leads to substantial financial losses for individuals and organizations through theft of funds, fraudulent activities, or the cost of restoring compromised systems.
- **National Security Concerns:** Cyberattacks with a geopolitical motive pose national security threats. The attacks target government agencies, critical infrastructure, or defense systems, compromising a nation's security.
- **Data Breaches:** The unauthorized access and theft of sensitive data compromises the confidentiality of personal and financial information, causing reputational damage and potential legal consequences.
- **Disruption of Services:** Cyberattacks disrupt essential services and critical infrastructure, impacting businesses, governments, and individuals.

- **Loss of Intellectual Property:** Businesses suffer from the theft of intellectual property, trade secrets, and proprietary information which undermine competitiveness and innovation, leading to economic repercussions.

Government Steps for Cybersecurity

- **Information Technology Act, 2000:** Section 43, 66, 70, and 74 of the IT Act, 2000 deal with hacking and cyber crimes.
- **Indian Computer Emergency Response Team (CERT-In)** issues alerts and advisories regarding latest cyber threats/vulnerabilities and countermeasures to protect computers and networks on a regular basis.
- **National Cyber Coordination Centre (NCCC)** has been set up to generate necessary situational awareness of existing and potential cyber security threats and enable timely information sharing for proactive, preventive and protective actions by individual entities.
- **Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre)** has been launched for detection of malicious programs and provides free tools to remove the same.
- **Chakshu Facility:** It is a newly introduced feature on the **Sanchar Saathi portal** that encourages citizens to proactively report suspected fraudulent communications received via call, SMS, or WhatsApp.
- **Indian Cyber Crime Coordination Centre (I4C):** It was established in **2018** under the Central Sector Scheme within the Cyber and Information Security Division of the **Ministry of Home Affairs**.
 - ♦ It provides a framework and eco-system for Law Enforcement Agencies (LEAs) to deal with Cybercrime in a coordinated and comprehensive manner.
- **E-Zero FIR Initiative:** Launched by the **Ministry of Home Affairs (MHA)** to enable swift registration and investigation of cyber financial crime cases.
 - ♦ The system automatically converts cyber financial crimes filed at NCRP or 1930 to FIRs, initially above the threshold limit of **₹10 lakh**.

International Measures

- **Budapest Convention:** It is the 1st international treaty to address cybercrime. India is not a signatory to the treaty.
- **Internet Corporation for Assigned Names and Numbers (ICANN):** It is a US-based not-for-profit organization for coordinating & maintenance of several databases.

- **Internet Governance Forum:** It is the **United Nations forum** for multi-stakeholder policy dialogue on Internet governance issues.

Way Ahead

- India is at the crossroads of digital transformation and cyber threats, where it has become both an iron pillar of progress and a magnet for cyber fraudsters.
- Realising the vision of Digital India, the government's multi-layered cyber response team is facilitating fraud prevention and disrupting thousands of scam operations.
- Advanced forensics, big data analytics, and indigenous tools have bolstered national cyber resilience.

Source: IE

WORLD INTANGIBLE INVESTMENT REPORT 2026

In News

The World Intangible Investment Report 2026, launched by World Intellectual Property Organization and Luiss Business School, reaffirms India's emergence as a global innovation powerhouse.

Intangible assets

- They are non-tangible assets like organisational know-how, research and development (R&D), software, databases, brands, design and intellectual property (IP).
- Unlike physical assets like factories and machinery, their value is in knowledge and innovation.
 - ♦ An electric car's value, for example, is mostly in its battery technology, software and brand, whereas AI models are almost entirely dependent on research, data and software.

World Intangible Investment Highlights (WIIH) 2026

- It is a joint publication of the World Intellectual Property Organization (WIPO) and Luiss Business School (LBS).
- It covers 29 economies accounting for around 57% of global GDP in nominal terms and about 45% on a purchasing power parity basis.
- The largest investors in absolute terms are the United States, Japan and Germany, whereas the most intensive investors are Sweden, the US and France.

- ♦ India, Japan and the Philippines saw the strongest growth.
- The 2026 edition also underscores the strategic importance of brands and looks at how the relationship between artificial intelligence (AI) and intangible investments is changing.

Major Findings

- **Intangible Investment Surpassing Tangible Investment :** Intangible investment continues to outstrip tangible investment (e.g. buildings and machinery) by a wide margin.
 - ♦ Intangible investment in 29 economies exceeds USD 10 trillion in 2025.
 - From 2008 to 2025, intangible investment grew at an annual rate of 3.5%, more than three times faster than tangible investment (0.98%).
 - ♦ **Country Patterns :**
 - **In Japan, Canada, Germany:** Investment in intangibles continued to increase while investment in tangibles stagnated or declined, mirroring a structural shift toward knowledge assets.
 - **In the US, France, UK:** Intangible investment grew consistently faster than tangible investment, although both grew.
 - **Both India and the Philippines** recorded fast growth in both tangible and intangible investments, with infrastructure investment still growing faster.
 - Brazil was the exception where intangible investment increased and tangible investment decreased.
- **Fastest-growing category :** Globally, software and databases were the fastest-growing category of intangible assets during 2013-23, up 7.3%, followed by organizational capital at 4.9% and brands at 4.4%.
 - ♦ Artificial intelligence (AI) is expected to reinforce the trend by increasing investment in software, data, organisational capital and research.
- **Share in GDP :** Since 1995, the share of intangible investment in GDP has increased in all economies, and at the aggregate level, it now exceeds that of tangible investment (12.8% vs. 11.8% of GDP in 2025).
 - ♦ Sweden is the leader in the most intangible-intensive economy, followed by the United States and France.

- ♦ India's formal-sector intangible investment was 10% of GDP (2023) and on a steady climb, though tangible investment (19.3% of GDP) is still higher as infrastructure development continues.

India Specific Data

- India emerged as the world's fastest-growing major economy in investment in knowledge-based assets in 2022-23, with spending on software, research, brands and other intangible assets rising 7.9%
- India recorded the highest year-on-year growth in intangible investment among the 15 largest economies covered, ahead of Japan (4.8%), the Philippines (4.6%) and the US (4.4%) during 2022-23.
- India remains a tangible asset-intensive economy, but its investment in knowledge-based assets is rising rapidly alongside traditional capital expenditure.
- India's gross capital formation rose from 32% of GDP in 2021 to 33% in 2023
- In absolute terms, India's intangible investment was at \$78 billion in 2023, exceeding that of several European economies, including Denmark, the Czech Republic and Finland, the report said.
- India's investment profile is dominated by software and databases, which accounted for nearly 45% of the country's total intangible investment in 2023, the highest share among all economies covered in the report.
- Organizational capital comprised 21.8%, R&D 12.7%, brands 9.3%, and design 11% of India's total intangible investment.
- India's software and databases have expanded at a compound annual growth rate of 8.2% between 2013 and 2023
- India also ranked among the faster-growing economies in investment in brands. Brand investment expanded at a CAGR of 7.2% between 2013 and 2023, placing India behind Luxembourg, Lithuania and Denmark but ahead of several advanced economies.

Importance of Intangible Investment

- **Driving Productivity & Innovation :** Intangibles like custom software, artificial intelligence algorithms, and organisational workflows are scalable in ways that physical machinery are not.
 - ♦ They allow firms to produce more output with the same physical infrastructure.

- **Moving Up the Value Chain:** To go beyond being an outsourcing hub for low-cost labour, India is investing in intellectual property (IP), R&D and original design to develop high-value products and proprietary technologies.
- **Powering the Digital & AI Economy:** Data, databases and digital platforms are completely intangible. They are crucial to India's booming fintech, e-commerce, SaaS sectors.
- **Building Brand Equity:** In today's AI-generated noise-filled global marketplace, strong corporate brands and trademarks build consumer trust and ensure long-term customer loyalty.
- **Intangibles Powering Job Creation:** High-skilled, high-paying jobs in tech, design and research

Challenges

- **Undercounting & Measurement Errors.** Older accounting frameworks (e.g., national statistics and balance sheets) measure investments in R&D or employee upskilling as "expenses" rather than "capital assets."
 - ♦ That obscures the real economic value being created.
- **Concentrated Asset Distribution:** The intangible boom in India is heavily skewed towards software and IT services.
- **Low Gross Domestic Expenditure on R&D :** India's total spending on R&D is low relative to GDP as compared with developed economies like the US
- **Difficulty of Valuation and Financing:** In the past, banks and other financial institutions have demanded physical collateral - land, machinery and other assets - before they will lend money.
 - ♦ In India, debt financing against intangible assets such as patents or software code remains a very complex and risky exercise.
- **Cyber & IP Vulnerabilities:** Non-physical assets are extremely vulnerable to cyber-attacks, data breaches and theft of intellectual property, requiring robust cyber-defences that many MSMEs lack.

Steps Taken by India

- **Digital Public Infrastructure (DPI):** The remarkable success of India Stack (UPI, Aadhaar, ONDC, Account Aggregator) has created a vast,

open-source, intangible foundation for businesses to develop software and databases.

- **National Research Foundation (Anusandhan NRF):** To channelise structured funding to academic and private research, strengthening India's R&D ecosystem.
- **Intellectual Property Reforms:** The Controller General of Patents, Designs and Trademarks (CGPDTM) has been modernised with a drastic reduction in patent processing times.
- **Startup India & PLI Schemes:** The Production Linked Incentive (PLI) scheme, with its emphasis on manufacturing, demands technological localisation and design, compelling companies to make large investments in domestic organisational know-how and IP.
- **National Strategy for Artificial Intelligence-** Focus on building indigenous AI datasets, compute capacity and algorithmic research to capture the AI boom.

What more needs to be done?

- **Revise Accounting & Statistical Standards:** Align national accounting standards to modern standards to explicitly recognise intangibles as Gross Fixed Capital Formation (GFCF).
 - ♦ This will provide policymakers a realistic picture of the drivers of the economy.
- **Encourage IP-backed Financing:** RBI and SEBI to set up regulatory mechanisms and standard valuation guidelines to allow financial institutions to take patents, copyrights and software safely as collateral for business loans.
 - ♦ Expand the scope of investment to diversify the intangible portfolios beyond software services to deep-tech R&D, biotech, creative designs and building global brands
- **Enhance cybersecurity legislation:** The DPDP (Digital Personal Data Protection) framework is now implemented.
 - ♦ The next step is to enhance the corporate data governance and cybersecurity infrastructure to safeguard proprietary digital resources.
- **Industry-Academia Collaboration:** Close the gap between research at the university and commercial usage, making sure academic R&D easily translates into marketable intellectual property

Source :Air

CENTRE DEFENDS E20 ROLLOUT

Context

- The Petroleum and Natural Gas Ministry issued clarification **defending the Ethanol Blended Petrol (EBP) Programme**.

Ethanol

- It can be produced from **sugarcane, maize, wheat, etc** which are having **high starch content**.
- In India, ethanol is mainly produced from **sugarcane molasses by fermentation process**.
 - It can be **mixed with gasoline** to form different blends.
- Application:** It is widely used not only as an alternative fuel source but also in various industries as a chemical solvent and in the synthesis of organic compounds.
 - Ethanol also has medical applications as an antiseptic and disinfectant, adding to its versatile uses.

Ethanol Blending

- Ethanol blending refers to the **practice of mixing ethanol with gasoline** to create a fuel mixture that can be used in internal combustion engines.
- There are a few common blends:**
 - E10:** This is a mixture of 10% ethanol and 90% gasoline. It is the most common blend and is used widely in many countries.
 - E15:** This blend contains 15% ethanol and 85% gasoline.
 - E85:** This is a high-ethanol blend, consisting of 85% ethanol and 15% gasoline. It's used in flex-fuel vehicles designed to run on higher ethanol content.

Global Status of Ethanol Blending

- Ethanol blending is now a globally accepted practice. Several major economies have built ethanol firmly into their fuel strategy.
 - United States:** E10 is the standard ethanol blended fuel nationwide. E15 is expanding rapidly, backed by the US government.
 - Millions of vehicles are already flex fuel capable. These can run on blends as high as E85.
 - Brazil:** Brazil remains the global leader in ethanol use. It currently mandates E27 as its standard petrol blend. This is being raised further to around 35 percent.

- Over 80 percent of new cars sold are flex fuel vehicles. These run on E27, E30, or pure hydrous ethanol.
- Japan:** Japan has brought ethanol into its fuel mix too. This was done through a phased E10 rollout.

Benefits of Ethanol Blending

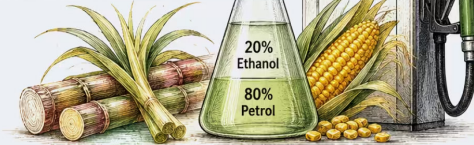
- Environmental Benefits:** Cleaner combustion results in lower emissions of greenhouse gases and harmful pollutants, including carbon monoxide, particulate matter, and hydrocarbons.

ETHANOL BLENDED PETROL: INDIA'S BIOFUEL PUSH

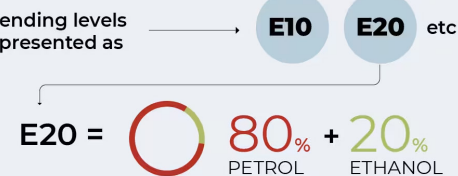
TOI

What is Ethanol-Blended Petrol?

Petrol mixed with ethanol, a biofuel made from sugarcane, maize and other agricultural feedstocks



Blending levels represented as



What is the Ethanol Blended Petrol (EBP) Programme?

- Government initiative launched to increase ethanol mixing in petrol
- Aims to reduce dependence on imported crude oil
- Supports cleaner fuel adoption and energy security



- Energy Security & Economic Gains:** Curtails crude oil imports, saves foreign exchange, diversifies the energy mix and reduces vulnerability to fluctuations in the international oil prices.
- Farmer Welfare:** Increases the demand of crops and agriculture residues which provides an additional and stable income source to the farmers apart from creating rural employment.
- Improved Engine Performance:** The higher octane rating helps in efficiency and avoids knocking ensuring overall better performance of the vehicle.

India's Approach

- The Ethanol Blended Petrol (EBP) programme was launched in **2003**.
 - ♦ The programme sought to promote the use of alternative and environment friendly fuels and to reduce import dependency for energy requirements.
- **Objectives**
 - ♦ **Reduce Import Dependence:** India aims to decrease its reliance on imported crude oil, thereby improving energy security.
 - ♦ **Environmental Benefits:** Ethanol is a cleaner-burning fuel compared to gasoline, which helps in reducing air pollution and greenhouse gas emissions.
 - ♦ **Support for Farmers:** The program supports the agricultural sector by providing a market for ethanol, which is often derived from sugarcane, corn, or other crops.
- **Key Components**
 - ♦ **Blending Targets:** India has set specific targets for ethanol blending. For instance, the National Policy on Biofuels (2018) outlined a target of 20% ethanol blending in petrol by 2025-26.
 - ♦ **Phased Implementation:** The blending targets are being rolled out in phases, gradually moving towards higher blends like E20.
 - ♦ **Infrastructure Development:** The government has been investing in the infrastructure necessary for ethanol production, storage, and distribution, including establishing more ethanol production facilities and blending units.

Major Achievements of EBP

- Ethanol blending has increased from less than 1.5 percent in 2013-14 to 20 percent in 2025-26.
- India achieved the 20 percent blending target five years ahead of schedule.
- Ethanol procurement rose from about 38 crore litres in Ethanol Supply Year (ESY) 2013-14 to over 1,200 crore litres (projected) in 2025-26.
- Production capacity expanded nearly fivefold from 421 crore litres in 2014 to about 2,000 crore litres in 2026.
- This expansion has reduced crude oil imports and saved valuable foreign exchange. It has also lowered greenhouse gas emissions and

strengthened farmers' incomes through new market opportunities.

Challenges and Concerns

- **Infrastructure:** Developing the necessary infrastructure for large-scale ethanol production and blending can be complex and costly.
- **Feedstock Availability:** Ensuring a steady and adequate supply of raw materials for ethanol production, such as sugarcane, can be challenging, especially in the face of changing agricultural conditions and market fluctuations.
- **Consumer Acceptance:** Educating consumers and ensuring that vehicles can run efficiently on higher ethanol blends are also important for the program's success.
- **Concerns Regarding Higher Ethanol Blending:** Higher ethanol blending raises concerns about vehicle compatibility, as it can damage engines and fuel system components in older vehicles, reduce fuel mileage and cause cold-start issues.
 - ♦ It might also raise maintenance costs for existing vehicle owners. The absence of fuel choices restricts consumer choice.
 - ♦ For automobile manufacturers, moving from E20 to E25 would require engine recalibration, fresh certification, and additional engineering costs, potentially increasing vehicle prices.

Government's Clarification on Concerns

- The Petroleum Ministry said ethanol blending has been progressively implemented over two decades from 8.1% (2020-21) to 20% (2025-26).
 - ♦ It said it was difficult and costly to provide a choice of fuel grades (E0, E10, E20) across the country on a logistical basis.
- The Ministry also rejected the claims of engine damage saying it had been extensively tested and admitted to a 3-5 percent reduction in fuel economy but pointed to benefits like increased octane, reduced emissions and enhanced energy security.
- It also said E20 is more expensive to produce than pure petrol, and the program is aimed at cutting crude oil imports and protecting against global price swings, not lowering fuel prices.

Way Ahead

- India should adopt a **gradual and evidence-based transition** towards higher ethanol blends.
- **Consumer interests and vehicle compatibility** concerns should be adequately addressed.

- **Wider adoption of flex-fuel vehicles** should be encouraged through incentives and technological support.
- **Alternative feedstocks** such as agricultural residues and second-generation biofuels should be promoted.

Source: DD

CENTRE AMENDS DRUGS RULES TO REGULATE HIGH-ALCOHOL MEDICINAL FORMULATIONS

Context

- The Central Government has amended the **Drugs Rules, 1945**, to strengthen the **regulation of High Alcohol-Containing Drug Formulations**.

Regulation of Drugs in India

- The **Central Drugs Standard Control Organization (CDSCO)** headed by the **Drugs Controller General (India)** is the Central Authority for regulating the quality of drugs marketed in the country under the **Drugs and Cosmetics Act, 1940** and Rules thereunder.
- The **import, manufacture, distribution and sale of Drugs, Cosmetics and Medical Devices** in the country are regulated under the provisions of the **Drugs and Cosmetics Act, 1940 & Rules** made under the **Drugs Rules, 1945, Medical Devices Rules, 2017, New Drugs & Clinical Trials Rules, 2019** and **Cosmetics Rules, 2020**.
- The **National Pharmaceutical Pricing Authority (NPPA)** is mandated to fix and revise drug prices under the provisions of the **Drugs (Prices Control) Order (DPCO), 2013**, while monitoring compliance, ensuring the availability of essential medicines, and advising on pharmaceutical policy.
- **Indian Pharmacopoeia Commission (IPC)**: It oversees the periodic publication of the **Indian Pharmacopoeia**, the official compendium of drug standards under the **Drugs and Cosmetics Act, 1940**.
 - ♦ The Pharmacopoeia prescribes standards of identity, purity, and strength for medicines marketed in India.
- The regulatory control over **manufacturing, sale and distribution of drugs** is exercised through a system of **licensing and inspection by State Licensing Authorities (SLAs)** appointed by State Governments, while **regulatory control**

over drugs imported into the country is exercised by the Central Government through the **Central Drugs Standard Control Organisation (CDSCO)**.

- **State Health Regulatory Excellence Index (SHRESTH)**: A first-of-its-kind national initiative to benchmark and strengthen state drug regulatory systems through a transparent, data-driven framework.

Latest Developments

- The Ministry of Health and Family Welfare has **removed the existing exemption (under Schedule K) from licensing requirements** for formulations **containing ethyl alcohol**.
- All formulations containing **more than 12% volume per volume ethyl alcohol**, in **quantities exceeding 30 millilitres**, will no longer be covered under the exemption provided to them **under Schedule K**.
 - ♦ Such products will be required to obtain the **requisite licenses under the Drugs and Cosmetics Act, 1940**.
- **Significance**: The amendment is expected to **strengthen regulatory oversight** over those medicinal products containing alcohol, ensuring their supply only through the regulated pharmaceutical supply chain.



Schedule K of the Drugs and Cosmetics Rules, 1945

- Schedule K contains a list of certain drugs that are **exempted from some provisions of the Drugs and Cosmetics Rules, 1945**, subject to specified conditions.
- It facilitates the **sale and distribution of certain categories** of medicines where strict licensing requirements are not necessary.

Objectives and Need of tough regulation

- **Prevent Misuse and Diversion**: Prior to the amendment in July 2026, some medicinal

preparations containing ethyl alcohol were being actively diverted and misused as intoxicating substitutes, requiring urgent interventions flagged by state governments.

- **Public health and consumer safety:** The drug formulations should show strong therapeutic efficacy.
 - ♦ Substandard or spurious drugs can cause treatment failure and fatal drug induced toxicities.
- **Fighting Antimicrobial Resistance (AMR):** Unregulated over-the-counter (OTC) dispensing of powerful antimicrobials aggravates global drug-resistance problems.
- **Export Reputation Maintenance:** Being a major global supplier of generic medicines, strict compliance is critical for passing international audits from agencies like USFDA

Issues with the Current System

- **Manufacturing Quality Concerns:** There are instances of contamination and quality lapses highlighting weaknesses in adherence to manufacturing standards.
- **Fragmented Oversight:** Multiple regulatory authorities and varying enforcement standards create inconsistencies in monitoring.
- **Over-the-Counter Drug Culture:** Widespread self-medication increases the risk of irrational and unsafe use of medicines.
- **Regulatory Capacity Constraints:** In India, drug regulation is a dual responsibility shared between the Union and State governments. Many State drug control departments face shortages of inspectors, laboratories, and technical personnel.

Way Ahead

- Quality assurance should be **integrated throughout the manufacturing process** rather than relying on end-product testing only.
- Public disclosure of **inspection findings and regulatory actions** is necessary to improve accountability.
- There is a need to **use artificial intelligence, data analytics, and digital tracking** systems for regulatory surveillance.

Source: AIR

NEWS IN SHORT

ICODEC/AWIQLI DRUG

In News

Danish pharmaceutical giant Novo Nordisk launched its weekly insulin shot(icodec) in India , making blood sugar control easier and more convenient for Indian diabetics.

Historical Evolution of insulin

- Prior to 1921, Type 1 diabetes (T1D) was almost universally fatal with treatment consisting of severe calorie restriction and fasting.
 - ♦ Early insulin was derived from pig and cow pancreases.
- The structure of insulin was discovered in the 1960s. In the 1970s, recombinant DNA technology was developed that resulted in the production of insulin as recombinant human insulin.
- Modern insulin analogues have been modified to improve absorption and to prolong duration of action.
- **Insulin's function:**
 - ♦ **Type 1 diabetes:** The body produces little or no insulin and therefore insulin injections are needed for life.
 - ♦ **Type 2 diabetes:** While many patients can be treated at first with oral medicines, about 25-30% will eventually require insulin therapy as the disease progresses.

Do you know?

- There are around 101 million people with diabetes and 136 million people with pre-diabetes in India.
- Eventually about 20-30% of patients with Type 2 diabetes will need insulin, so that's about 20 million potential users.
- At present, only about 6 million Indians are on insulin, so there is a lot of underutilisation.

Icodec/Awiqli drug

- Insulin icodec is a genetically engineered insulin analogue (modified human insulin) that is engineered to stay active in the body for a much longer period of time than conventional insulin, allowing for once-weekly dosing instead of daily injections.
- It is the world's first long-acting insulin shot that reduces the number of pricks to just one a week, from the current once daily.

- It cuts the number of injections from 365 a year to just 52.
- It will be sold under the brand name Awiqli for just Rs 261 per week.

Advantages

- It enhances patient compliance with therapy by reducing the frequency of dosing.
- It Improves long term blood sugar (HbA1c) management.
- It may encourage earlier insulin initiation, reducing complications involving the heart, kidneys, nerves and eyes.
- It can be safely combined with GLP-1 receptor agonists, helping to improve blood sugar control and reduce insulin requirements.

Adverse effects

- Hypoglycaemia (low blood sugar) is the most common side effect of insulin icodec and affects about 1 in 10 patients.
- Experts say the risk is similar to daily conventional insulin injections.
- The hypoglycemia becomes more evident as the insulin brings down the previously high blood glucose.
- Some of the oral diabetes medications may also cause hypoglycemia . This is less noticeable when blood sugar levels are still very high .

Source :IE

OPERATION AMISTAD

In News

Operation Amistad has concluded successfully with the return of the Indian contingent to New Delhi.

Operation Amistad

- It is India's Humanitarian Assistance and Disaster Relief (HADR) mission following the devastating earthquakes in Venezuela.
- **Highlights** : Two Indian Air Force C-17 Globemaster III aircraft carried a 41-member contingent from the Indian Army's 60 Para Field Hospital Unit to Venezuela. It comprised surgeons, anaesthesiologists, orthopaedic surgeons, dental and other physicians, paramedical staff and support personnel.
 - ♦ It also included two BHISHM Cubes, which are state-of-the-art modular and portable mobile mini-hospitals designed for rapid disaster response, 6 tons of essential

medicines and medical equipment, and 30 tons of emergency relief supplies, including tents, solar lamps, portable water purifiers, and generator sets.

India's Humanitarian Assistance and Disaster Relief (HADR) paradigm

- It is backed by a robust policy and institutional architecture that ensures coordinated, timely and credible responses to humanitarian crises both at home and abroad through a whole-of-government approach combining diplomacy, defence, disaster management and public health.
- International HADR operations are regulated by the Prime Minister's 10-Point Agenda on Disaster Risk Reduction and NDMA's International HADR Guidelines (October 2024).
- These guidelines institutionalise overseas disaster response based on principles of respect for sovereignty, respect for international humanitarian law and human rights, transparency, accountability and ethical conduct, in line with the UNDRR Gender Action Plan (2024) to promote inclusive humanitarian action.
- They also recognise the Indian Armed Forces as enablers of rapid response and assign them critical roles in strategic airlift, logistics, medical support, evacuation, engineering assistance and use of advanced technologies such as drones and AI-enabled forecasting.

Major International HADR Operations/Evacuation / Relief Operations

- India has emerged as a dependable first responder in the Indian Ocean Region and beyond, guided by the principles of "Vasudhaiva Kutumbakam" and SAGAR (Security and Growth for All in the Region).
- India provides humanitarian assistance, disaster relief, evacuation, medical aid and reconstruction support to the global community through the joint efforts of the Army, Navy and Air Force.
- The induction of INS Sunayna as IOS SAGAR (2025) with personnel from Indian Ocean countries is a reflection of India's commitment towards collective maritime security, regional cooperation and capacity building.
- India's major HADR operations include
 - ♦ **Operation Maitri** (Nepal, 2015) for rapid rescue, relief, and \$2 billion commitment for reconstruction after the earthquake;

- ♦ **Operation Devi Shakti** (Afghanistan, 2021) for the evacuation of 669 people and humanitarian aid;
- ♦ **Mission SAGAR** (2020 onwards) where the Indian Navy provided food, medical oxygen and relief materials to 15 Indian Ocean countries during the COVID-19 pandemic; and
- ♦ **Operation Samudra Setu** (2020) to repatriate 3,992 Indians by sea.
- ♦ **Operation Ganga** (Ukraine, 2022) to evacuate more than 18,000 Indian citizens during the conflict,
- ♦ **Operation Dost** (Türkiye and Syria, 2023) to send medical teams, field hospitals, rescue teams and more than 135 tonnes of relief material after the deadly earthquakes,
- ♦ **Operation Kaveri** (Sudan, 2023) to ensure the safe evacuation of Indian nationals during civil conflict
- ♦ **Operation Brahma** (Myanmar, 2025) to provide approximately 750 tonnes of humanitarian assistance, field hospital for earthquake-hit Myanmar.

Source :Air

GI TAG TO JODHPUR MOJARI

Context

- The iconic Jodhpur Mojari, a handcrafted footwear tradition from Rajasthan, has been awarded the Geographical Indication (GI) tag.

About Jodhpur Mojari

- It is a leather boot known for its high craftsmanship, delicate embroidery and timeless style.
- It is predominantly created by the Jinagar community who were traditionally engaged in saddle manufacture.
- The craft has a history of around 200 years and was originally patronised by the royal family of Rajasthan and has evolved into a distinct cultural character of Jodhpur.
- The domestic market of Jodhpuri Mojari is anticipated to be over ₹100 crore while exports are worth nearly ₹10 crore and the GI tag is expected to further improve its global market potential.
- Mojari, worn by both men and women, suited the hot climate of Rajasthan. It is airy, easy to walk long distances, tough and flexible, and easy to

take off at homes and temples. It was designed as slip-on shoes with the top, side and back of the foot almost bare.



Recent GI tags

- **Chandannagar's Jolbhora Sandesh and Janai's Monohara:** In June 2026, West Bengal received GI tags for four more products, taking the total to 21 products. Alongside Chandannagar's Jolbhora Sandesh, Janai's Monohara, and Balagarh's traditional wooden boats have also received recognition.
- **Khurasani Imli of Mandu:** The fruit of iconic Baobab trees of mandu, Madhya Pradesh, locally known as Khurasani Imli, was awarded the GI tag in June 2026.
 - ♦ It is famous for its distinctive sweet-sour flavour and high nutritional value.
- **Bhagaiya silk,** Kuchai silk, Munda jewellery, and bamboo craft of Jharkhand received GI recognition last month. It gives national recognition to crafts rooted in traditional knowledge.
 - ♦ The Munda jewellery is known for its distinctive designs, traditional craftsmanship and cultural significance, reflecting the identity of the Munda community.
- **Ponduru Khadi of Andhra Pradesh:** Ponduru Khadi is a traditional hand-woven cotton fabric produced in Ponduru village of Srikakulam district in Andhra Pradesh, locally known as Patnulu.
 - ♦ The fabric is made using Hill cotton, Punasa cotton, and Red cotton grown in the same region.
 - ♦ One of its most distinctive features is the use of the jawbone of the Valuga fish for cleaning cotton, a practice not found anywhere else in the world.

Source: IE

INDIA'S FIRST HYDROGEN TRAIN

Context

- Indian Railways has notified **India's first hydrogen-powered train**, which is expected to be flagged off by Prime Minister Narendra Modi on **17 July**.

About India's first hydrogen-powered train

- The **Jind-Sonipat route in Haryana** has been selected as the pilot corridor for the project.
- Fully **designed and developed in India**, it is built on a **Broad Gauge** platform and is currently the **world's longest hydrogen-powered train** with **10 coaches**.
- The train is powered by a **1,200 kW hydrogen fuel cell propulsion system** and has a maximum operating speed of **75 kmph**.
- The project includes:
 - Conversion of **two 1,600 HP diesel power cars** into hydrogen fuel cell-powered coaches.
 - Establishment of a **hydrogen storage and refuelling facility** at **Jind, Haryana**.
- The **Research Design and Standards Organisation (RDSO)** is responsible for the design, validation, and testing of the project.

Significance

- The hydrogen train 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.
- It marks a historic step in India's mission to build hydrogen-powered trains, a feat achieved by a few nations like **Germany and China**.
- This also brings India one step closer to Indian Railways' bold target — to become a **Net Zero Carbon Emitter by 2030**.

Hydrogen Fuel Cell Technology

- It generates electricity through a **chemical reaction between hydrogen and oxygen**, producing **water vapour as the only by-product**.
- It offers a **cleaner alternative** to conventional fossil fuel-based railway propulsion systems.

Source: TOI

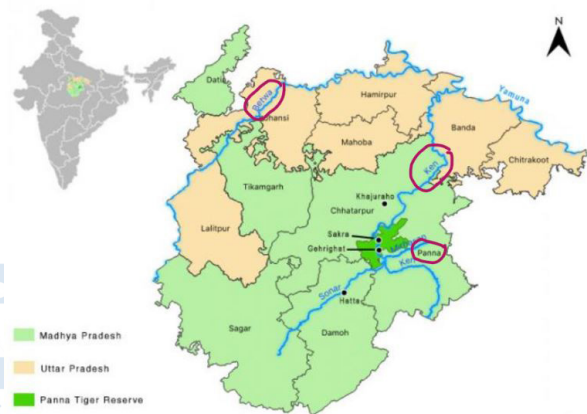
KEN-BETWA RIVER LINKING PROJECT

Context

- Residents of several villages who are being impacted by the **Ken-Betwa river linking project**, have restarted their agitation over their demands of better compensation and rehabilitation.

Ken-Betwa River Linking Project

- In 2021, a memorandum of agreement was signed among the **Ministry of Jal Shakti** and the governments of **Madhya Pradesh** and **Uttar Pradesh** to implement the Ken-Betwa Link Project.



Project:

- Transferring water from the **Ken river to the Betwa river**, both **tributaries of the Yamuna**.
- The Ken-Betwa Link Canal will be **221 km in length**, including a **2-km tunnel**.
- It has two phases. Phase-I will involve building the **Daudhan Dam complex and its subsidiary units**.
- Phase-II will involve three components — **Lower Orr Dam, Bina Complex Project and Kotha Barrage**.
- It is the project under the **National Perspective Plan** for interlinking rivers

Regions to be Benefited:

- The project lies in **Bundelkhand**, which spreads across 13 districts of Uttar Pradesh and Madhya Pradesh.
- The project will be of immense benefit to the water-starved region.
- Completion:** It is proposed to be implemented in **eight years**.

Source: TH

EL NIÑO STRENGTHENS, COULD DEVELOP INTO STRONGEST SINCE 1950

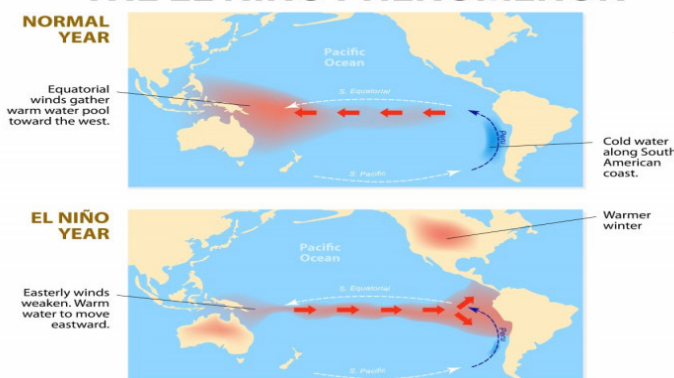
Context

- As per the US-based **National Oceanic and Atmospheric Administration (NOAA)**, the **prevailing El Niño in the Pacific Ocean** could intensify during the coming months and turn into one among the largest events in the historical records.

El Nino

- El Niño means **Little Boy** in Spanish. It is a climate phenomenon characterized by the periodic warming of sea surface temperatures in the central and eastern equatorial Pacific Ocean.
 - During El Niño, **trade winds weaken**.
 - Warm water is pushed back east, toward the west coast of the Americas and as a result **cold water is pushed towards Asia**.

THE EL NIÑO PHENOMENON



Impact of El Nino on weather patterns:

- Global Temperature Rise:** El Niño causes a rise in global temperatures, often leading to warmer-than-average conditions worldwide.
- Disruption of Monsoon:** In India, El Niño typically weakens the monsoon, leading to reduced rainfall and drought conditions.
- Increased Risk of Wildfires:** El Niño increases the likelihood of wildfires, especially in regions like Australia, southern Africa, and parts of the Americas.
- Extreme Weather Events:** El Niño can trigger extreme weather events, including more intense storms, hurricanes, and cyclones, particularly in the Pacific Ocean and Atlantic.

Latest Forecast by NOAA

- There is an **81% chance of a very strong El Niño** during October-December that would rank among the **largest El Niño events** in the historical record going back to **1950**.
- In the past, **60% of the El Nino years** have reported either **below normal or deficient seasonal rainfall**.
- The other 40% El Nino years** have received **normal rainfall** during the monsoon season over India.

Source: IE

ASIATIC LION

Context

- The National Zoological Park (Delhi) has recorded the birth of three Asiatic lion cubs.
- The breeding programme at Delhi Zoo is part of **ex-situ conservation**, which involves protecting and breeding threatened species outside their natural habitats.

Asiatic Lion (*Panthera leo persica*)

- It is one of the **five big cat species** found in India.
- Physical Characteristics:** Asiatic lions are slightly **smaller than African lions**.
 - Males have **less developed manes**, leaving their ears visible.
 - Prominent **longitudinal fold of skin** along the belly (a distinguishing feature from African lions).
- Distribution:** In India, concentrated in the state of Gujarat in and around the **Gir Forest** mainly in;
 - Gir National Park and Wildlife Sanctuary
 - Paniya Wildlife Sanctuary
 - Mityala Wildlife Sanctuary
 - Barda Wildlife Sanctuary.
- Population Increase:** As per the **16th Lion Population Estimation**, India has reported a **32% increase (from 674 in 2020 to 891 in 2025)** in its lion population, exclusively concentrated in Gujarat, between 2020 and 2025.
- Conservation Status:**
 - IUCN Red List status:** Endangered
 - CITES:** Appendix I
 - Wildlife Protection Act, 1972:** Schedule I



Source: IE

CONSERVATION PROJECTS FOR RIVER DOLPHINS, SNOW LEOPARDS AND OTHER THREATENED SPECIES

Context

- The governing body of the **National Compensatory Afforestation Fund Management and Planning Authority (CAMPA)** gave the nod to four new conservation projects for **river dolphins, snow leopards, wild water buffalo, and Indian rhinoceros** along with continued support for the conservation of Manipur's **brow-antlered deer, Sangai**.

Snow Leopards (Panthera Uncia)

- Physical traits:** Snow leopards are adapted to **rugged, cold environments, with thick fur, stocky bodies, and long tails** that serve as rudders for balance and warmth.



- Habitat:** They inhabit the high-altitude mountain ranges of **12 Asian countries, including India**, Afghanistan, Bhutan, China, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan.
- They are referred to as the '**ghosts of the mountains**' as they are hardly ever seen.
- IUCN Red List:** Vulnerable.

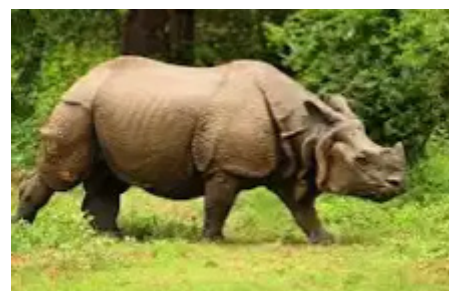
Wild Water Buffalo (Bubalus Arnee)

- Wild Water Buffalo, also called Asiatic buffalo, is a **large bovine** native to the **Indian subcontinent and Southeast Asia**.
- Characteristics:** The wild water buffalo has an **ash-gray to black skin**. The moderately long, coarse and sparse hair is directed forward from the haunches to the long and narrow head.
- Habitat:** The wild water buffalo occurs in India, Nepal, Bhutan, Thailand, and Cambodia. In India it is found at;
 - ♦ **Kaziranga, Manas and Dibru-Saikhowa National Parks, Laokhowa Wildlife Sanctuary and Bura Chapori Wildlife Sanctuary** and in a few scattered pockets in Assam,
 - ♦ **D'Ering Memorial Wildlife Sanctuary** in Arunachal Pradesh,
 - ♦ **Balphakram National Park** in Meghalaya,
 - ♦ **Indravati National Park and Udanti Wildlife Sanctuary** in Chhattisgarh.
- IUCN status:** Endangered.



Indian rhinoceros (Greater One-Horned Rhino)

- Rhinoceroses are large, **herbivorous mammals** identified by their characteristic **horned snouts**.
- Habitat:** The **Kaziranga National Park and Manas National Park** in Assam, **Pobitora reserve forest** in Assam (having the highest Indian rhino density in the world), **Orang National park** of Assam etc.
- IUCN Status:** Vulnerable.



River Dolphins

- India is home to **two species of freshwater dolphins**: Ganges (*Platanista gangetica*) and Indus (*Platanista minor*).
- **Ganges River Dolphin (*Platanista Gangetica*):**
 - ♦ **Characteristics:** Ganges River Dolphin is essentially **blind and hunts by emitting ultrasonic sounds (echolocation)** waves that bounce off of fish and other prey.
 - ♦ **Distribution:** It is distributed in Ganges and Brahmaputra river basins of India, Nepal and Bangladesh. It can only live in freshwater.
 - ♦ **IUCN status:** Endangered.
 - ♦ **National and State Symbol:** The Ganges river dolphin was designated as a **national aquatic species in 2009** and as the **state aquatic animal of Assam**.
- **Indus River Dolphin (*Platanista minor*):**
 - ♦ **Characteristics:** The Indus River Dolphin is also functionally blind and relies on echolocation to navigate and find prey. It is commonly referred to as **Bhulan** in local languages.
 - ♦ **Distribution:** The Indus River Dolphin is found in the Indus River system in Pakistan

and a small population is present in the **Beas River** in India.

- ♦ **IUCN status:** Endangered.
- ♦ **State Symbol:** The Indus river dolphin is the state aquatic animal of **Punjab**.

Brow-antlered deer

- The Sangai, also known as the Manipur brow-antlered deer, is a deer species found exclusively in Manipur, within the **Keibul Lamjao National Park**, India.



- It serves as the official **state animal of Manipur** and is famously nicknamed the **“dancing deer”** due to its unique, delicate gait over its marshy habitat.

Source: TH