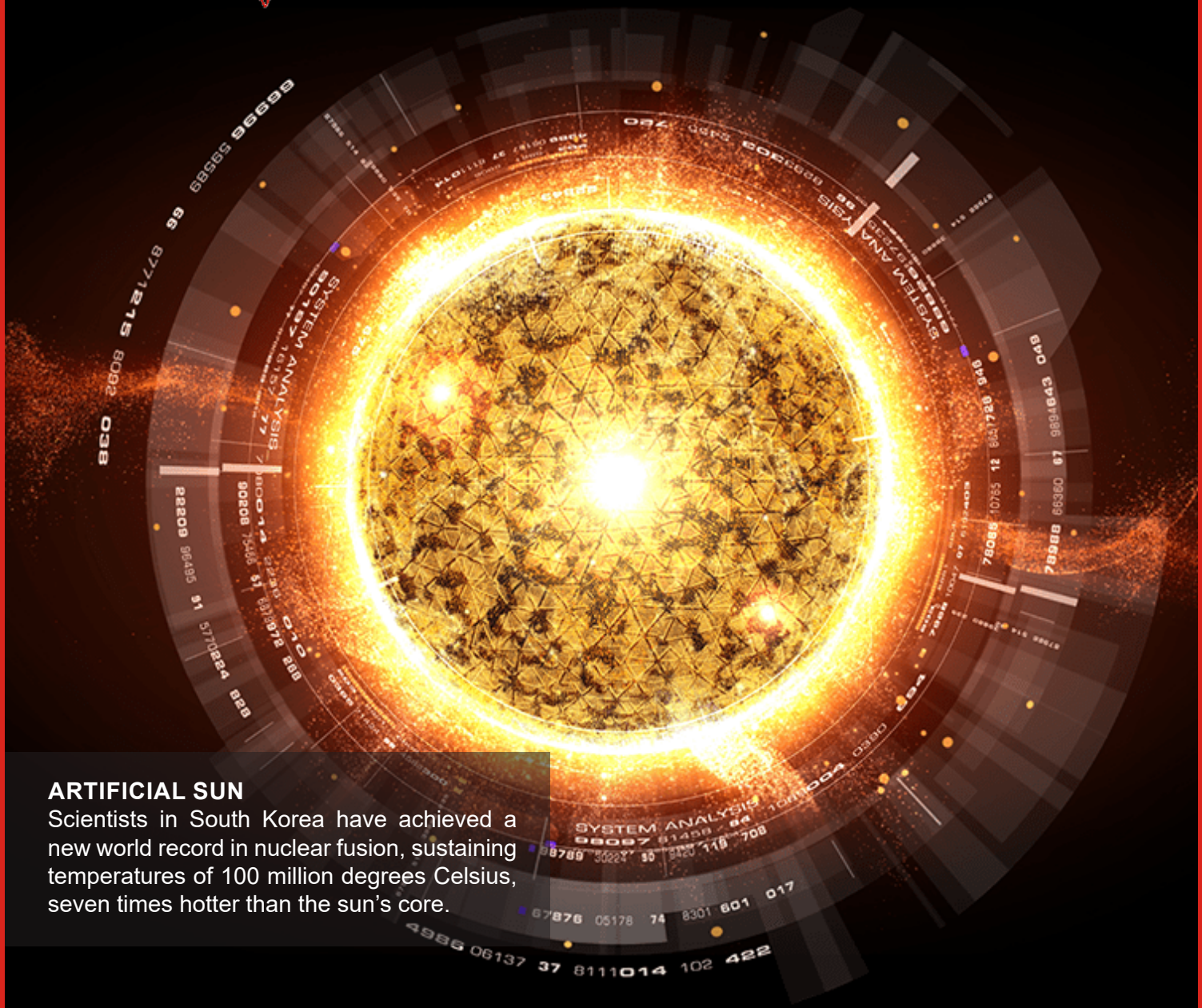
INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION



ARTIFICIAL SUN

Scientists in South Korea have achieved a new world record in nuclear fusion, sustaining temperatures of 100 million degrees Celsius, seven times hotter than the sun's core.

01 APR - 06 APR 2024

WEEKLY CURRENT AFFAIRS

WWW.INSIGHTSONINDIA.COM

INSIDE

GENERAL STUDIES – 1

GENERAL STUDIES – 2

GENERAL STUDIES – 3

GENERAL STUDIES – 4

CONTENT FOR MAINS ENRICHMENT

FACTS FOR PRELIMS

GS-1

GS-2

GS-3

SPORTS CORNER

MAPPING

GENERAL STUDIES – 1

Topics: Population and associated issues, poverty and developmental issues.

1. WORLD BANK WARNS OF SQUANDERED DEMOGRAPHIC DIVIDEND

Context:

The World Bank (as per "Jobs for Resilience, South Asia Development Update") warned that South Asia, including India, is **not utilizing its demographic dividend effectively**.

What is a Demographic Dividend?

The demographic dividend refers to the **economic growth potential that arises from changes in a population's age structure.** It occurs when the **proportion of working-age individuals (15-64) in a population** is larger than the dependent population (children and elderly), leading to increased productivity and economic growth. India is expected to enjoy this **window for 37 years starting in 2018 and up to 2055**

Benefits of Demographic Dividend are:

Advantage	Description
Increased Labour Force	A larger workforce boosts economic productivity.
Women's Workforce Growth	Increased **female participation in the workforce**, driving economic growth.
Higher Savings Rate	Working-age individuals typically save more, boosting overall savings rates.
Middle-Class Expansion	Demographic dividend fosters the **rise of an aspirational middle class**, driving economic growth and consumption.
Historical Growth Contribution	In advanced economies, demographic dividends historically contributed **up to 15% of overall growth**.
Rapid Industrialization and Urbanization	An increased employment-seeking population leads to higher economic activities, driving industrialization and urban growth.
Workforce Expansion	**With over 65% of the population in the working age group**, India can become a significant global economic powerhouse.

Issues in harnessing demographic dividends (as per the report):

1. **Jobless Growth:** South Asian countries **experience jobless growth, with an employment ratio of only 59% in 2023**, lower than other emerging economies (~70%). This is exacerbated by **exceptionally low shares of women in employment** and weak employment trends in non-agricultural sectors.
2. **Slow Private Investment:** Private investment has slowed, and growth is primarily **driven by public investment**. This imbalance can hinder sustainable economic development and job creation.
3. **Slowing Global Growth:** The region faces challenges due to slowing global growth, which can negatively impact trade, investment, and economic prospects.
4. **Heightened Risk**s: Various risks, including geopolitical tensions, climate change, and pandemics, pose additional challenges to harnessing the demographic dividend effectively.

Other challenges include:

1. **Poor Human Capital Formation**: India faces challenges with low employability among graduates and postgraduates, **with only 20-30% of engineers** finding jobs suited to their skills, highlighting a need for skill development.
2. **Low Human Development**: India ranks poor in the UNDP Human Development Index, indicating lower life expectancy and education levels compared to other developing countries
3. **Informal Economy: Approximately 216 million people in India**, primarily in the agriculture sector, are part of the informal economy, facing lower wages, limited social security, and irregular employment, hindering economic growth and stability.
4. **Asymmetric Demography**: The growth in the working-age population is concentrated in some of India's poorest states, requiring the creation of meaningful employment opportunities to fully realize the demographic dividend.
5. **Tilted Sex Ratio and Declining Female Labour Force Participation**: India faces challenges with declining female labour force participation rates, hindering the country's ability to fully utilize its workforce potential and achieve demographic dividend goals.
6. **Psycho-social issues**: India stands **12th on top suicide rates of any** country. There is also a rising issue of drug abuse among youth.
7. **Fatigue and burnout**: Indian youth have been observed to be overworked and fatigued due to rising heat and long working hours.
8. **Radicalization** a combination of these issues has also led youth to be radicalized.

Measures to improve Demographic dividend (as per the World Bank Report)

1. **Openness to International Trade:** Reduce barriers to trade to encourage greater participation in global markets, promoting economic growth and job creation.
2. **Flexible Labour Laws and Efficient Land Markets**: Develop flexible labour laws and efficient land markets to enhance business competitiveness, attract investment, and stimulate job growth.
3. **Infrastructure Investment**: Invest in infrastructure, particularly in transportation and agricultural sectors, to improve connectivity, productivity, and competitiveness, fostering economic development and employment opportunities.
4. **Promote Female Labor Force Participation:** Encourage female labour force participation through measures such as wage subsidies, tax benefits, and initiatives to support work-life balance, ensuring gender equality and maximizing the workforce potential.
5. **Enhance Human Capital:** Improve human capital through education and skill development programs, facilitating the transition of workers from agriculture to non-agriculture sectors, thus boosting productivity and enabling economic diversification.

Other measures needed are:

1. **Boost health investments:** Increase healthcare spending to ensure a productive workforce.
2. **Reform the informal sector**: Simplify regulations and provide credit access.
3. **Invest in the latest technologies**: Support research and development in emerging fields.
4. **Address state diversity**: Collaborate between states to manage demographic transition.
5. **Establish a high-level task force:** Create a dedicated team to oversee demographic dividend.
6. **Manage urbanization:** Plan for the influx of young people into urban areas with adequate amenities and services.
7. **Social security:** As per ILO, **only 24.4 per cent of Indians**, even fewer than Bangladesh **(28.4 per cent**), are under any sort of social protection benefit. So, social security net- Insurance and pension needs to be enhanced.

Conclusion:

MoSPI has released the 'Youth in India 2022' Report, which shows that the population share of the youth is starting to decline whereas the share of the elderly is expected to increase during 2021-2036. This means necessary steps on the economic side and others are needed to empower the youth to prevent the demographic dividend from turning into a demographic disaster.

Insta Links

- Fertility rate below replacement level

GENERAL STUDIES – 2

Topics: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures.

1. REGULATING BIG TECH COMPANIES IN INDIA AND THE WORLD

Context:

The US has recently **initiated actions against Big Tech, particularly Google**, which has emboldened other countries like India to address similar disputes with tech giants.

What are Big-Tech Firms?

Big Tech firms refer to **large technology companies that dominate their respective sectors**, wielding significant influence and control over digital platforms and services. These companies typically operate on a global scale and are characterized by their immense market capitalization, extensive user base, and diverse portfolio of products and services. Examples of Big Tech firms include

1. **Google** (controls the majority of online search traffic and digital advertising revenue)
2. **Amazon** (dominates e-commerce and cloud computing)
3. **Apple** (iPhone, iPad, and MacBook,)
4. **Facebook** (Meta) (Leads the social media landscape)
5. **Microsoft** (software, hardware, and cloud services)

Need for Regulations:

1. **Arbitrary Pricing:** Big Tech's influence on pricing rules in the digital space, leads to concerns about fairness and competition.
2. **Regulatory Vacuum**: Challenges faced by regulators in keeping pace with rapid tech innovation, leading to reactive rather than proactive measures.
3. **Data Collection and Privacy Concerns:** Big Tech's extensive data collection practices raise privacy, surveillance, and data security issues.

Specific concerns related to the functioning of Big Tech Firms:

Concerns	Description
Prioritizing In-House Services	Allegations against **Alphabet, Apple, and Meta** for steering customers towards their **in-house services over competitors'**, potentially limiting consumer choice. E.g., Apple priorities its App Store and Safari browser in its services
Non-Compliance with DMA of EU	**Alphabet, Amazon, Apple, ByteDance, and Microsoft were designated as 'gatekeepers' under the Digital Markets Act (DMA) (in 2023)** and investigated for non-compliance.
Discriminatory Approach	The European Commission is investigating **Google for potential bias in search results,** focusing on whether the company favours its own services over competitors.
	Competition Competition of India has launched a probe into Google's Play Store pricing policy for alleged discriminatory practices.
Reducing Choices for Customers	**In October 2020, the US Department of Justice accused Google of unlawfully maintaining monopolies** in search and search advertising markets through anti-competitive practices. They claimed it harmed consumers by limiting **search quality, reducing choices, and stifling innovation.**
Ecosystem Captivity	The European Commission is investigating **whether Apple allows users to uninstall pre-installed apps**, change default settings, and choose alternatives easily on iOS. They're concerned that Apple's practices might limit user choice within its ecosystem, **leading to ecosystem captivity.**
Concerns Over 'Binary Choice' of Meta	Meta introduced a **subscription model in the EU, EEA, and Switzerland**, allowing users to use Facebook and Instagram without ads or continue using them for free with personalized ads. Regulators found the **model's "binary choice" insufficient** in providing a real alternative for users who don't consent, failing to prevent data accumulation by gatekeepers.
Antitrust Concerns	E.g., **Facebook (Meta) is facing antitrust lawsuits** and probes for acquiring potential competitors like Instagram and WhatsApp, along with concerns about its control over digital advertising and social networking markets.
	Amazon is under antitrust scrutiny for **its treatment of third-party sellers, predatory pricing allegations, and potential conflicts** of interest as both a retailer and a marketplace operator.
	Antitrust laws aim to **promote fair competition, prevent monopolistic practices, and ensure consumers** have access to a variety of high-quality products at fair prices.

Existing governance frameworks in place to regulate technologies for responsible use:

- **Competition Act, 2002 and Competition Commission of India (CCI):** The Competition Act, 2002 is the **primary legislation governing antitrust issues (unfair competitive practices)** in India for regulating Big Tech companies.
    - CCI is responsible for **checking monopolistic practices** and ensuring fair competition.
    - **E.g., Recently CCI imposed heavy penalties on misuse of Google's dominant position** in the online search market
- **Competition Amendment Bill, 2022**: It mandates the Competition Commission of India (CCI) to establish **regulations for assessing if an enterprise has significant business operations in India**. This strengthens the Commission's review process, particularly in **digital and infrastructure sectors**, previously underreported due to lower asset or turnover values not meeting jurisdictional thresholds.
- **Information Technology Act, 2000:** The Act provides a legal framework for electronic governance by giving recognition to electronic records and digital signatures.
    - **However, the act is old and doesn't cover all aspects of technology misuse.**
- **National Regulatory Frameworks: E.g. The National Strategy for Artificial Intelligence (2018)**
- **Industry Self-regulation**: Technology companies often develop their own codes of conduct and industry standards to govern the responsible use of technologies. Self-regulation can **provide flexibility and adaptability** to rapidly evolving technologies.
    - However, it **may lack enforceability and uniformity across** different industries and regions.
    - E.g. **self-regulation of OTT platforms**

- **Multi-stakeholder Initiatives:** Collaborative efforts involving governments, businesses, civil society organizations, and academia play a crucial role in technology governance. These initiatives focus on dialogue, knowledge sharing, and best practice development.
    - Examples include the **Global Network Initiative (GNI**) and the **Partnership on AI (PAI).**
- **The RBI's 'Payments Vision 2025'** aims to regulate big tech and fintech in the payments sector.

Regulation of tech companies in other countries:

Country	Mechanism	Description
Europe	**Digital Markets Act (DMA) and Digital Services Act (DSA)**	The Digital Markets Act (DMA) aims to **ban harmful business practices** by large digital players, creating a fairer and more competitive economic space. **The Digital Services Act (DSA) targets various online services**, including websites, internet infrastructure services, and online platforms.
USA	**Anti-trust legislation**	The United States has **adopted anti-trust legislation to address the dominance of Big Tech companies**. These measures include giving states greater power in competition cases and increasing funding for federal regulators.
Australia	**Competition watchdog recommendations**	The competition watchdog in Australia has **recommended tighter regulations for Facebook and Google** to improve media competition.
		Additionally, the **Online Safety Act grants** the power to force social media companies to delete posts constituting online bullying and imposes fines on companies and hosts involved in the alleged abuse.

Global cooperation can contribute to the development of global standards for technology governance in the following ways:

1. **Information Sharing and Best Practices**: E.g, India can adopt legislation similar to the **EU's Digital Services Act** to regulate India's service marketplace.
2. **Harmonization of Standards:** Global cooperation can facilitate the harmonization of standards across countries and regions **E.g., Algorithmic Accountability**, to identify, assess and penalise harmful algorithmic amplification by Tech companies
3. **Capacity Building and Technical Assistance:** Global cooperation supports capacity-building efforts in developing countries by providing technical assistance and knowledge transfer.
4. **Norm Setting and Policy Guidance:** These norms can address issues such as **AI ethics, privacy protection, autonomous systems, and digital rights.**
5. **Multilateral Governance Mechanisms:** E.g., for regulating the flow of funds, drugs, etc. using the Dark Web and other unregulated technology networks.

The Standing Committee on Finance submitted its report on 'Anti-Competitive Practices by Big Tech Companies' in December 2022.

Key observations and recommendations include:

1. **Regulating Digital Markets:** Evaluate competitive behaviour in digital markets before monopolization occurs, suggesting the **identification of Systemically Important Digital Intermediaries (SIDIs**) and yearly reporting to the Competition Commission of India (CCI).
2. **Digital Competition Act**: Introduce legislation to ensure a fair digital ecosystem.
3. **Self-Preferencing:** SIDIs must not favour their own services over competitors' on their platforms.
4. **Data Usage:** SIDIs should handle user data responsibly, avoiding merging data from core services without consent and restricting data access to third-party services.
5. **Revamping CCI:** Strengthen the CCI with a specialized digital markets unit to monitor SIDIs and address anti-competitive behaviour.
6. **Third-Party Applications**: SIDIs should allow and technically enable the use of third-party applications without transferring data to foreign governments.
7. **Bundling and Tying**: SIDIs should not force users to subscribe to additional services to use their core platform.
8. **Anti-Steering**: SIDIs should not restrict business users from steering customers to offers outside the platform.

Conclusion

Collaborative efforts can help address the challenges posed by emerging technologies, promote ethical and responsible technology use, and ensure a globally inclusive and sustainable digital future.

Insta Link:

RBI to regulate bigtech and fintech

Mains Link:

Q. There is growing support for regulating big tech companies such as Facebook and Google. Discuss the reasons. (15M)

Prelims Link:

Q. With reference to 'consumers' rights/privileges under the provisions of law in India, which of the following statements is/are correct? (UPSC 2012)

1. Consumers are empowered to take samples for food testing.
2. When a consumer files a complaint in any consumer forum, no fee is required to be paid.
3. In case of death of consumer, his/her legal heir can file a complaint in the consumer forum on his/her behalf.

Select the correct answer using the codes given below:

(a) 1 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Ans: C

Topics: Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

2. INDIA'S STRATEGIC FOCUS: CENTERING AFRICA IN THE GLOBAL SOUTH VISION

Context:

India's relationship with African nations is crucial in its **vision for the Global South**, especially as it seeks to **navigate a changing global landscape**.

What is India's Global South Vision?

India's Global South Vision emphasizes fostering **strategic partnerships with nations in the Southern Hemisphere**, aiming for **a more equitable and inclusive global order**. It focuses on economic cooperation, **multilateralism, and solidarity** among developing countries to address common challenges and promote sustainable development.

Africa's Importance for India's Global South Vision:

1. **Economic Partnerships**: India and Africa boast immense economic potential, with Indian investments exceeding $**98 billion in 2023** and bilateral trade totalling $100 billion.
2. **Strategic Influence**: Africa's presence in **global forums is pivotal for India's vision of rule-based global governance**, as demonstrated by India's advocacy for the African Union in the G20 summit.
3. **Energy Security:** Cooperation in the energy sector is crucial, with **Africa possessing 30% of the world's critical mineral reserves** essential for India's transition to a low-carbon future, particularly in solar panel and battery production.

Other aspects of India-Africa Relations:

Aspect	Details
Cultural	India's relations with Africa are deeply rooted in cultural and civilizational ties, reflecting ideologies of **"Vasudhaiva Kutumbkam" and "Ubuntu"**

Political	India offers assistance in **defence capabilities, promoting security cooperation and countering China's military presence**
	India and Africa cooperate on global issues, advocating for the interests of **developing countries and pursuing reforms in global governance institutions**
Shared Vision	India views Africa as a **foreign policy priority**, offering support without conditionality or a hidden agenda.
	Hamid Ansari has ives 4 imperatives for cooperation between India and Africa 1. Common historical experiences and cultural links. 2. Complementarities in strengths and capabilities. 3. A common approach in meeting developmental challenges. 4. Convergence of views of global matters.
	PM Modi- *The warmth and depth of the connections between Indian and African countries have been the pillars of India's foreign policy, leading to a "**strong emotional link**".*
Development Assistance	India offers **training and capacity-building programs** through the **ITEC** program
	India has worked with Japan to create the **Asia-Africa Growth Corridor (AAGC)**
	India has increased lending to Africa to counter China's influence, including $32 billion in credit across 42 African countries over the past decade.
Health Collaboration	Indian **pharmaceutical companies provide affordable generic medicines**
	India deploys medical teams and offers technical assistance to combat diseases like HIV/AIDS, malaria, and Ebola in African countries.
Defence Cooperation	India has signed **MoUs with all African nations on the Indian Ocean Rim (IOR)**
	Hosts the **India-Africa Defence Dialogue (IADD)** at the defence ministers' level
	Conducts trilateral maritime exercises to enhance maritime cooperation with countries like Tanzania and Mozambique.
Technology and Digital Cooperation	India sets up a **fibre-optic network for satellite connectivity**, telemedicine, and tele-education in Africa under the **Pan African e-Network** Project
	Introduces initiatives like **e-VidyaBharti and e-ArogyaBharti (e-VBAB)** to provide free tele-education and medical education to African students and healthcare professionals.
Education and Skill Development	Collaboration between Indian and African educational institutions enhances educational opportunities and skill development, facilitated by programs like ITEC.
Renewable Energy and Sustainability	**Joint initiatives in renewable energy and sustainable development**, such as the **International Solar Alliance (ISA),** combat climate change with the participation of 38 African member countries.
Peacekeeping and Diplomacy	India and Africa collaborate in global forums, advocating for peace, stability, and reforms in global institutions like the UN Security Council and the WTO
	India led the proposal for including the **African Union in the G20**.

Challenges faced by African countries:

1. **Misgovernance**: Poor governance, corruption, and lack of accountability e.g., countries like Ethiopia, Sudan, and the Central African Republic face insurgency, ethnic violence, and terrorism
2. **Unplanned Development**: Rapid population growth, urbanization, and environmental degradation.
3. **Dominance of Ruling Tribes**: Ethnic and tribal conflicts and monopolization of power.
4. **Inter-Tribal Scrimmage**: Frequent clashes over resources.
5. **Terrorism**: Threats from Islamic extremism and global networks.
6. **Changing Climate**: Vulnerability to climate change impacts.
7. **Runaway Food Inflation**: High food prices affecting millions.
8. **External Interventions**: Military interventions worsen situations.
9. **Return of Military Generals**: Reemergence of military leadership.
10. **Competition and External Players**: Various external actors, including **China, Russia, the US, EU, Japan, Turkey, and UAE,** are actively vying for influence in Africa, seeking market access, resources, and political power.

How can India help Africa?

Area	Strategies
Political Support	**Use diplomatic influence** to support peace, democracy, and development. Advocate for African interests in global forums. Foster regional cooperation through **support for African Union initiatives such** as such as the **African Continental Free Trade Area (AfCFTA) and the African Peace and Security Architecture (APSA)**
Economic Partnership	Enhance trade and investment ties. **Provide market access and preferential tariffs.** Offer Indian innovations and force multipliers
	Promote India-Africa trade through the creation of an **Africa Growth Fund (AGF) to enhance access to finance**
Security Cooperation	Provide training, equipment, and intelligence to security forces. Contribute to peacekeeping missions. Collaborate in countering terrorism, piracy, and organized crime
Poverty and Hunger	Adapt Indian **microfinance and agricultural practices** to empower communities in Africa. Utilize **South-South cooperation platforms** for knowledge exchange
Health and Disease Burden	Provide affordable healthcare solutions using **expertise in generic drug** production and telemedicine. **Joint research efforts** on infectious and neglected tropical diseases
Inclusiveness of Global South	E.g., India advocated for **AU's full membership in G20 (accepted under India's G20 Presidency)**
Piracy and Terror	Conduct joint military exercises. **Share information and capacity-building programs**
Climate Action	Collaborate on projects to mitigate climate change impacts. Support initiatives like the **Great Green Wall**
UN Reforms	Advocate for equitable representation of Africa in international organizations, including the UN Security Council
Implementing the 'Roadmap 2030'	Form a team led by the MEA's Secretary for Africa and a Deputy National Security Adviser. Following this roadmap will bolster **India's partnership with Africa, enhancing global stature.**
	The Roadmap 2030 is a set of **policy recommendations that** aims to deepen and diversify the relationship between India and Africa.

Several challenges have hindered the realization of India-Africa's potential. One major obstacle is the **lack of a comprehensive and focused African policy** by India, which has led to a lack of strategic direction in its engagement with African countries.

Additionally, **China's dominant presence in Africa has raised concerns about India's limited involvement and competition in the region**. The disparity in investment between India and China, the impact of multilateral treaties on trade, and issues related to **political instability and terrorism** further complicate the relationship.

Conclusion

India's robust ties with Africa present vast **opportunities for economic, political, and social collaboration**. Prioritizing engagement with African nations is crucial for India's leadership in the Global South. Amid global transformations, the synergy between India and Africa promises a mutually beneficial and prosperous future.

In this regard, **PM Modi** has stated that "***Just as India and Africa fought colonialism together, we will work together for a just, representative and democratic global order that has a voice and a role for one-third of humanity that lives in Africa and India***."

Insta Links:

- India-Africa ties

Mains Link:

Q. How does India see its place in the economic space of rising natural resource-rich Africa? (UPSC 2014)

Q. Increasing interest of India in Africa has its pros and cons. Critically Examine. (UPSC 2015)

Prelims Link:
Q. Consider the following statements: (UPSC 2016)
1. The India-Africa Summit
2. held in 2015 was the third such Summit
3. was actually initiated by Jawaharlal Nehru in 1951

Which of the statements given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
Ans: A

GENERAL STUDIES – 3

Topics: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

1. INDIA'S DEFENCE EXPORTS REACHES AN ALL-TIME HIGH

Context:

India's defence exports soared to a record high of **Rs. 21,083 crore** in FY 2023-24, marking a remarkable growth of **31 times over the past decade** and a **32.5% increase** from the previous fiscal year.

Key achievements:

1. **Record High Exports**: Indian defence exports reached an all-time high of Rs. 21,083 crores in FY 2023-24, indicating a substantial growth trajectory.
2. **Remarkable Growth**: The defence export sector witnessed a remarkable growth of **31 times over the past decade**, compared to FY 2013-14, showcasing significant expansion and development.
3. **Increased Export Authorizations**: The number of export authorizations rose to 1,507 in FY 2023-24, indicating a growing demand for Indian defence products and technologies in the global market.
4. **Private Sector Contribution: The** private sector played a significant role, contributing approximately **60% to defence exports**, highlighting the increasing participation and capability of private defence firms in meeting export demands

How does high defence export help India?

Benefit	Explanation
Economic Growth	Boosts the economy through increased revenue, job creation, and enhanced manufacturing capabilities.
	It **reduces India's import dependence**. India allocates around **1.8% of its GDP** towards defence spending
Technological Advancement	Drives innovation and technological growth in the defence sector, fostering advancements in other industries.
Diplomatic Relations	Strengthens diplomatic ties with importing countries, facilitating strategic partnerships and cooperation.
Global Influence	Enhances India's stature in the global arena, positioning it as a reliable defence partner.
	India has been successful in exporting products such as **personal protective items, offshore patrol vessels, and avionics** to countries like Maldives, Sri Lanka, Russia, France, Nepal, Mauritius, Sri Lanka, Israel, Egypt, the UAE, and Chile
Self-Reliance	Reduces dependency on imports, promoting indigenous production and self-sufficiency in defence capabilities.

Military Modernization	Supports modernization of armed forces by providing access to advanced technologies and equipment.
Balance of Trade	Contributes to a positive balance of trade, helping to offset costs of defence procurement and imports.
Integration with Global Defense Value Chain	Exporting defence products to major countries like **Italy, Nepal, etc., integrates** India into the global defence value chain, enhancing its strategic relevance and influence in the international arena.

Steps taken by India:

Steps	Related Steps Taken
Enhanced Foreign Direct Investment (FDI)	Liberalization of FDI policy allowing **up to 74% FDI** under automatic route and 100% by government approval (e.g., The **Swedish Arms Major SAAB's Announcement**: First 100% FDI project for manufacturing Carl Gustav M4 rocket system in India.)
Innovation for Defence Excellence (iDEX)	Launch of **iDEX scheme** involving Start-ups & Micro, Small and Medium Enterprises (MSMEs).
Defence Acquisition Procedure (DAP) 2020	Implementation of new procurement category - **Buy (Global-Manufacture in India)**. The Defence Acquisition Procedure ensures 50% indigenous content in procurement.
Establishment of Defence Industrial Corridors	Establishment of **two Defence Industrial Corridors in Uttar Pradesh and Tamil Nadu**
Priority to the procurement of capital items falling in the Buy Indian (IDDM) Category	Notification of four **'Positive Indigenization Lists'** of a total of 411 items of Services and three 'Positive Indigenization Lists' of a total of 3,738 items of Defence Public Sector Undertakings (DPSUs).
	Simplification of Industrial licensing process with longer validity period.
	Rationalized Defence Product List which required an Industry License.
	Launch of an indigenization portal namely **SRIJAN** to facilitate indigenisation by Indian Industry including Micro, Small and Medium Enterprises (MSME).
Financial Investments	**Increased Domestic Procurement Budget**: From 40% to 75% of the total capital procurement budget dedicated to domestic procurement.
	Increasing Private Contributions
DRDO	Review of Defence Research and Development Organisation (DRDO) and focus on building **"Fit to Purpose" capabilities**
Participation of Women	Initiatives like **Nari Shakti and the opening of Sainik Schools and the National Defence Academy to women** have significantly increased the participation of women in the armed forces.
Naval Platform Development	Development of naval platforms including projects like the INS Vikrant and Project 17A frigates.
Other Developments	**Launch of Mission DefSpace**

Issues with India's defence exports include:

1. **Failure to Convert Interest into Business Action**: Despite interest from countries like Indonesia, Malaysia, and others in products like **BrahMos and Akash missile** systems, India has struggled to translate this interest into concrete business deals.
2. **Inability to Secure Big Naval Defence Orders**: India has faced challenges in securing significant naval defence orders from countries such as Oman, Myanmar, Mauritius, and Vietnam.
3. **Lack of Competitiveness:** Indian defence products are often perceived as having lower quality and higher costs compared to major exporters like the US, Russia, and Israel.
4. **Limited Export Portfolio**: India's defence exports are restricted to a few countries and product categories, hindering its ability to fully tap into the global defence market.

5. **Bureaucratic Hurdles**: The defence export process in India involves bureaucratic hurdles and red tape, making it challenging for exporters to navigate.
6. **Unclear Policy:** India lacks a well-defined defence export policy, leading to confusion and uncertainty among potential exporters.
7. **Dependence on Imports:** Despite strides in indigenization, India still relies heavily on imports for its defence equipment, limiting its capacity to export advanced defence technology.

To boost its defence exports, India can focus on:

1. **Dedicated Export Infrastructure**: Establishing specialized infrastructure for training, market intelligence, and handholding of defence exporters, including training programmes for PSU officers and setting up a **dedicated Export Promotion Council for the Defence Sector**.
2. **Trade Support:** Providing dedicated support from regulatory agencies to streamline approval processes for production and export compliances, and facilitating participation in trade fairs, Buyer-Seller Meets, and knowledge-sharing platforms.
3. **R&D Infrastructure**: Exploring joint or co-development opportunities with other countries through the Department of Defence Production, and being open to sharing R&D infrastructure with potential buyers, such as offering fighter aircraft or rocket launcher systems developed through joint/co-development arrangements.

Conclusion

Self-reliance in defence manufacturing is significant not only for India's defence capabilities but also for ensuring sovereignty and security. Building a **private industrial base** with **proactive policies, funding RnD**, creating **low-interest regimes** to bring down capital costs, addressing **issues of exchange rates** and providing **stability** can help India's defence manufacturing sector become **globally competitive.**

Mains Link:

Q. Foreign Direct Investment (FDI) in the defence sector is now set to be liberalized: What influence this is expected to have on Indian defence and economy in the short and long run? (UPSC 2014)

Prelims Link:

Q. Consider the following in respect of the Indian Ocean Naval Symposium (IONS): (UPSC 2017)

1. The inaugural IONS was held in India in 2015 under the chairmanship of the Indian Navy.
2. IONS is a voluntary initiative that seeks to increase maritime cooperation among navies of the littoral states of the Indian Ocean Region.

Which of the above statements is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
Ans: B

Q. Which one of the following is the best description of 'INS Astradharini', that was in the news recently? (UPSC 2016)
(a) Amphibious warfare ship
(b) Nuclear-powered submarine
(c) Torpedo launch and recovery vessel
(d) Nuclear-powered aircraft carrier
Ans: C

Topics: Major crops cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.

2. CROP DIVERSIFICATION IN INDIA

Context:

West Bengal farmers are shifting from wheat cultivation to more lucrative options like bananas, lentils, and maize, especially in border districts like Murshidabad and Nadia.

Reasons Behind the Shift from Wheat Production:

1. **Wheat Blast Disease**: The emergence of wheat blast disease in Bangladesh in 2016 led to a two-year ban on wheat cultivation in border areas of West Bengal. This prompted farmers to explore alternative crops due to the severe yield losses caused by the fungal infection.
2. **Economic Viability:** Farmers have turned to alternative crops like bananas due to their higher profitability compared to wheat. Stagnant wheat prices and concerns over water consumption further incentivized the shift.
3. **Shift to Higher Output Crops**: Maize cultivation has surged in the area, with production increasing eightfold from 2011 to 2023. Despite lower prices per quintal compared to wheat, maize offers **higher per-hectare output and demand from poultry and food processing industries,** making it a lucrative alternative.
4. **Pulses and oilseed production** have also seen significant growth in the region.

Other reasons for this shift in West Bengal and other parts of India:

1. **Nutrient deficiency in soil:** Continuous cultivation of the same crops depletes specific nutrients

from the soil, leading to soil nutrient deficiency and decreased microfauna population**. Example**: Rice-wheat system in Northwestern India replacing traditional crops like pulses and oilseeds.

2. **Resource use efficiency**: Monocropping reduces resource-use efficiency. Introducing diverse crops and cropping patterns helps revive soil health and improve resource-use efficiency.
3. **Urbanization**: Increased food demand due to population growth and urbanization stresses agricultural land, leading to crop intensification and substitution of food crops with commercial crops.
4. **Infrastructure facilities**: Improved irrigation, transport, storage, and marketing facilities allow farmers to diversify towards more profitable crops.
5. **Government incentives**: Initiatives like Paramparagat Krishi Vikas Yojana and state government financial incentives encourage farmers to change cropping patterns.
6. **Erratic rainfall**: Sudden adverse weather conditions like erratic rainfall, drought, and pest outbreaks compel farmers to diversify their cropping patterns for risk mitigation.

What is Crop Diversification?

Crop diversification refers to the **practice of growing a variety of crops on a farm instead of focusing on just one or a few crops**. **Crop diversification** in India represents a **strategic shift** from the traditional **monoculture farming practices towards a more varied cultivation** approach. Through diversifying crops, farmers can **reduce dependency on a single crop**, thereby **increasing resilience against climatic and economic fluctuations**

Types of crop diversification:

Type of diversification	Nature of diversification	Potential benefit
Improved structural diversity	Makes crops within field more structurally diverse	Pest suppression
Genetic diversification in monoculture	Cultivation of mixture of varieties of same species in a monoculture	Disease suppression, Increased production stability
Diversify field with fodder grasses	Growing fodder grasses alongside of food/pulse/ oilseed/vegetables	Pest suppression, opportunity to livestock farming
Crop rotations	Temporal diversity through crop rotations	Disease suppression, Increased production
Polyculture	Spatial and temporal diversity of crops	Insect, pest disease suppression, climate change buffering
Agro-forestry	Growing crops and trees together	Pest suppression and climate change buffering
Mixed landscapes	Development of larger-scale diversified landscapes through mixture of crops and cropping system with multiple ecosystems	Pest suppression, climate change buffering and increased production stability
Micro-watershed based diversification	Integration of crop with other farming components for year round income and employment generation, besides sustaining soil	Insect, pest and disease suppression, climate change buffering and increased production, employment and income

The trend of crop diversification in India:

- **Towards Cash crops:** e.g., growing more cash crops like fruit and vegetables instead of food grains**.**
- **Shifted to horticulture:** Since good inputs (seeds and know-how) are available, farmers are growing horticultural crops along with or as an alternative to food grains.
  - **India produces 10% of the world's production of fruits** and holds the first place in the case of fruits like papaya, mango, and banana, among others.
- **Water intensive to water efficiency patterns:** Some water intensive Food grains (paddy) and cash crops (such as sugarcane) losing interest in favour of water-efficient crops or pulses and oil seeds.
  - These are not only water-efficient but also climate-resilient.
- **Organic farming:** Many regions of the country have also seen an increase in cropping area under organic farming. States like **Sikkim** have become fully organic states.
- **ZBNF:** Many states like **Maharastra, and Telangana** are promoting Zero Budget Natural farming, under it use of chemicals for growing crops is discouraged.

Significance/Benefits of Crop Diversification in India:

Significance	Description
For farmers	**Income Stabilization:** In Karnataka, the cultivation of millets, alongside traditional crops, has provided farmers with an alternative income source, buffering them against the price volatilities of mainstream crops.
	Market Demand Fulfillment: By growing organic produce in Sikkim, farmers are tapping into the growing market demand for organic food, both domestically and internationally, ensuring higher profitability.
	Reduced Price Dependency: Farmers in Tamil Nadu diversifying into pulses and oilseeds have found these crops to be less subject to international price fluctuations than cash crops like cotton and sugarcane.
	Alternative Market Channels: In Kerala, diversification into spice crops like turmeric and ginger has opened up new market channels, including export markets, offering farmers lucrative alternatives.

Environment	**Reduced chemical use** benefits the environment.
	Pest and Disease Management: Intercropping can reduce the need for chemical pesticides, promoting natural pest control.
	Availability of water: Promotes efficient water use, reducing irrigation demands.
	Soil Health Improvement: Planting leguminous crops improves soil fertility, benefiting subsequent crops.
Government	Improves food security and nutrition, reducing malnutrition and anaemia.
	Enhances socio-economic status through quality food production.
Trade	Reduces import dependence, particularly for pulses and oilseeds, benefiting the economy.
	Market Opportunities: Diversifying into niche markets, like organic farming, can lead to higher prices for produce.
	Source of Biofuels: Crops like Jatropha and Pongamia can be used for biofuel production, offering additional income streams for farmers and contributing to energy security
Risk Reduction	Diversification helps in mitigating the impact of adverse weather conditions, such as drought, by ensuring some level of harvest.

Government Initiatives for Crop Diversification

1. **National Food Security Mission (NFSM):** Encourages farmers to **grow pulses and oilseeds** in addition to cereals.
2. **Pradhan Mantri Krishi Sinchai Yojana (PMKSY):** Focuses on **improving water use efficiency** through **micro-irrigation,** supporting the cultivation of less water-intensive crops.
3. **Paramparagat Krishi Vikas Yojana (PKVY):** Promotes **organic farming,** facilitating **diversification into high-value organic crops.**
4. **Rashtriya Krishi Vikas Yojana (RKVY):** Provides **flexibility and autonomy to states** to prioritize their agriculture and allied sector investments, including diversification efforts.
   - 4.1. **Crop Diversification Programme (CDP),** a sub-scheme of Rashtriya Krishi Vikas Yojana (RKVY) is being implemented in the **Original Green Revolution States** viz; **Haryana, Punjab & Western Uttar Pradesh** since 2013-14 to **divert the area of water-intensive paddy crop to alternative crops** like pulses, oilseeds, coarse cereals, Nutri cereals etc
5. **Mission for Integrated Development of Horticulture (MIDH):** Aims at holistic growth of the **horticulture sector,** encouraging farmers to **diversify into horticultural crops.**
6. **Mera Pani-Meri Virasat Scheme (Haryana):** Provides financial aid to farmers transitioning from paddy cultivation to water-saving alternatives such as pulses, oilseeds, millets, and vegetables.

Challenges with the Crop Diversification in India:

1. **Market Risks and Limited Opportunities**: Farmers may hesitate to switch from established crops like rice and wheat due to fluctuating market prices and limited demand for alternative crops, potentially leading to income loss.
2. **Financial Constraints**: Diversifying crops requires additional investment in seeds, equipment, and knowledge, which smallholder farmers may lack. Creating a market for nutritious crops like millet also requires investment in processing facilities.
3. **Lack of Infrastructure and Storage**: Perishable diversified crops need specialized storage and transportation facilities, which are often lacking in rural areas. Without proper infrastructure, there's a risk of spoilage, resulting in wasted produce and lost income.
4. **Clash With Dietary Habits**: Crop diversification could disrupt established market dynamics and consumption patterns in regions where rice and wheat are staple foods, potentially affecting market acceptance and farmer livelihoods.

The way forward and Conclusion:

Moving forward, India can explore innovative approaches to promote crop diversification and sustainable agriculture. One such avenue is **agri-tourism and 'U-Pick' farms**, where tourists can engage in experiential agriculture by harvesting fruits and vegetables directly from the fields. This not only offers farmers additional income but also **fosters a connection between consumers and agriculture**, promoting appreciation for diversified crops.

Moreover, advancements in gene editing techniques like CRISPR present an opportunity for **biofortification**, enhancing the nutritional value of crops to address malnutrition concerns and open new markets for biofortified produce.

Additionally, **integrating regenerative agriculture practices such as cover cropping, composting, and no-till farming** with diversified crop rotations can contribute to sustainable diversification. These practices not only improve long-term crop yields but also sequester carbon,

mitigating the impacts of climate change on agriculture.

Mains Links:

Q. How did India benefit from the contributions of Sir M. Visvesvaraya and Dr. M.S. Swaminathan in the fields of water engineering and agricultural science respectively? (UPSC 2019)

Q. Explain various types of revolutions, that took place in Agriculture after Independence in India. How have these revolutions helped in poverty alleviation and food security in India? (UPSC 2017)

Topics: Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention.

3. PREVENTION OF MONEY LAUNDERING ACT (PMLA): IMPORTANCE AND CONCERNS

Context:

The article discusses the Prevention of Money Laundering Act (PMLA), which was **initially aimed at combating the laundering of drug money** but has expanded to include various unrelated offences over time.

Recently, the P**unjab and Haryana High Court clarified that courts can release an accused of money laundering from police custody** without fulfilling the conditions mandated by the Prevention of Money Laundering Act (PMLA), 2002

What is Money Laundering?

Money laundering is a process used to **hide the origins of illegally obtained money**, making it appear legitimate. It involves three stages:

1. **Placement**, where illicit funds enter the financial system
2. **Layering**, where funds are moved through complex transactions to conceal their source
3. **Integration**, where laundered funds are reintroduced as legitimate.

Methods include structuring, trade-based laundering, shell companies, and real estate transactions.

About PMLA:

Need for Prevention of Money Laundering Act (PMLA):

Global Urgency: Prompted by global concerns over **drug trafficking,** the PMLA was enacted to prevent the laundering of proceeds from drug crimes, in line with UN conventions.

1. **Establishment of FATF**: Following the establishment of the Financial Action Task Force (FATF) in 1989, measures like the PMLA were adopted to combat money laundering worldwide.
2. **UNGA Resolution:** A 1990 resolution by the UN General Assembly emphasized the need for legislation to **prevent drug money laundering,** prompting India to enact the PMLA.
3. **Narasimham Committee Recommendations**: Recommendations from the Narasimham Committee highlighted the necessity of addressing money laundering within India's financial system, contributing to the formulation of the PMLA.
4. **Adherence to International Standards:** The PMLA aligns with international standards and recommendations, ensuring India's compliance with global efforts to combat money laundering.

5. **Legislative Authority and Scope**: Enacted under **Article 253 of the Constitution** (it empowers the government to make laws for implementing the international conventions), the PMLA enables India to remain in alignment with world standards on Money Laundering.

Amendment to PMLA: Recently in **2023,** the Finance Ministry amended the Prevention of Money Laundering Act (PMLA) and rules in line with the recommendations of the **FATF.**

Recent amendments made to the Prevention of Money Laundering Act (PMLA):

- **Defines PEPs (Politically Exposed Persons):** Individuals who have been entrusted with prominent public functions by a foreign country, thereby bringing Indian **legal uniformity** in line with FATF norms
- **For Cryptocurrencies**: Virtual digital assets (VDA) trade has been brought under PMLA.
    - New rules mandate **crypto exchanges and intermediaries** dealing in virtual assets to maintain the **KYCs of their clients** and **report suspicious transactions** to financial intelligence units.
- **Due diligence documentation requirements:** It has now been extended. It now includes the submission of details such as **names of persons holding senior management positions, names of partners, etc.**
- **Beneficial Owners':** Lowered the threshold for identifying beneficial owners by reporting entities, where the client is acting on behalf of its beneficial owner.
    - The term 'beneficial owner' refers to those with the entitlement of **more than 25%** of shares or capital or profit of the company, which has now been **reduced to 10%.**
- **NPOs:** Reporting entities are now required to **register details of the client** if it's a non-profit organization (NPO) on the **DARPAN portal** of **NITI Aayog.**
- **Clarification on Proceeds of Crime**: Proceeds of Crime now encompass not only property derived from scheduled offences but also from any criminal activity related or similar to the scheduled offence.
- **Redefined Money Laundering**: Previously dependent on a predicate or scheduled offence, money laundering is now treated as a distinct standalone crime through an amendment.

Crucial Role Played by PMLA:

Role	Examples
Legal Framework	The PMLA provides a **legal basis for investigating and prosecuting cases** such as the **2G spectrum scam** and the **AgustaWestland case**
Asset Seizure and Confiscation	Enforcement agencies, under the PMLA, have seized assets worth millions of dollars in cases like the **Nirav Modi and Vijay Mallya frauds**
International Compliance	India's adherence to FATF recommendations, as mandated by the PMLA, has facilitated international cooperation in cases like the **Panama Papers scandal**
Financial Intelligence Unit (FIU) Coordination	The FIU-India, established under the PMLA, coordinates with law enforcement agencies to analyze financial data and detect suspicious transactions, contributing to successful prosecutions in cases like the **HSBC black money probe**
Monitoring Financial Transactions	**Mandatory reporting of high-value transactions by banks** under the PMLA has led to the detection of suspicious activities, as seen in cases like the **INX Media money laundering case**
Enhanced Due Diligence	Banks and financial entities, under PMLA regulations, conduct **rigorous KYC checks to prevent money laundering e.g., PMC Bank scam**
Establishing the Source of Funds	Through PMLA investigations, authorities have been able to establish the source of illicit funds, as seen in cases like the **Saradha chit-fund scam**
Deterrent to Criminals	High-profile convictions, such as in **the Satyam scam**, serve as examples of the deterrent effect of PMLA enforcement.

Challenges with PMLA Enforcement:

1. **Definition of "Proceeds of Crime":** Some argue it's overly broad, risking the inclusion of lawful transactions.
2. **Inclusion of Non-Drug Offences**: PMLA encompasses offences beyond its original focus, diluting its purpose.
3. **The burden of Proof on Accused**: Critics find the burden of proof unreasonably high, potentially impacting fair trials.
4. **Concerns of Overreach**: E.g., Opposition political parties have alleged misuse of PMLA by ED to arrest party authorities **including the sitting CM of Delhi**
5. **Stringent Bail Conditions**: In 2018, the Supreme Court found aspects of the PMLA bail provision **unconsti-**

tutional in Nikesh Tarachand Shah vs Union of India, citing violations of **Articles 14 and 21**.

a. However, in **2022, the Court upheld the validity of key provisions** empowering the Enforcement Directorate (ED) to arrest, conduct searches, seizures, and attach proceeds of crime.

6. **Lack of Written Communication for Arrest**: Arrests without written communication violate constitutional rights. Challenges in PMLA Enforcement:
7. **Complex Legal Procedures**: Legal intricacies can lead to delays and inefficiencies in prosecution.
8. **Inadequate Training and Resources**: Enforcement agencies may lack the necessary resources for effective implementation.

Reforming PMLA, 2002: Key Suggestions

1. **Parliamentary Committees:** Recommended periodic reviews and amendments to the PMLA to address emerging challenges and ensure its relevance and effectiveness.
2. **Refinement of "Proceeds of Crime" Definition**: Define "Proceeds of Crime" precisely to avoid ambiguity.
3. **Reassessment of Burden of Proof**: Evaluate the burden of proof, ensuring fairness and constitutional rights.
4. **Safeguards Against Officer Overreach**: Establish oversight to monitor law enforcement actions.
5. **Review of Stringent Bail Conditions**: Streamline bail procedures without compromising investigations.
6. **Periodic Review and Amendment:** Establish a mechanism for periodic review and amendment of PMLA.
7. **Enhanced Independence and Transparency of ED**: Improve reporting and disclosure of ED activities.
8. **Public Awareness and Education**: Conduct campaigns to educate the public on PMLA's purpose and procedures.
9. **Consultative Approach:** Engage in open dialogues to address concerns and gather diverse perspectives.

Conclusion:

The **PMLA serves** as a critical tool in India's arsenal against money laundering. However, to fully leverage its potential, **addressing the challenges** in its implementation is **essential**. **By strengthening the framework and execution of the PMLA**, India can more **effectively combat the complex and evolving nature of money laundering.**

Insta Links:

- **EDITORIAL ANALYSIS: Questionable searches under the Money Laundering Act**

Mains Link:

Q. Discuss how emerging technologies and globalization contribute to money laundering. Elaborate measures to tackle the problem of money laundering both at national and international levels. (UPSC 2021)

GENERAL STUDIES – 4

1. EXAMPLES OF ETHICS

Example 1: Ban on Diversity Programs in the US

Context:

Many U.S. universities have ended diversity programs, impacting minority students.

What are Diversity Programs?

Diversity programs in US universities **aim to address inequalities by giving special consideration to minority students**, such as Black, Indian American, Hispanic, and Native American students. These programs include initiatives like affirmative action in admissions, **race-based scholarships, and diversity, equity, and inclusion (DEI) programs**. They seek to promote diversity and provide opportunities for underrepresented groups in higher education.

Ethical issues concerned here are:

1. **Equal Opportunity vs. Meritocracy:** The debate over whether affirmative action and diversity programs promote equal opportunity for minority students or undermine the principle of meritocracy
2. **Academic Freedom vs. Ideological Control**: The restrictions and bans on diversity, equity, and inclusion (DEI) programs raise concerns about academic freedom and the imposition of ideological control over educational institutions
3. **Ethical Responsibilities of Institutions**: Universities and educational institutions grapple with their ethical responsibilities to promote diversity, equity, and inclusion
4. **Ethical implications of rolling back diversity** initiatives prompt questions about societal moral obligations to address systemic racism and promote equity.
5. **Systemic Inequality**: The long-standing inequalities faced by minority students in higher education, including disparities in access to resources, opportunities, and representation

Example 2: Sending Indian Workers to Conflict Zone

Context:
The first batch of **64 Indian construction workers from Haryana and Uttar Pradesh** is heading to Israel amid the Gaza war. Israeli construction industry requested **100,000 Indian workers** to replace Palestinians.

The NSDC International **(with 49% government ownership),** facilitates Indian workers' mobility to Israel under a **Government-to-Government agreement**

Advantages:

1. **Economic Opportunity**: Indian workers have access to higher wages in Israel compared to their home country, providing economic opportunities for them and their families.
2. **Skill Development**: Workers gain valuable skills and experience through international work, potentially improving their long-term employability and earning potential.
3. **Diplomatic Relations:** Facilitating the movement of workers between India and Israel strengthens diplomatic ties and promotes cooperation between the two nations.
4. **Meeting Labour Demand:** Israel's construction industry benefits from the influx of skilled labour to fill gaps created by the cancellation of Palestinian work permits.

Ethical Concerns:

1. **Safety and Security**: Sending workers to a conflict zone raises concerns about their safety and well-being amid ongoing violence and instability.
2. **Exploitation**: There's a risk of workers from outside Israel being mistreated or exploited, particularly if they lack adequate legal protections or support systems.
3. **Moral Dilemmas:** Workers may face ethical dilemmas when witnessing or being exposed to violence, suffering, or human rights abuses, potentially leading to psychological trauma.
4. **Displacement of Local Workers**: Importing foreign labour may negatively impact local Palestinian workers by reducing job opportunities or driving down wages in the region's labour market.

A framework agreement ensures the safety of Indian workers in Israel:

1. Indian workers receive equal labour rights as Israeli citizens.
2. They are provided with proper lodging, medical insurance, social security coverage, and lawful wages and benefits.

Example 3: Fali S Nariman

Fali S Nariman's legal career spanned 74 years, during which he played a pivotal role in shaping Indian constitutional law. Known for his unwavering principles, Nariman was not only a successful lawyer but also a moral guide to governments, the judiciary, and the legal fraternity

Ethical lessons from his life:
Fali S Nariman exemplified ethical values throughout his career, demonstrating **integrity, courage, and accountability**. One notable example is his **acknowledgement of past errors**, such as **defending Union Carbide after the Bhopal tragedy**. Despite the professional ramifications, Nariman had the courage to admit his mistake, showcasing his commitment to ethical conduct over personal gain.

Additionally, his principled stands during critical junctures, such as **resigning from the post of Additional Solicitor General during the Emergency** and returning the brief of the Gujarat Government in protest against attacks on the Christian community, underscored his unwavering commitment to upholding **ethical principles in the face of adversity**.

Example 4: Living Will

Context:
Recently, **30 people in Thrissur in Kerala** have executed living wills.

What is a Living Will?
A living will is **a legal document that allows individuals to outline their preferences for medical care or the termination of medical support** in situations where they are unable to make those decisions themselves. It details their wishes regarding treatments, life-sustaining measures, and end-of-life care, ensuring that their desires are respected and followed by healthcare providers and family members.

The Supreme Court's 2018 ruling affirmed the **right to die with dignity** and eased procedures for creating living wills.

Ethical Issues with Living Will:

1. **Autonomy vs. Accuracy**: While living will **uphold individual autonomy** by allowing people to express their healthcare preferences, there may be concerns about the **accuracy of these preferences over time** or whether they truly reflect the individual's wishes at the time of decision-making.
2. **Interpretation Ambiguity**: Instructions in living wills can lead to disagreements.
3. **Emotional Challenges**: Creating a living will can be emotionally difficult for individuals and fami-

lies.

4. **Cultural and Religious Conflicts**: Living wills may clash with cultural or religious beliefs.
5. **Legal Framework Variability**: Laws surrounding living will vary, posing fairness and accessibility concerns.
6. **Quality of Life Assessments**: Deciding on life-sustaining treatments raises subjective quality of life issues.

Different countries have varying laws regarding euthanasia and assisted suicide:

1. **NETHERLANDS, LUXEMBOURG, and BELGIUM** permit both euthanasia and assisted suicide for individuals experiencing "unbearable suffering" with no chance of improvement.
2. **SWITZERLAND** prohibits euthanasia but permits assisted dying in the presence of a doctor or physician.
3. **CANADA** initially allowed euthanasia and assisted dying for mentally ill patients, but this decision has faced widespread criticism.
4. **The US** has diverse laws across states, with euthanasia permitted in some, such as Washington, Oregon, and Montana.
5. **The UK deems euthanasia illegal** and considers it equivalent to manslaughter.

To know more about the Legal aspect of Living Will Click Here

CONTENT FOR MAINS ENRICHMENT

Context	Usage
1. EMPATHIC VOICE INTERFACE (EVI)	**Context:** Hume AI has developed the **world's first conversational AI with emotional intelligence,** named **Empathic Voice Interface (EVI).** • This technology **can interpret human emotions and respond with empathy**, aiming to **enhance human well-being.** • Powered by an **empathic large language model (eLLM)**, EVI understands **tones of voice and word emphasis to optimize interactions.** • Its integration capability allows it **to power various applications, potentially revolutionizing fields like AI assistants, customer support, and therapy** The ethical values of the company named after **philosopher David Hume** revolve around building AI that **prioritizes human goals and emotional well-being.** This approach is guided by the **recognition that emotions play a crucial role in driving human choices and overall well-being.** By focusing on these principles, the company seeks to develop AI systems that **not only understand human emotions but also work to enhance them, ultimately contributing to a more ethically grounded and human-centric approach to artificial intelligence development**
Bilingual Braille at Polling Booths	**Context:** Bilingual Braille signage in **English and Tamil** will be available at all **polling stations across 30 Assembly constituencies** in the Puducherry Union Territory for the upcoming Lok Sabha election. This initiative aims to **facilitate visually-impaired voters** in casting their ballots independently. The Braille signage will contain candidate details, allowing voters to easily identify and vote for their chosen candidate. Additionally, **visually impaired voters** have the option to bring a companion if they prefer**, as per Rule 49N of the Conduct of Elections Rules, 1961.** **Ethical values depicted in the scenario:** 1. **Inclusivity**: Braille signage ensures equal access to voting. 2. **Empathy**: Independent voting options show understanding for visually impaired voters. 3. **Transparency**: Clear Braille signage enhances electoral process clarity. 4. **Accountability**: Officials ensure support for visually impaired voters. 5. **Respect**: Accommodations reflect dignity and autonomy.

Innovative Taxes

Context: Toronto's latest tax innovation, the **'stormwater charge,'** aims to tackle urban flooding by penalizing properties with excessive concrete.

Type	Tax	Description
Historical Unusual Taxes	**Russia's Beard Tax**	In 18th-century Russia, a tax was levied on beards to **encourage a more Western, clean-shaven appearance.**
	Britain's Window Tax	In the same era, British homes were taxed based on the **number of windows, a strategy aimed at the wealthy**
Modern Unusual Taxes	**Toronto's 'Stormwater Charge'**	This proposed tax in Toronto is based on the **ratio of permeable to impermeable surfaces** on properties, intending to mitigate flooding.
	Switzerland and Germany's Dog Tax	Depending on the **breed and weight of the dog**, owners can be taxed differently, with larger breeds like Bull Terriers and Great Danes incurring higher taxes.
	Sweden's Baby Name Tax	A tax is imposed on families **choosing names that are deemed confusing, offensive, or hard to pronounce,** such as the case of a family who named their daughter Metallica.

These taxes serve diverse purposes: **influencing behaviour, raising funds, promoting social norms**, targeting specific groups, and regulating choices.

FACTS FOR PRELIMS

GS-1

1. MOHINIYATTAM

Context: The **Kerala Kalamandalam**, a prestigious cultural institution, **has announced a significant policy change allowing male dancers to learn Mohiniyattam,** a classical dance form previously reserved exclusively for women.

2. 100 YEARS OF VAIKOM SATYAGRAHA

Context:
The Vaikom satyagraha, **initiated in 1924 in Vaikom, Travancore**, marked the beginning of **temple entry movements in India**

About	Description
Vaikom Satyagraha (March 30, 1924 to November 23, 1925)	It was a **historic non-violent movement against untouchability and caste discrimination in the country**. It marked the start of temple entry movements across India.
Issue	The **Kingdom of Travancore had a rigid and oppressive caste system**, and the people belonging to the oppressed classes, **especially the Ezhavas, had no right to walk on the four roads** surrounding the Vaikom Mahadeva temple (District: Kottayam, Kerala)
Leaders	Spearheaded by Congress leader **T.K. Madhavan; K.P. Kesava Menon (then secretary of Kerala Congress) and Congress leader and educationist K. Kelappan (also known as Kerala Gandhi**)
The course of the Movement	The Congress Untouchability Committee decided to start the movement at the **Mahadeva temple in Vaikom**. On March 30, 1924, volunteers from three different communities were sent to walk on the prohibited roads each day.
Support to the Movement	**'Periyar' E.V. Ramasamy** was requested to lead the campaign
	Members of forward castes marched from Travancore to the royal palace at Thiruvananthapuram, in a show of solidarity for the social reform
	Akalis (Sikhs) from Punjab gave their support by opening a community kitchen (langar) for the volunteers
	Chattampi Swamikal and Sree Narayana Guru gave support to the movement.
	Mahatma Gandhi arrived at Vaikom in March 1925 to arrive at a compromise and settle the issue once and for all.
The success of the Movement	• **Oppressed castes were given the right to move on public roads** in the vicinity of all temples in Travancore. • The movement paved the way for the **historic Temple Entry Proclamation (1936)** by the Maharaja of Travancore, which lifted the age-old ban on the entry of marginalized castes into Travancore temples. • It was one of the most **non-violent struggles against caste oppression and discrimination.**

3. GI TAGS GRANTED TO 60 PRODUCTS

Context:
Over 60 products from across India have received **Geographical Indication (GI) tags**, marking the largest batch of GI tags awarded at once.

Some of the Major products GI tagged are:

Region	Product	Description
Assam	**Asharikandi Terra-cotta Craft**	Asharikandi Terracotta Craft refers to a **traditional craft form practised in the village of Asharikandi in Assam**. It involves the creation of pottery and other decorative items using locally sourced terracotta clay. 
	Pani Meteka Craft	It refers to a type of traditional craft that involves **weaving straw or reeds** into decorative objects such as baskets, hats, and ornaments. 
	Sarthebari Metal Craft	Exquisite metalwork, particularly in brass and bell metal. 
	Jaapi (Bamboo Headgear)	Traditional Assamese hat made from bamboo and leaves. 
	Mishing Handloom Products	Textiles woven by the Mishing community

	Bihudhol	Traditional drum used in Assam's Bihu celebrations. 
	Bodo Dokhona	Traditional attire of Bodo women. 
	Bodo Eri Silk	Fabric made from the silk of Samia ricini, known as the fabric of peace.
	Bodo Jwmgra	A traditional scarf is part of Bodo culture. 
	Bodo Gamsa	The traditional dress worn by Bodo men. 

	Bodo Thorkha	Musical instruments are integral to Bodo culture. 
	Bodo Sifung	Long flute used in Bodo music. 
Varanasi	**Banaras Thandai**	Traditional drink made with milk, nuts, seeds, and spices. 
	Banaras Tabla	Percussion instrument rooted in Banaras' musical tradition. 

	Banaras Shehnai	Wind musical instrument synonymous with Banaras' cultural ethos. 
	Banaras Lal Bharwa-mirch	A specific variety of stuffed red chilli is typical of Banaras. 
	Banaras Lal Peda	A sweet delicacy made from condensed milk, famous in Banaras. 
Tripura	**Pachra-Rignai**	Traditional dress is worn by women in Tripura on special occasions. 
	Matabari Peda	Sweet preparation is unique to the Matabari area in Tripura. 

Meghalaya	**Garo Textile Weaving**	Textiles woven by the Garo community, incorporating traditional motifs and techniques. 
	Lyrnai Pottery	Traditional pottery from the Lyrnai area, known for its distinctive style and utility (also called Black Pottery of Meghalaya) 
	Chubitchi	Alcoholic beverage. 

About GI Tags:

A Geographical Indication (GI) is a **designation used on products with a specific geographical origin**, indicating qualities or reputation linked to that origin. To date, around **635 products in India** have been given the GI tag. The **first GI tag** in the country was given two decades ago to the famous **Darjeeling tea**.

Internationally recognized **under the Paris Convention**, GI is part of **Intellectual Property Rights (IPRs)**, covered by the **WTO's TRIPS Agreement**, **Madrid Agreement**, and **Lisbon Agreement**.

In India, GI registration is governed by the **Geographical Indications of Goods (Registration and Protection) Act of 1999**. Administered by the Registrar of Geographical Indications (RGI), it identifies **agricultural, natural, or manufactured goods**, providing legal protection **for 10 years (**renewable). The **Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry,** oversees GI registration, offering protection against unauthorized use, promoting exports, and ensuring quality and distinctiveness.

4. ATOMIC CLOCKS

Context: India is deploying **atomic clocks nationwide to synchronize all digital devices with Indian Standard Time**, enhancing uniformity and national security.

About Atomic Clocks:

Topic	Information
Atomic Clock	An atomic clock is a **highly accurate timekeeping device** that combines a **quartz crystal oscillator with an atom**, typically caesium or hydrogen, to measure time precisely. It uses the consistent frequency of atoms to maintain accurate time, making it more stable than conventional quartz clocks.
	It was **Invented in 1955 by Louise Essen**. It combines a quartz crystal oscillator with an atom for precise timekeeping.
Types of Atomic Clocks	**Caesium and hydrogen maser** atomic clocks
	Hydrogen maser clocks are more accurate and used in scientific research.
Working	**Quartz crystal oscillators** are commonly used in modern clocks, vibrating at a precise frequency when voltage is applied. However, they become **slightly slow every hour** and require frequent adjustments.
	Atomic clocks are like super accurate timekeepers. They use special atoms, usually **caesium atoms**, which vibrate at a very steady rate. By sending **microwaves** to these atoms, we can make them vibrate **even more regularly**. Then, we compare these vibrations with the **vibrations of a quartz crystal in a regular clock**. The most advanced atomic clocks **lose just one second every 300 billion years**.
Atomic Clocks in India	**Council of Industrial and Scientific Research(CSIR)-National Physical Laboratories (NPL)** New Delhi maintains Indian Standard Time with caesium and hydrogen maser clocks.
	CSIR-NPL are now setting up new atomic clocks in **Bhubaneswar, Jaipur, and Hyderabad**, in addition to the existing ones in **Faridabad and Ahmedabad**. By June, these new clocks will be installed, and the government will require all device manufacturers to **sync with Indian Standard Time**.
	Currently, **timekeeping relies on satellites**, but the government aims to connect all atomic clocks using optical cables for enhanced security.
Implementation	By the **Ministry of Consumer Affairs and NPL**. It will ensure "one nation, one time" by June this year.
Need for Indigenous Atomic Clocks	**Ensures national security and independence** in timekeeping.
	During the Kargil War in 1999, the **US turned off GPS** for the Indian Army, causing location inaccuracies. This prompted India to develop its own precise clock.
	At present, most software operating modules, such as Windows and Android, rely on **US-based Network Time Protocol servers**.
	Only four countries—the United States of America, The United Kingdom, Japan and South Korea—have developed their atomic clocks
Indian Standard Time (IST)	Indian Standard Time (IST) was adopted on **September 1, 1947**, with only one-time zone for the whole country. It is calculated from **82.5 degrees East longitude**, near Mirzapur (Allahabad, UP). IST **is 5.5 hours ahead** of Greenwich Mean Time (GMT)

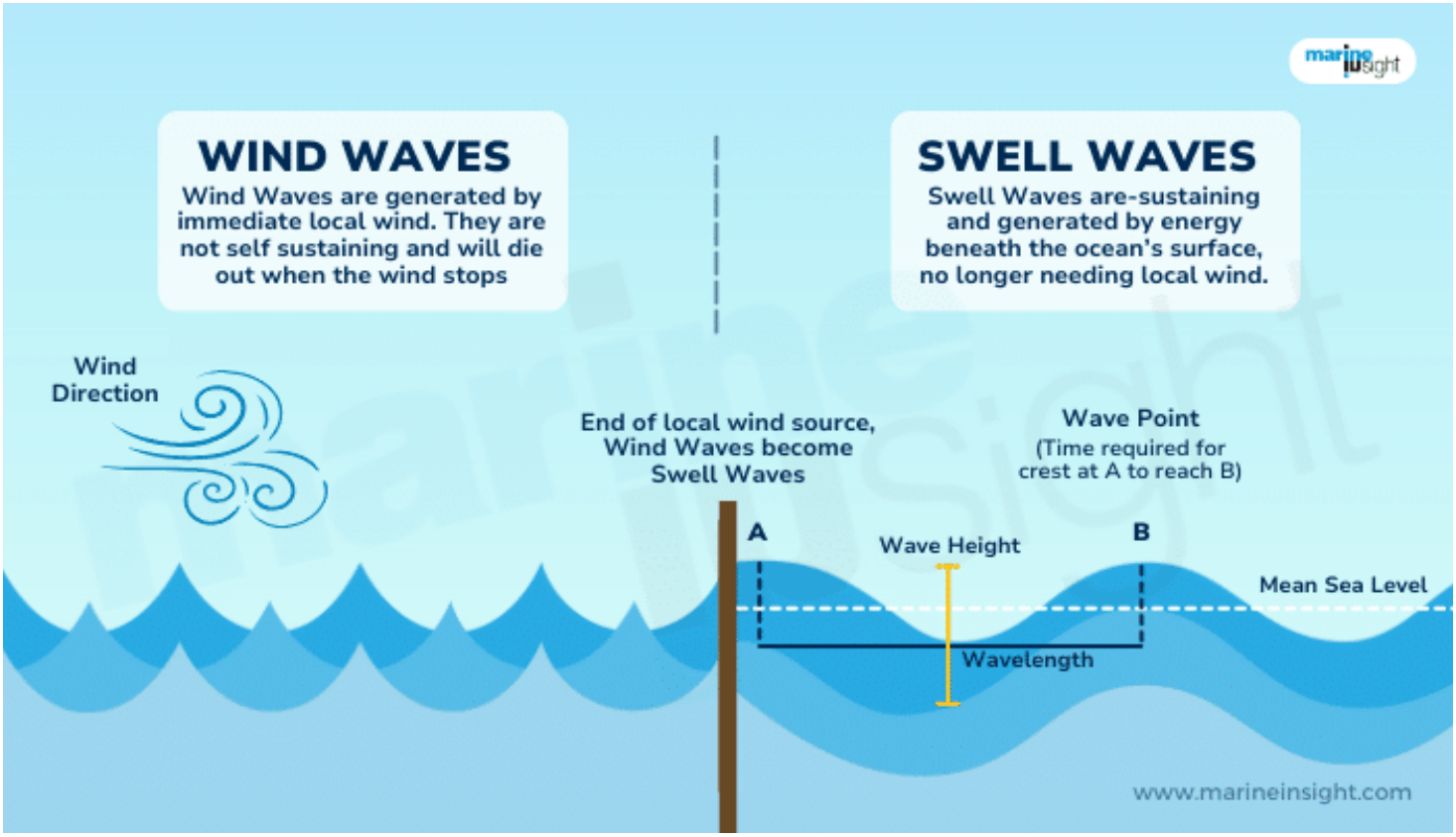
5. SWELL WAVES

Context:

Coastal areas **in southern and central Kerala** experienced **inundation from swell waves,** locally known as **'Kallakkadal,'** prompting **alertness from disaster management authorities.**

- The **phenomenon is not common for this time of the year**, as noted by the fishing community.

Swell waves refer to **ocean waves that have travelled over long distances** from their area of origin, usually generated by **distant weather systems or storms**.
These waves typically have a **consistent and smooth appearance** and **can travel thousands of kilometres across the ocean's surface without breaking.**
Swell waves are a significant factor in **shaping coastal areas and can cause inundation and erosion when they reach shore.**



6. NEGATIVE LEAP SECOND

Context:

A recent study suggests that the **accelerated melting of glaciers and ice sheets in Greenland and Antarctica** due to climate change is affecting Earth's **rotation, potentially postponing the need for a "negative leap second"** to keep **clocks aligned with Coordinated Universal Time (UTC).**

- As the redistribution of liquid from melting ice slows down Earth's rotation, the **previously anticipated implementation of the negative leap second in 2026 may be delayed until 2029 or later**.

A negative leap second refers to **a proposed adjustment to Coordinated Universal Time (UTC)** where **one second would be subtracted from the standard timekeeping system**.

This adjustment was **intended to compensate for the Earth's gradually increasing rotational speed**, which would make days slightly shorter over time.

It is opposite of **positive leap second (one-second addition to clocks).** It is done when length of day is rising (Earth is spinning more slowly).

7. 125 YEARS OF KODAIKANAL SOLAR OBSERVATORY

Context:

The 125th anniversary of Kodaikanal Solar Observatory (KSO) was celebrated **recently on April 1, 2024**, by the **Indian Institute of Astrophysics (IIA)**

Aspect	Description
What is Kodaikanal Solar Observatory (KoSO)?	It is an observatory **owned and operated by the Indian Institute of Astrophysics**. Established in **1899**, it is located in **Kodaikanal**, Tamil Nadu, and focuses on solar studies

Need for such an observatory	**The great Drought of 1875-1877** emphasized the **need for solar studies** to understand weather patterns. India's geographical significance further underscores the importance of such research, given its impact on global weather.
Origin	The concept originated in the late 19th century. **Solar Physics Observatory** was approved in August 1893. The foundation stone was laid by **Lord Wenlock in 1895. March 14, 1901**, marked the commencement of systematic observations
Location	**Palani Hills of Tamil Nadu**
	The place was chosen due to its **favourable atmospheric conditions and high-altitude, dust-free environment**. These factors provide clear and stable viewing conditions for solar observations, making it an ideal site for studying the Sun's activities and phenomena.
Instruments at KoSO	Initially focused on sunspots, prominences, and solar radiation. Advanced instruments include the **H-alpha telescope** and the **White Light Active Region Monitor (WARM)**
Significant achievements of KoSO	Identified the **Evershed Effect** (a phenomenon observed in sunspots where gas flows radially outward from the centre of the sunspot)
	Expanded research scope to cosmic rays, radio astronomy, ionospheric physics, and stellar physics
About the Indian Institute of Astrophysics	Indian Institute of Astrophysics (founded in 1971; HQ: Bengaluru), is an **autonomous research institute** wholly funded by the **Department of Science and Technology**. IIA conducts research primarily in the areas of astronomy, astrophysics and related fields
About Kodaikanal	Kodaikanal is a **hill town in the southern Indian state of Tamil Nadu.** It's set in an area of granite cliffs, forested valleys, lakes, waterfalls and grassy hills.

8. 5,200-YEAR-OLD HARAPPAN SETTLEMENT

Context:

Archaeologists, have unearthed **a 5,200-year-old Harappan settlement at Padta Bet in Gujarat's Kachchh district,** near the **Juna Khatiya necropolis.**

- The excavation revealed **evidence of Early Harappan to Late Harappan period occupation**, including **pottery, artefacts, animal bones, and structural remains**.
- Unique ceramics suggest a **local pottery tradition**, while the **site's strategic location atop a hillock** offered a commanding view of the **surrounding landscape and access to water from a nearby stream.**
- Artefacts such as **semi-precious stone beads, tools, and animal bones indicate animal domestication and shellfish exploitation.**

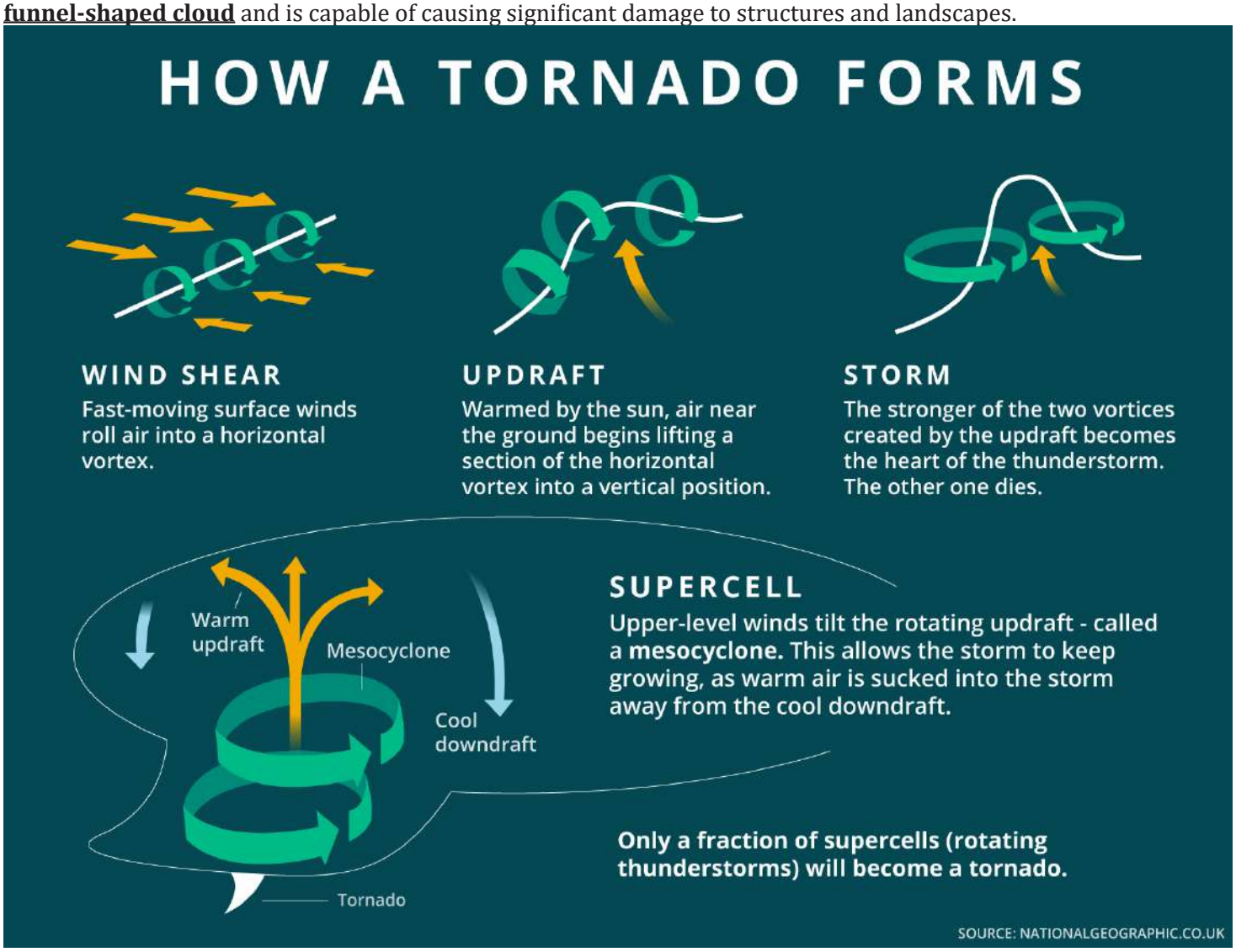
9. IMD WARNS OF MORE TORNADOES IN THE BAY OF BENGAL

Context:

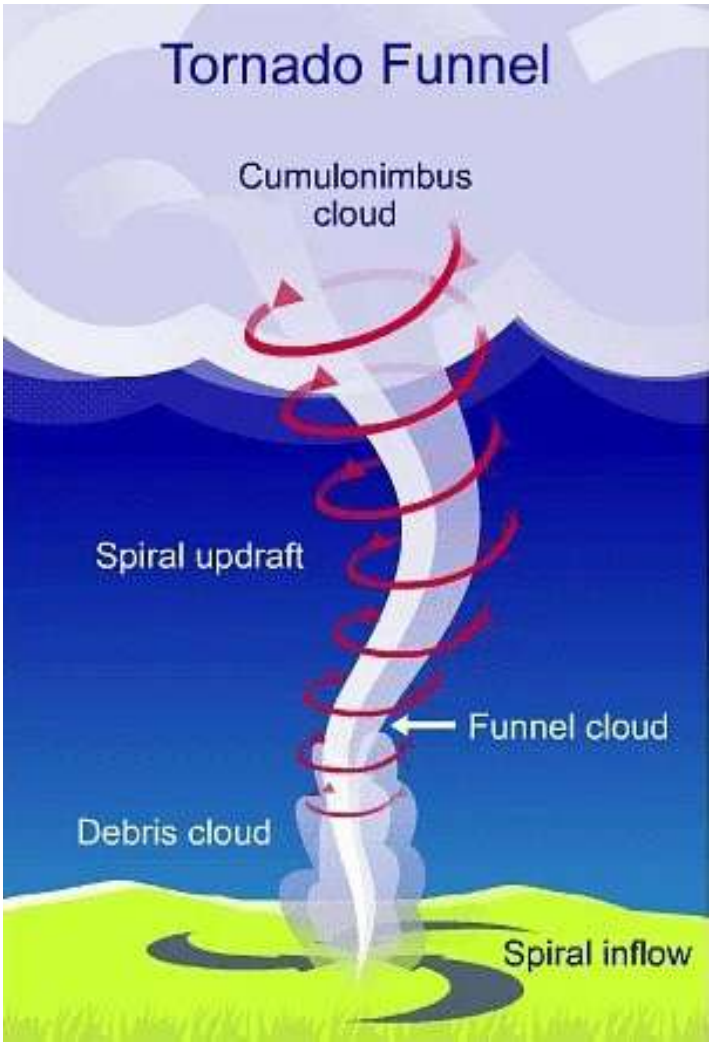
IMD warns of more tornadoes in West Bengal after a recent one killed 5 and over 100 injured in Jalpaiguri.

What is a Tornadoes?

A tornado is a rapidly rotating column of air that extends from a thunderstorm to the ground. It is often visible as a **funnel-shaped cloud** and is capable of causing significant damage to structures and landscapes.



Structure of a Tornado:



Aspect	Tornado	Tropical Cyclone
Definition	A rapidly rotating column of air that extends from a thunderstorm to the ground.	A large-scale, atmospheric wind and rainstorm that rotates around a **low-pressure centre**.
Location	Typically **occurs over land**	Typically **occurs over oceans**
Size	**Much smaller in size**, with diameters on the order of a few hundred meters.	**Much larger in size,** with diameters ranging from tens to hundreds of kilometres.
Formation	Forms from **severe thunderstorms**	Forms over **warm ocean waters**
Duration	**Short-lived**, lasting from a few seconds to a few hours.	Can **last for several days**, moving across large distances.
Speed	Moves more slowly, typically at speeds of **10 to 20 mph (16 to 32 km/h)**	Moves quickly, with forward speeds ranging **from 30 to 70 mph (48 to 113 km/h)**
Wind Shear	Require substantial **vertical shear** of horizontal winds	Require very low values of tropospheric **vertical shear**
Temperature Gradient	Produced in regions of **large temperature gradient**	Generated in regions of **near-zero horizontal temperature gradient**
Damage	**Can cause localized**, but severe damage, including the destruction of buildings and trees.	**Can cause widespread damage**, including flooding, storm surges, and high winds.

GS-2

1. ASSOCIATION OF DEMOCRATIC REFORMS (ADR) DATA

Context:

An analysis by the **Association of Democratic Reforms (ADR)** reveals **concerning statistics about sitting Lok Sabha MPs in India.**

Key Findings:

- Out of **514 MPs analyzed**, **44% face criminal charges, with 29% facing serious charges like murder, attempt to murder, and crimes against women.**
- Among those facing serious charges, **nine have murder cases against them**.
- Additionally, **5% of sitting MPs are billionaires, with assets exceeding ₹100 crore.**
- **Uttar Pradesh, Maharashtra, Bihar, Andhra Pradesh, Telangana, and Himachal Pradesh** stand out with more than **50% of their MPs facing criminal charges.**
- The report also provides insights into the **educational background, age, and gender distribution among sitting MPs,** revealing that 73**% have graduate or higher educational qualifications, while only 15% are women.**

The **Association for Democratic Reforms (ADR)** is a **non-partisan, non-governmental organization in India that works for electoral and political reforms**, and to strengthen democracy and improve governance.

It was **founded in 1999 by professors from the Indian Institute of Management (IIM)**.
The ADR's goals include: **Electoral and political reforms, Empowering the electorate, Greater accountability of political parties, and Inner-party democracy and transparency.**

2. FIRST-EVER NUCLEAR ENERGY SUMMIT

Context:

World leaders from over **30 countries (including India)** and the EU convened at the recently **inaugurated Nuclear Energy Summit in Brussels**, emphasizing nuclear power's role in achieving energy security, climate goals, and sustainable development.

Key Takeaways from the Nuclear Energy Summit:

1. **Promotion of Nuclear Energy**: The summit aimed to promote nuclear energy as a vital component of achieving **low-carbon electricity production**.
2. **Historic Inclusion in Global Stocktake**: Following its inclusion in the Global Stocktake at COP28 in 2023, nuclear energy's deployment was emphasized for accelerating its role in combating climate change.
    a. **The Global Stocktake monitors the Paris Agreement's (2014) progress** and links national contributions to its goals. Its aim is to enhance climate ambition by evaluating collective efforts.
    b. Currently, nuclear energy is **responsible for around 25 % of global low-carbon electricity production**
3. **Atoms4NetZero Initiative**: The Summit collaborates with **IAEA's 'Atoms4NetZero'** program, aimed at supporting Member States' efforts to utilize nuclear energy in achieving net zero emissions.
4. **Technological Advancements**: Advances such as Fusion Energy, and Small Modular Reactors (SMRs), with capacities of up to 300 MW(e) per unit, were highlighted as promising developments in nuclear technology.
5. **Challenges**: Safety concerns post-Fukushima, vulnerability to cyber-attacks, and high upfront costs were acknowledged as challenges that need to be addressed for the wider adoption of nuclear energy.
6. **IAEA's Role:** The International Atomic Energy Agency (IAEA), as the organizer, underscored its role in promoting safe, secure, and peaceful nuclear technologies worldwide.

Status of Nuclear Energy in India:
Nuclear energy contributes about 3**% to India's electricity generation**, with 23 reactors in operation**, producing 7480 MW**. There are **at least ten more reactors** that are under construction, and the capacity is supposed to **triple to 22,480 MW by 2031-32**. Most reactors are **Pressurized Heavy Water Reactors (PHWRs)**. India's first 700 MWe PHWR unit, the **Kakrapar Atomic Power Project (KAPP-3)**, started in 2021. The government plans to establish new plants like the one in **Gorakhpur, Haryana**. India is developing **"Bhavni,"** its first indigenous thorium-based nuclear plant, **utilizing Uranium-233**. The experimental thorium plant **"Kamini"** is already operational in **Kalpakkam**

About IAEA (founded: 1957; HQ: Vienna, Austria)
The IAEA promotes safe and peaceful nuclear technologies worldwide. It operates under the **UN system** and oversees nuclear inspections under the NPT. The Additional Protocol allows it to verify peaceful nuclear material use. **India is a member**.

3. NICES PROGRAMME

Context:

The **National Information System for Climate and Environment Studies (NICES),** operated by **ISRO and other ministries**, invites Indian researchers to **combat climate change**.

- Potential areas include **Space-based ECVs, Climate Indicators, Climate Change Challenges, and Weather Extremes.**

The **National Information System for Climate and Environment Studies (NICES) program** was **conceptualized in 2012** and is operated by the **Indian Space Research Organisation (ISRO)** and the Department of Space, along with other ministries, under the framework of the National Action Plan on Climate Change.

Its primary objective is to **generate and disseminate long-term Essential Climate Variables (ECVs)** derived from **Indian and other Earth observation satellites**, which are essential for understanding Earth's climate.

4. BIMSTEC CHARTER

Context:

Nepal's Lower House of Parliament endorsed the **BIMSTEC Charter recently.**

- The BIMSTEC Charter aims to **enhance collaboration** among member countries, including **Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand**, in areas such as economic prosperity, social progress, and connectivity.
- **BIMSTEC, established in 1997**, seeks to foster cooperation and development in the region.

The BIMSTEC Charter is a **foundational document that outlines the principles, objectives, and framework for cooperation among member states** of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (**BIMSTEC**).

It establishes the **legal basis for the organization** and **defines its structure, functions, and decision-making processes.**

The charter aims to **promote regional cooperation and integration** among **BIMSTEC member countries**, which include **Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand.**

Key areas of cooperation covered by the **charter include economic development, trade, investment, technology transfer, connectivity, and people-to-people exchanges**.

The endorsement and ratification of the BIMSTEC Charter by **member states are essential for its implementation and the effective functioning of the organization.**

5. POLITICAL PARTIES' SYMBOLS

Context:

The Election Commission of India (ECI) allocates symbols to **political parties and candidates based on the Election Symbols (Reservation and Allotment) Order, 1968.**

- Recognized parties have **reserved symbols**, while **unrecognised parties are allotted free symbols during elections.**
- Unrecognised parties can **apply for a common symbol if they meet certain criteria**, including **securing at least 1% of votes in the previous election** or **having elected representatives.**
- The recent **denial of a common symbol to Viduthalai Chiruthaigal Katchi (VCK) and the allotment of a new symbol to Naam Tamilar Katchi (NTK) have raised questions**.

The current rules may need amendment to ensure fair treatment based on past electoral performance and representation.

6. DRAFT MODEL RULES FOR CHILD-BIRTH REGISTRATION

Context:

The **Home Ministry has drafted Model Rules** requiring parents to **record their religion separately when registering the birth of a child**, departing from the previous practice of recording the family's religion.

- The **Registration of Births and Deaths (Amendment) Bill, 2023**, **allows the birth certificate to serve as a single document for various purposes such as admission to educational institutions**, obtaining a driving license, and registering for Aadhaar.
- The bill also **facilitates digital registration and aims to establish national and state-level databases of registered births and deaths**, facilitating efficient delivery of public services and benefits.
- Additionally, it includes provisions for **collecting the Aadhaar numbers of parents for birth registration.**

7. 75 YEARS OF NATO

Context:

NATO, founded in 1949, celebrates 75 years with recent expansion and renewed unity.

NATO (North Atlantic Treaty Organization) is a military alliance of 32 countries from North America and Europe. It aims to **safeguard the freedom and security of its members** through collective defence against aggression.

NATO	Details
Formation	**1949** (HQ: Brussels, Belgium)
Members	**32 member countries** (as of 2023, including Finland and Sweden
Founding Members	Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom, and the United States
Article 5 of NATO	A key provision of the NATO treaty states that **an attack on one member is an attack on all members.** It has been invoked only once **after the 9/11 terrorist attacks** in the United States. However, **NATO's protection does not** extend to **members' civil wars or internal coups.**
Alliances	Euro-Atlantic Partnership Council (EAPC), Mediterranean Dialogue, Istanbul Cooperation Initiative (ICI) **Visit Insights IAS Daily CA for outcomes of the Conference**

GS-3

1. 1MYAC – ONE MILLION YOUTH ACTIONS CHALLENGE

Context:

The **1 Million Youth Actions Challenge (1MYAC)** by the UN Climate Change Learning Partnership (UN CC:Learn) aims to mobilize youth **aged 10 to 30** to take **concrete actions for a sustainable future**, **with a goal of reaching 1,000,000 youth actions**.

- It focuses on **promoting four Sustainable Development Goals (SDGs): clean water and sanitation, responsible consumption and production, climate action, and life on land.**
- 1MYAC was **founded by the Swiss Agency for Development and Cooperation (SDC) and the RéSEAU.**

The **One UN Climate Change Learning Partnership (UN CC:Learn)** is a collaborative initiative of more than **30 multilateral organizations** that support countries in **designing and implementing climate change**. UN CC:Learn offers information **on climate change and free online courses.**

2. IMPACT OF AI BOOM ON INTEREST RATES

What are Interest Rates?

Interest rates represent the cost of borrowing money or the return earned on savings or investments.

AI boom **increases demand for investment in technology**. Companies will be willing to pay higher interest rates to banks, for increased capital investment. This raises interest rates for everyone.

The boom in AI could increase the Real (inflation-adjusted) interest rates due to several factors:

1. **Increased demand for capital expenditure** (capex) to develop high-quality semiconductor chips for AI.
2. **Higher productivity of capital** resulting from AI leads to higher real interest rates.
3. **Expansion of energy infrastructure** to meet the growing demand for computation, driven by AI.
4. **Adoption of cost-effective technologies** like water desalination, leads to increased investment in infrastructure and energy consumption.
5. **Investment in AI-driven warfare** and drone combat technologies.
6. **Job losses from AI lead to investments in worker assistance programs**, putting pressure on real interest rates.

3. ENERGY INEFFICIENCY IN RESIDENTIAL BUILDINGS

Context:

Addressing energy inefficiency in residential buildings is crucial, with initiatives like **Eco-Niwas Samhita (ENS)** introducing the **Residential Envelope Transmittance Value (RETV)** to measure heat transfer.

Need for Energy Efficiency?

1. **India's housing construction sector is booming**, erecting over 3,00,000 housing units annually.
2. The housing sector is a significant energy consumer, responsible for over 33% of India's electricity usage
3. **India Cooling Action Plan** foresees an eight-fold surge in cooling demand from 2017 to 2037.

What is RETV?

The Residential Envelope Transmittance Value (RETV) is a metric used to measure **heat transfer through a building's envelope**. It indicates the **thermal efficiency** of a building, with **lower RETV values corre-**

sponding to cooler indoor environments and decreased energy usage.

Optimal construction materials for energy efficiency include:

Construction Material	Characteristics
Autoclaved Aerated Concrete (AAC) blocks	AAC blocks consistently **exhibit the lowest RETV,** indicating their potential for thermal efficiency
Red bricks	Red bricks require the **longest construction time** but contribute to resource depletion and emissions
Fly ash	The use of fly ash in residential housing construction can enhance thermal efficiency by **improving insulation, reducing heat transfer, and increasing thermal mass**
Monolithic concrete (Mivan)	**Monolithic concrete**, while quick to construct, has significantly higher embodied energy compared to AAC, posing sustainability challenges

Related News:

UNEP Global Status Report for Buildings and Construction (Buildings-GSR) 2024

Source: UNEP

Aspect	Details
Publisher	United Nations Environment Programme (UNEP) and Global Alliance for Buildings and Construction (GlobalABC)
Key Findings	The building and Construction Sector (BCS) contributes to **21% of global Greenhouse Gas** (GHG) Emissions
	In 2022, buildings accounted for **34% of global energy demand** and 37% of energy and process-related carbon dioxide (CO_2) emissions
	India attributes **40% of its CO_2 emissions to the building sector**
Decarbonization Goals	Limit global warming to **1.5°C (Paris Agreement)** and **achieve net zero by 2050** by reducing embodied carbon in building materials
Global Initiatives	**Declaration de Chaillot:** Aims to foster international cooperation to address climate challenges within the building sector
	Energy Performance of Buildings Directive (EU): Zero emission standards for new buildings by 2030
	Buildings Breakthrough Initiative (France and Morocco at COP 28): Near-zero emission and resilient buildings by 2030
	Clean Heat Forum (UK initiative)
India Initiatives	**The first city-specific Zero Carbon Buildings** Action Plan (ZCBAP) launched in Nagpur
	Energy Conservation (Amendment) Act, 2022: Provides for Energy Conservation and Sustainability Building Code
GlobalABC Overview	**Founded at COP21**, GlobalABC is a leading global platform for all built environment stakeholders committed to a zero-emission, efficient, and resilient buildings and construction sector

4. BUTTERFLY CICADA

Context:

A **new species of cicada**, informally named the **"Butterfly Cicada,"** has been discovered in **Meghalaya**, marking the first**-ever record of the genus Becquartina in India.**

- The genus **Becquartina is represented by six species found distributed in China, Thailand, and Vietnam, often referred to as "Butterfly cicadas" due to their colourful wings.**

Cicadas are **insects** that are part of the superfamily Cicadoidea and the order Hemiptera.
They are **stout, green or brown in colour with black markings**, and have **four clear wings that resemble a fly**.

Cicadas can be found in urban and rural areas with hardwood trees. They are **harmless to people, plants, and property.**

5. THE ARMED FORCES (SPECIAL POWERS) ACT (AFSPA)

Context:
The **Union Ministry of Home Affairs (MHA)** has **extended the Armed Forces (Special Powers) Act (AFSPA)** in parts of **Nagaland and Arunachal Pradesh for another six months**

The **Armed Forces (Special Powers) Act (AFSPA)** is an act of the **Indian Parliament** that gives the **military special powers to maintain public order in "disturbed areas".**

The act **came into effect in 1958** and applies to the **states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura.**

The AFSPA gives the ***military, para-military, and other security forces*** the power to:

- Use force, including lethal force, against people who violate the law or are suspected of doing so
- Arrest people without a warrant
- Enter or search premises without a warrant
- Shoot to kill
- Search houses
- Destroy any property that is "likely" to be used by insurgents

6. GENETIC PROFILING OF CAPTIVE ELEPHANTS

Context:
Genetic profiling of **captive elephants in Kerala** is set to begin soon.

Details of the Initiative:

About	Description
What is Genetic Profiling?	Genetic profiling is the **analysis of an organism's DNA** to determine specific **genetic characteristics or variations**. It involves examining the unique genetic makeup of an individual or group, providing insights into traits, ancestry, and potential health risks.
The objective of the initiative	**Create a comprehensive database** incorporating photographs, physical details, and genetic features of over 400 captive elephants in Kerala.
Implementation	By **Wildlife Institute of India (WII)**; Assistant conservators (social forestry) will collect blood and dung samples, supported by forensic kits from WII.
Current Status	Captive elephants are elephants that are **held in captivity by humans**, typically for purposes such as **work, tourism, or religious ceremonies**. **Kerala has 407 captive elephants**, with about 25 elephant deaths annually.
National Perspective	Genetic profiling was completed in several states; data was accessible via the "**Gaja Suchana" app** for monitoring elephant transfers and welfare.
Regulatory Framework	Aligns with the Ministry's efforts to regulate elephant transfers, following the **Captive Elephant (Transfer or Transport) Rules, 2024**.
Previous Efforts	Kerala Forest Department conducted DNA profiling of elephants in 2019, with support from the Rajiv Gandhi Centre for Biotechnology.
Implications	**For Conservation: Enhances welfare and combats illegal transfers** of captive elephants, offering systematic monitoring and management.
	For Research and Policy: Provides **insights into genetic diversity and health**, informing future conservation strategies and policies.

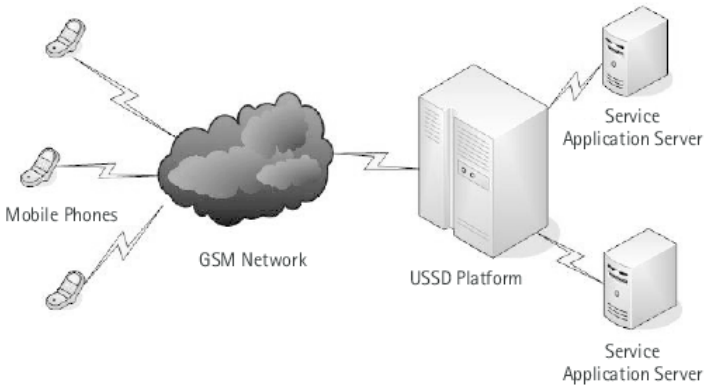
7. USSD-BASED CALL FORWARDING

Context: The Department of Telecom (DoT) has directed **telecom operators to halt USSD-based call forwarding** from April 15 due to misuse, requiring subscribers to activate it through alternative methods.

What is Unstructured Supplementary Service Data (USSD)?

USSD is a **protocol used in GSM networks** for sending **short text messages**. It facilitates instant messaging without storing messages on the operator or subscriber's device. USSD comes in two types: **Pull (user-initiated) and Push (operator-initiated),** using * and # characters and numeric codes. Messages typically start with * or # and end with #, with a maximum length of 182 characters. It's commonly used for **balance deduction notifications** and **checking IMEI numbers** on mobile phones.

- E.g., Checking prepaid mobile balance: *141#; Checking IMEI number: *#06#



What is USSD Call forwarding?

USSD call forwarding is a **feature that allows mobile subscribers to redirect incoming calls to another phone number**. It is typically initiated by **dialling a specific USSD code** on the phone, followed by the **destination number**. This service is commonly used for various purposes such as **call diversion** during busy periods or **when unreachable**.

Issues with USSD call forwarding include misuse for unwarranted activities, such as fraud and online crimes, leading to regulatory intervention

About GSM (Global System for Mobile Communications) network is a standard for mobile communication used by **cellular devices worldwide**. It allows users to make calls, send text messages, and access data services. GSM networks operate on specific frequency bands and use SIM cards to identify and authenticate users.

8. H5N1 BIRD FLU

Context:

H5N1 bird flu, highly pathogenic since 2020, threatens birds and mammals globally. It's **infected birds in 80+ countries**, leading to mass culling in poultry farms.

About H5N1 Bird Flu:

About	Description
Description	H5N1 is a **highly infectious subtype of the influenza A virus**, causing severe respiratory disease in birds (avian influenza or "bird flu").
Classification	H5N1 is classified based on its **surface proteins, hemagglutinin (H) and neuraminidase (N).** There are 18 H subtypes and 11 N subtypes, e.g., A(H1N1) and A(H3N2).
Human Cases	Human cases of H5N1 **occur sporadically,** with difficulty in human-to-human transmission. The mortality rate is about 60% in infected individuals.
Origin and Circulation	Descended from a **1996 outbreak in China**, the current strain emerged in Europe in 2020, spreading globally by late 2021 and reaching Antarctica in 2024.
Spread Factors	Scientists suggest **climate change plays a role, in altering bird behaviour and facilitating virus spread.**
Spread to People	Human infection typically results from **close contact with infected birds or contaminated environments.** Human-to-human transmission is **rare**.
Cause for Concern	While H5N1 poses a **high mortality risk in humans**, its limited human-to-human transmission reduces its pandemic potential. However, if the virus were to mutate for easy human transmission while remaining virulent, it could pose a serious public health threat.
Impact	**Millions of poultry and wild birds** have died, with the virus also infecting various mammalian species. Endangered bird species like **California condors** have been hit hard, and reports of **infections in mammals** raise concerns about viral spread and increased virulence. **Marine mammals,** including **sea lions and dolphins**, have suffered substantial mortality.

9. INDIGENOUS KNOWLEDGE - KONDA REDDI TRIBE

Context:

The **indigenous knowledge** of the **Konda Reddi tribe** regarding the **Indian laurel tree's water-storing ability** has been confirmed by forest officials in the Papikonda National Park.

- Forest authorities conducted **an experiment by cutting the bark of the Indian laurel tree, revealing water splashing out**, particularly in the summer, as claimed by the tribe.
- Indian Laurel Tree known as Indian **Silver Oak and valued for its timber commercially**.

It highlights several ethical values:

- Respect for Indigenous Knowledge.
- Collaboration and Partnership between forest officials and tribes.
- Environmental Conservation
- Sustainability

The Konda Reddi tribe, also known as the **Konda Reddiyar or Konda Kapus**, is an indigenous community primarily found in the **hilly regions of southern India, particularly in the states of Andhra Pradesh and Telangana.**

10. CARDAMOM

Context:

Large-scale damage to cardamom plantations has been reported in various regions of Kerala due to the drought.

- Farmers are facing significant losses, **with many fearing the destruction of their crops if the drought persists.**
- The Indian Council of Agricultural Research and Krishi Vigyan Kendra (KVK) Idukki recommend measures such as foliar application **of Pigmented Facultative Methylotrophic Bacteria (PPFM)** and **treating plants to decrease disease incidence to mitigate the impact of the drought on cardamom production.**

PPFMs are **aerobic, Gram-negative bacteria that use one-carbon compounds like formate, formaldehyde, and methanol** as their **sole carbon and energy source**. They are phylogenetically diverse and belong to the genus **Methylobacterium.**

PPFMs have been **well studied in agricultural systems**. They can be **applied to seeds and crops as a foliar spray.**

Cardamom is a spice made from the **seeds of the Elettaria cardamomum plant**, also known as **green cardamom or true cardamom**.

The plant is **native to southern India and is part of the ginger family**.

Cardamom has a **strong, warm flavour that is both spicy and sweet**.

Soil and climate

- Soil: It is grown in **forest loamy soils, which are usually acidic in nature with a pH range of 5.0–6.5**
- This crop can be grown at an **elevation from 600 to 1500 m**.
- Temperature: **10 to 35 degree C**
- Rainfall**: 1500 to 4000 mm**
- The growth of cardamom is **enhanced when planted in humus rich soils with low to medium available phosphorous and medium to high available potassium.**

11. TISSUE CULTURE

Context:

The forest and wildlife department of Delhi is establishing a **tissue culture laboratory at the Asola Bhatti Wildlife Sanctuary** to **generate saplings of threatened or rare native trees** in the city.

- The aim is to **grow endangered native trees in a controlled environment** and regenerate saplings for species facing regeneration challenges.

Tissue culture is a **research tool** that involves **growing cells or tissues in an artificial environment**. It's also called **micropropagation.**

Animal tissue culture

This technique involves **maintaining and growing isolated cells**, **tissues, or organs in an artificial environment.** It›s used in **biomedical research to study the causes of disease**.

Plant tissue culture

This technique **involves growing plant cells, tissues, or organs in a sterile environment**. It's used to **produce clones of a plant**. Under the right conditions, a **single cell can be used to regenerate an entire plant.**

12. OZONE ON CALLISTO

Context:

An international team, including researchers from India's PRL Ahmedabad, has discovered **evidence of ozone on Jupiter's moon Callisto**, indicating **complex chemical processes on icy celestial bodies.**

- The study, reveals the **chemical evolution of sulphur dioxide ice under ultraviolet irradiation**, **leading to ozone formation.**
- The presence of ozone suggests **stable atmospheric conditions on Callisto**, potentially **conducive to hosting life**.

This discovery raises questions about **Callisto's habitability and provides insights into the chemical processes of icy moons in the Solar System.**

13. REPORTS IN NEWS

Topic	Details
Report on GIFT IFSC (Indian Financial System Code)	Expert Committee on developing GIFT IFSC as **'Global Finance and Accounting Hub'** submits report to IFSCA
	Background: The committee was formed following the Ministry of Finance notification; The notification classified book-keeping, accounting, taxation, and financial crime compliance as **'financial services'** under the IFSC Act, 2019
	GIFT IFSC: Established as SEZ in 2015 in Gujarat; caters to customers outside the domestic economy; deals with flows of finance, financial products, and services across borders
	Opportunities: Strong technology-driven outsourcing capabilities; large talent pool of skilled manpower in accounting, etc.; **"Accounting and finance services"** recognized as one of 12 Champion sectors in services for exports
	Recommendations: Proposes new regulation for comprehensive definition of Bookkeeping, Accounting, Taxation, and Financial Crime Compliance Services; allows only registered companies or Limited Liability Partnerships to offer services
	About IFSC Authority: Statutory body under IFSC Act, 2019; unified regulator for development and regulation of financial products, services, and institutions in IFSCs in India
IOM Report: A Decade of Documenting Migrant Deaths	International Organization for Migration (IOM) releases report "A Decade of Documenting Migrant Deaths" to **mark ten years of IOM's Missing Migrants Project (MMP)**
	MMP was launched in 2014 **to document deaths and disappearances of people in the migration process** towards an international destination
	Key Findings: More than **one in three migrants** from conflict-affected countries; over two-thirds of documented deaths are unidentified; major causes of migrant deaths include drowning, vehicle accidents, suffocation, inadequate shelter, healthcare, etc
	What is Migration? Migration refers to the movement of persons away from their place of usual residence, either across an international border or within the State
	Consequences of Migration: Intermixing of cultures, urban overcrowding and slum development, changes in resource-population ratio, brain drain from poorer to developed countries for better economic opportunities
	Initiatives: Global Compact for Safe, Orderly and Regular Migration (GCM) under UN; India's measures like **Pravasi Bharatiya Bima Yojana**, pre-departure orientation training for migrants
	About IOM: Intergovernmental organization under the UN; provides services and advice on migration to governments and migrants; established in 1951 as Intergovernmental Committee for European Migration (ICEM) to resettle people displaced by World War II; **It has 175 member states including India**. It is headquartered in **Geneva, Switzerland**

14. MRI SCAN: IMAGE OF HUMAN BRAIN

Context:

The **world's most powerful MRI scanner, located in France**, has produced its first images of the human brain, offering unprecedented precision.

Key feature of MRI Scanner:

1. **Unprecedented Resolution**: In just four minutes, the machine captures highly detailed anatomical images with a resolution of **0.2 mm in plane and 1 mm** slice thickness, equivalent to a few thousand neurons.
2. **Medical Impact**: The detailed imaging capabilities can aid in research on neurodegenerative diseases **like Alzheimer's and Parkinson's**.

3. **Advanced Detection**: The machine facilitates the detection of chemical species like **lithium and molecules involved in brain metabolism**, enhancing diagnostics and treatment efficacy.

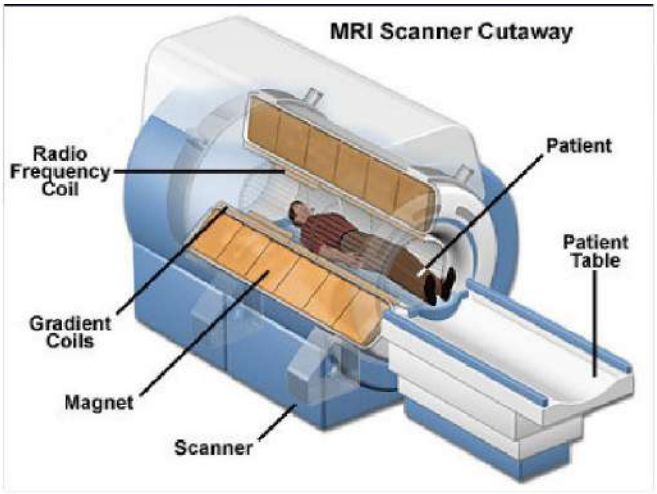
What is an MRI Scanner?

An MRI (Magnetic Resonance Imaging) scanner is a medical device that **uses a strong magnetic field and radio waves to generate detailed images of the inside of the body**, particularly the soft tissues like the brain, muscles, and organs.

How does it work?

When a patient **enters the MRI machine**, their **body's hydrogen atoms align with the magnetic field**. Radio waves are then **used to temporarily disrupt this alignment**. When the radio waves are turned off, the **hydrogen atoms return to their aligned state,** emitting energy that is detected by the scanner.

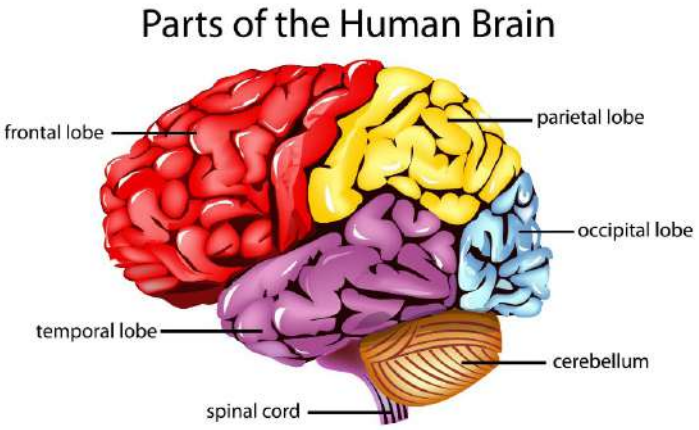
Different tissues emit different signals based on their hydrogen atom density and molecular environment, allowing the scanner to create detailed images that physicians can use to diagnose various medical conditions.



About Human Brain:

The human brain is the **control centre of the body**, responsible for processing information, controlling movement, regulating emotions, and enabling consciousness. It consists of **billions of neurons,** which transmit signals through electrical and chemical processes. The brain is divided into regions that specialize in different functions

1. **Frontal lobe**: It is involved in higher-level cognitive functions such as decision-making, problem-solving, planning, and social behaviour.
2. **The parietal lobe** plays a key role in processing sensory information from the body, including touch, temperature, and pain.
3. **The occipital lobe** is primarily responsible for **processing visual information** received from the eyes.
4. **The temporal lobe** is involved in various functions, including auditory processing (hearing), memory formation, language comprehension, and emotion regulation.
5. **The cerebellum** is essential for coordinating movement, balance, and posture
6. **Cerebral cortex** for higher cognitive functions
7. **The brainstem** for basic life functions like breathing and heartbeat



15. ZIRCON HYPERSONIC MISSILE

Context:

Russian President confirmed that the **3M22 Zircon hypersonic missile** had **been used in combat**, presenting a **new challenge to Ukrainian air defense systems in the ongoing conflict between Russia and Ukraine.**

- The Zircon missile, **capable of reaching eight times the speed of sound with a range of about 400 kilometers,** could potentially **evade advanced air defense systems like the US Patriot.**
- Powered by a scramjet engine, the Zircon is designed **for low-altitude flying and manoeuvrability, making it difficult for detection and interception.**

16. RBI@90

Context:

The Prime Minister addressed the **opening ceremony of RBI@90 in Mumbai**, marking **90 years of the Reserve Bank of India (RBI).**

Brief History of RBI:

- **Royal Commission on Indian Currency, 1926 (Hilton Young Commission)** recommended the **establishment of the RBI**, a suggestion reiterated by **the Indian Central Banking Enquiry Committee in 1931.**
- **The RBI was founded in 1935** under the **Reserve Bank of India Act, 1934**, with Sir **Osborne**

Smith serving as its inaugural Governor.

- In 1949, the **RBI was nationalized**, marking a pivotal moment in its institutional history.

The Reserve Bank of India (RBI) has evolved significantly in recent years:

- Inflation-targeting central bank
- Foreign exchange reserves
- Macroeconomic stability
- Reduction in NPAs
- Technology in payments
- Central bank digital currency

However, the RBI faces several challenges:

- Banking Regulation and Supervision
- Transparency with Regulated Entities
- Regulating New-Age Fintech Firms
- Limited Powers over Public-Sector Banks
- Potential Fiscal Dominance of Monetary Policy

17. INDIA'S COAL AND LIGNITE PRODUCTION

Context:

India's coal and lignite production reached an unprecedented milestone, **surpassing 1 billion tonnes in the fiscal year 2023-24**, compared to 937 million tonnes in the previous fiscal.

- **India aims to eliminate coal imports by 2025-26,** with coal imports for blending purposes notably decreasing in FY24 compared to the previous fiscal.

The **current status of the coal sector in India** is as follows:

Geological reserves: India possesses **the 5th largest geological reserves of coal globally** and ranks as the **2nd largest consumer of coal in the world.**

Production: **Coal India Limited (CIL)** stands as the **largest producer**, contributing to **over 70% of coal production in India.**

Import: In **the fiscal year 2023-24** (until January 2024), **India imported 217.75 million tonnes of coal.** Non-coking coal dominates the imports, **accounting for approximately 77% of the total imported coal.**

18. ANTI-DUMPING INVESTIGATION

Context:

India has launched an **anti-dumping investigation** (initiated by the Directorate General of Trade Remedies (DGTR)), **into the import of a chemical used in the rubber industry** from China and Japan.

What is dumping?

When the goods are exported by a country to a foreign country at a price lower than the price it charges in its own home market is called dumping.

What is Anti-Dumping?

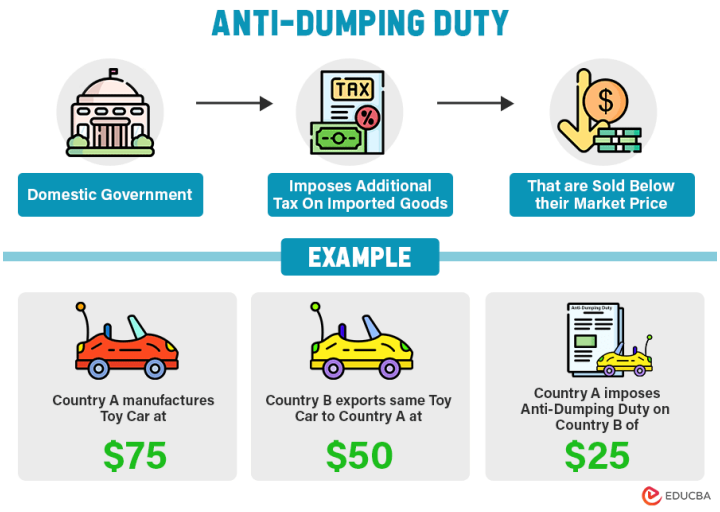
Anti-dumping duties are **taxes imposed on imported goods** in order to compensate for the **difference between their export price and their normal value**, if dumping causes injury to producers of competing products in the importing country. This practice can **harm domestic industries** by undercutting their prices and creating unfair competition. Anti-dumping measures are **part of WTO regulations** aimed at creating a **level playing field for domestic producers against foreign competitors**

Why anti-dumping investigation?

An anti-dumping probe is **underway for imports of 'insoluble sulphur' from China and Japan**. **Insoluble sulphur, an amorphous form of sulphur,** doesn't dissolve in carbon disulphide and is crucial in the rubber industry. It serves as a **vital additive agent** in rubber products like tyres and shoes, enhancing their quality and wearability. Additionally, it acts as **a vulcanization accelerator** in the rubber manufacturing process, facilitating the hardening of rubber through cross-linking of molecules with other substances.

What is anti-dumping?

Anti-dumping is a protective tariff imposed by a government on foreign imports sold at a price lower than the home market price. It aims to counter distortions in trade caused by dumping. **Anti-dumping is permitted by the WTO.**



19. SHALLOW FAKES

Context:

The **prevalence and impact of shallow fakes** during elections have been a concern.

- Shallow Fakes are **manipulated images, videos, and voice clips created without AI technology.**
- Unlike deepfakes, **shallow fakes rely on traditional editing tools to deceive viewers.**
- They are **increasingly used in political contexts, particularly during elections, to spread misinformation.**

- **The blurring line between shallow fakes and deepfakes**, coupled **with the accessibility of editing tools, has amplified their prevalence.**

20. ARTIFICIAL SUN

Context:

Scientists in South Korea have achieved a **new world record in nuclear fusion**, sustaining temperatures of **100 million degrees Celsius**, **seven times hotter than the sun's core.**

- This feat, conducted using the **Korea Superconducting Tokamak Advanced Research device (KSTAR),** aims to **replicate the fusion reaction powering stars to unlock clean, limitless energy.**
- The experiment involved **fusing atoms to release massive energy without carbon emissions**, crucial for addressing climate change.
- KSTAR sustained these high temperatures for **48 seconds, breaking the previous record of 30 seconds.** To achieve this, scientists used **tungsten instead of carbon in the reactor's "diverters" to extract impurities and heat.**
- Their goal is to sustain **these temperatures for at least 300 seconds by 2026**, critical for **scaling up fusion operations.**

This research will contribute to the I**nternational Thermonuclear Experimental Reactor (ITER) in France,** aiding in **advancing fusion energy commercialization.**

21. CLEAN ENERGY TRANSITIONS PROGRAMME 2023

Context:

The Clean Energy Transitions Programme (CETP) is **the International Energy Agency's (IEA**) primary initiative aimed at accelerating **global progress towards a net-zero energy system.**

- The **CETP Annual Report 2023** outlines the program's achievements in the past year, emphasizing its **focus on emerging markets and developing economies**.

Highlights include:

- The **introduction of new fuel standards for trucks in Indonesia, the Energy Transition Plan in Uganda, and regulations for the spot electricity market in China, all aligned with IEA recommendations.**
- The report also mentions **significant publications such as the Latin America Energy Outlook and a World Energy Outlook Special Report** on universal access to clean cooking in Africa.
- Additionally, the **CETP supported the IEA's work on energy efficiency**, critical minerals, energy employment, clean energy investment, and capacity building for policymakers.
- The program played a **crucial role in global energy dialogues and engagements, including G20, G7, and ASEAN Ministerial meetings,** as well as COP28 in Dubai, supporting the IEA's ambitious **action plan towards 1.5°C-aligned energy transitions**.

22. PAIRA CROPPING SYSTEM

Context:

Odisha is promoting **climate-resilient agriculture** through **its rice fallow initiative, capitalizing on residual moisture after rice harvest** to **cultivate short-duration pulses and oilseed crops.**

- This initiative aims to **boost land productivity, increase farmers' income, and ensure food security**.
- The scheme, **focuses on optimal resource utilization, increasing cropping intensity, and restoring soil health.**
- Eight crops are being cultivated under the scheme, **including green gram, black gram, Bengal gram, and mustard.**

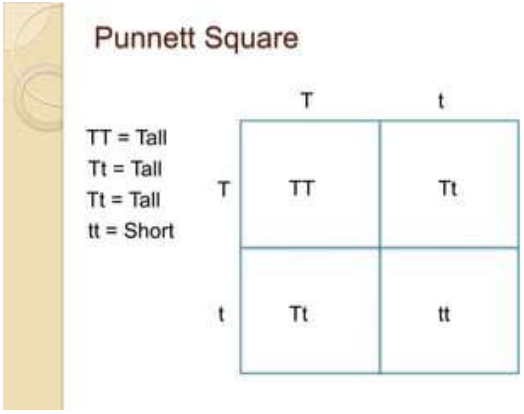
Eco-friendly inputs such as **bio-fertilizers, bio-pesticides, and integrated pest management techniques** are being incorporated to **promote natural pest control and reduce reliance on chemical pesticides.**

23. PUNNETT SQUARE

Context:

The **Punnett square, named after British geneticist Reginald Punnett**, is a grid used to **predict the possible genetic outcomes of offspring** when two individuals with known genotypes are crossed.

- It consists of a simple grid with **squares representing possible combinations of traits inherited from each parent.**
- This tool helps **visualize the probabilities of different traits** appearing in **offspring and is commonly used in biology** to understand **inheritance patterns, such as dominant and recessive genes.**
- Researchers utilize **Punnett squares alongside Mendelian inheritance** principles to study **genetic traits in offspring**, including those of animals and humans.



24. 'GRAVITY HOLE' IN THE INDIAN OCEAN

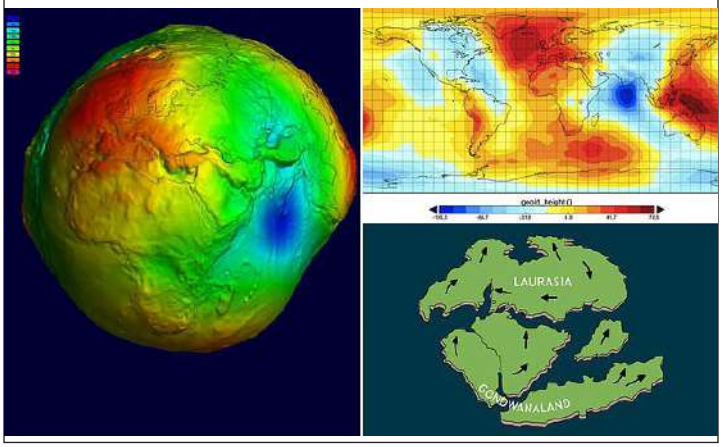
Context:

Scientists from **the Indian Institute of Science in Bengaluru**, India, have proposed a **credible explanation for the "gravity hole" in the Indian Ocean**.

- Gravity Hole is where **Earth's gravitational pull is weaker**, leading to a **sea level dip of over 328 feet (100 meters).**
- Using computer simulations dating back 140 million years, the researchers suggest that **plumes of magma from deep within the planet, similar to those that create volcanoes, are responsible for the anomaly.**
- These plumes, originating from the **disappearance of an ancient ocean between the Indian plate and Asia**, are believed to have **brought low-density material** closer to Earth's surface, **shaping the "gravity hole."**

The "gravity hole" is a **circular depression in the Indian Ocean** that has a **weaker gravitational pull** than the rest of the planet.

It's officially called the **Indian Ocean geoid low and is the world's largest gravity anomaly.**



25. "MOTHER OF DRAGONS" COMET

Context:

The **"Mother of Dragons" comet**, officially named **Comet 12P/Pons-Brooks**, is making a rare **appearance in the Northern Hemisphere skies**.

- This unique **"Halley-type" comet**, which **completes its orbit around the sun every 71 years**, is visible after dusk, **marking its first appearance since 1954.**
- Named by the European Space Agency due to its association with **the "kappa-Draconids" meteor** shower, the comet exhibits a **bright green colour due to the emission of emerald-coloured light from diatomic carbon molecules.**
- Notable for its cryovolcanic nature, the **comet regularly erupts, creating stunning displays of brightness.**

26. S.A.R.A.H. - SMART AI RESOURCE ASSISTANT FOR HEALTH

Context:

The **World Health Organization (WHO)** has introduced **S.A.R.A.H. (Smart AI Resource Assistant for Health),** a digital health **promoter prototype** powered by **generative artificial intelligence (AI), ahead of World Health Day.**

- **S.A.R.A.H. engages users in 8 languages** on various health topics, providing information on **healthy habits, mental health, and major health issues like cancer and heart disease.**
- S.A.R.A.H. utilizes **generative AI for accurate real-time responses and empathetic interactions**, supported by **Soul Machines Biological AI.**

Previous versions of S.A.R.A.H., known as Florence, were used during the COVID-19 pandemic to disseminate critical health messages.

27. PRATUSH

Context:

Astronomers are keen on deploying telescopes on and around the moon to overcome **challenges faced by instruments on Earth, such as atmospheric interference and radio noise**.

- India's contribution, **PRATUSH (Probing ReionizATion of the Universe using Signal from Hydrogen),** is being developed by the **Raman Research Institute (RRI) in collaboration with the Indian Space Research Organisation (ISRO).**

PRATUSH, or Probing ReionizATion of the Universe using Signal from Hydrogen, is a future **radiometer planned for lunar orbit.**

It aims to uncover the **Cosmic Dawn of the Universe**, answering questions about the formation of the **first stars, their nature, and the light they emitted.**

The project focuses on studying the **Cosmic Dawn and Epoch of Reionization (EoR)** using radiation from **neutral hydrogen gas, which emits a signal at a 21-cm wavelength.**

This signal can provide insights into the **early Universe's transition from neutral to ionized states.**

PRATUSH will carry instruments designed to detect this weak signal, operating over a frequency band of **30-250 MHz.**

Its observations will **be free from ground-based interference, enabling more accurate measurements.**

28. COORDINATED LUNAR TIME

Context:

The **White House has directed NASA** to establish a **unified time standard for the moon and other celestial bodies,** aiming to set **international norms in space amidst a competitive lunar race.**

- The directive, outlined by the head of the White House Office of **Science and Technology Policy (OSTP),** calls for the development of a **Coordinated Lunar Time (LTC) by the end of 2026**.
- LTC will provide a **time-keeping benchmark for lunar missions**, accounting for the **differing gravitational forces and other factors** affecting time perception on the moon.
- The initiative seeks to ensure **precision in lunar missions, facilitate data transfers between spacecraft, and coordinate operations as commercial activities expand to the moon**.

The establishment of **LTC will require international agreements and coordination among spacefaring nations.**

29. TRADEMARK

Context:

The Delhi High Court declared the **"Haldiram" mark as a well-known trademark** for food items, restaurants, and eateries globally. This ruling followed a suit filed by Haldiram India seeking protection of its mark.

The court acknowledged the brand's extensive presence and influence, dating back to the 1960s, and granted a decree declaring "Haldiram" as a well-known mark. Additionally, the court imposed **fines on an imitator for trademark infringement**, highlighting the importance of protecting established brands.

What is a Trademark?

A trademark is a **distinctive sign or indicator used by a business to distinguish its products or services from those of others**. It serves as a badge of origin, identifying a particular business as the source of goods or services.

Intellectual Property Rights (IPRs) covered in India:

Types	Legal Provision	Description
Patent	Patent Act, 1970	Exclusive rights granted for a new and inventive product or process for a certain period, **typically 20 years**
Trademark	Trademark Act 1999	A symbol, word, or phrase **(e.g. Brand name, logo)** used to identify and distinguish goods or services of one seller from those of others. **Term of Protection: 10 years; Renewable 10**
Designs	Designs Act 2000	Protection is granted to the **unique appearance of a product** (New or original designs) resulting from its features such as lines, contours, colours, shape, texture, materials, or ornamentation. **Term of Protection: 10 + 5 years**
Copyrights	Copyrights Act 1957	It is a **legal protection granted to creators of original works,** such as literature, music, art, or software, giving them exclusive rights to reproduce, distribute, and display their work for a limited period. **Term of Protection: Authors: Lifetime + 60 years; Producers: 60 years; Performers: 50 years**
Geographical Indications (GI)	GI Act, 1999	Sign used on goods that have a **specific geographical origin and possess qualities, reputation, or characteristics** that are essentially attributable to that origin. **Term of Protection: 10 years; Renewable 10**
Trade Secrets	Protected under Common Law	Confidential information that provides a **competitive advantage to a business** and is protected under common law. **Term of Protection: Till confidentiality is safeguarded**

30. EXCHANGE TRADED CURRENCY DERIVATIVES

Context:

The **Reserve Bank of India (RBI)** has postponed the implementation of its new norms for the **exchange-traded currency derivatives (ETCD)** market.

- This decision follows **concerns raised by market participants regarding participation in the ETCD market, which led to increased volatility in the forex market.**

- The new norms, **aimed to allow users to take positions in the foreign exchange derivatives market** without **needing to establish the existence of underlying exposure**, up to a single limit of $100 million equivalent across all currency pairs involving the rupee.
- However, the RBI emphasized that the **regulatory framework for ETCDs remains consistent**, guided by the **Foreign Exchange Management Act (FEMA), 1999.**
- Users are required to **ensure compliance with the requirement of having underlying exposure**, and **the limit for taking positions** was subsequently amended to a single limit of **$100 million** combined across all exchanges.

While the postponement may not have immediate implications, it **could lead to increased trading volumes on such platforms, stabilizing pressure on options premiums.**

31. AGRICULTURE IN NEWS

Technique	Description	Benefits	Challenges
Mulching	Farmers in the **Ladakhi village of Phey are defying the odds by successfully growing organic watermelons** (a crop typically unsuited for the cold desert region) using Mulching Mulching involves **covering topsoil with plant materials like leaves or straw**. It helps create a soil structure that allows rainwater to infiltrate easily, reducing runoff.	Prevents soil erosion; Increases organic matter in the soil	Lack of technical knowledge; Higher initial setup cost; Need for constant human intervention
Hydroponics	Hydroponics is a **soil-less farming method** where plants grow in a water-based nutrient solution, often with an aggregate substrate like vermiculite or coconut coir.	Resource efficiency; Higher yields; Reduced labour costs; and increased plant yields.	Lack of technical knowledge; High initial setup costs; Need for constant human intervention; Infrastructure limitations hindering widespread adoption

32. PLANKTON CRASH

Context:

A panel formed by the **National Green Tribunal (NGT) investigated the red colouration of the sea in Puducherry** and attributed it **to a plankton crash**.

- A specific **species of phytoplankton, Noctiluca scintillans, was found to be ruptured, releasing red pigment into the sea.**
- The panel **ruled out algal bloom and contamination** from a nearby paper manufacturing unit, stating that the **unit's operations did not coincide with the discolouration incidents.**
- Instead, the panel identified **high iron concentration as a potential factor favouring plankton bloom.**
- Environmental parameters such as **sea surface temperature, salinity, pH, and dissolved oxygen were found conducive to the proliferation of this species.**

A plankton crash is when a **dramatic bloom of plankton in a pond is replaced by very few viable plankton.** This can be caused by a **lack of nutrients or CO2**

Dead plankton can **create large amounts of stable foam on the surface of the pond.**

33. VOICE ENGINE

Context: **OpenAI has unveiled its Voice Engine,** a groundbreaking **text-to-audio tool** capable of **replicating any voice in any language.**

- Users can upload a **15-second audio sample**, and the **engine generates audio in the same voice based on a written prompt.**
- OpenAI highlights the positive applications of Voice Engine, **such as aiding non-readers, translating content,**

and assisting non-verbal individuals, concerns over its potential misuse have arisen.

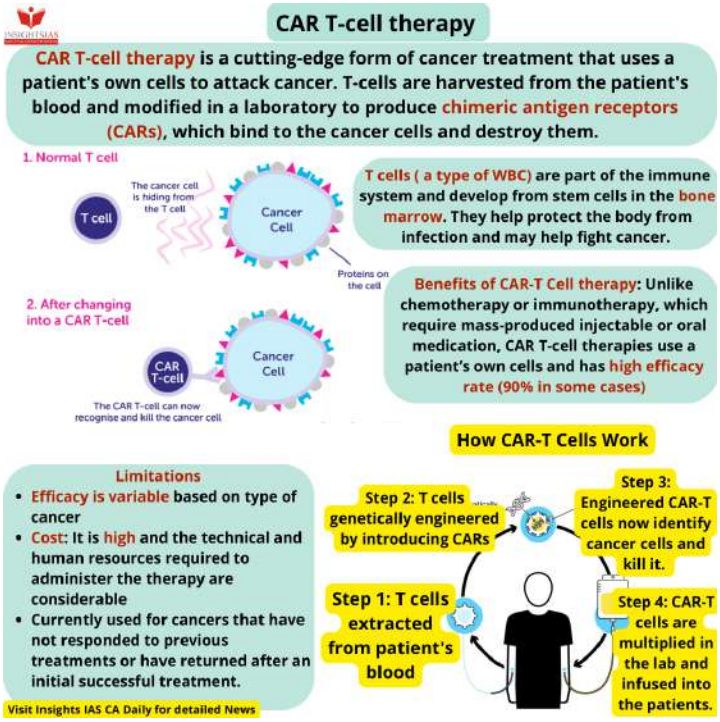
- **Deepfake technologies, including voice cloning**, have been exploited to deceive people, especially during elections.

34. NEXCAR19

Context:

The President of India, launched **India's first indigenous CAR-T cell therapy** for cancer at the **Indian Institute of Technology, Bombay.**

Named NexCAR19, it is the **world's most affordable CAR-T therapy**, marking a significant milestone in **India's advancement in cell and gene therapy.**



35. AGNI-PRIME BALLISTIC MISSILE

Context:

India successfully conducted a **night trial of the new-generation Agni-Prime ballistic missile**, from the **Abdul Kalam Island off the coast of Odisha.**

- The test, conducted by the **Strategic Forces Command (SFC) and DRDO**, met all objectives, **confirming its reliable performance.**
- The **Agni-Prime incorporates new propulsion systems, advanced navigation, and a canister-launch system, enhancing strategic deterrence capabilities**

Agni-Prime is a **two-stage canisterised solid propellant ballistic missile** with a dual redundant **navigation and guidance system, according to DRDO**.

It has a range **of 1,000-2,000km** and was tested for the **first time in June 2021**.

It is **lighter than all the earlier Agni series of missiles**.

SPORTS CORNER

1. 2026 COMMONWEALTH GAMES

Context:

Singapore has decided **against hosting the 2026 Commonwealth Games**, following Malaysia's lead. The Commonwealth Games Federation has been searching for a **new host since Victoria, Australia withdrew** due to escalating costs. Despite a £100 million incentive, Malaysia declined the opportunity last month due to financial concerns.

About Commonwealth Games:

The Commonwealth Games is a **quadrennial (occurring every 4 years) international multi-sport event** involving athletes from the **Commonwealth of Nations**. It originated in **1930 as the British Empire Games** and evolved into its current format, embracing athletes with disabilities since 2002 and achieving gender equality in medal events in 2018. Hosted by various cities, Australia has held the Games the most times. The most recent Games were in **Birmingham in 2022**. India hosted the event in 2010 (in Delhi)

MAPPING

INTERNATIONAL

1. AFRICA'S AFAR TRIANGLE

Context:

Geologists have discovered a **fault in Africa's Afar Triangle**, indicating a potential formation of the **world's sixth ocean**

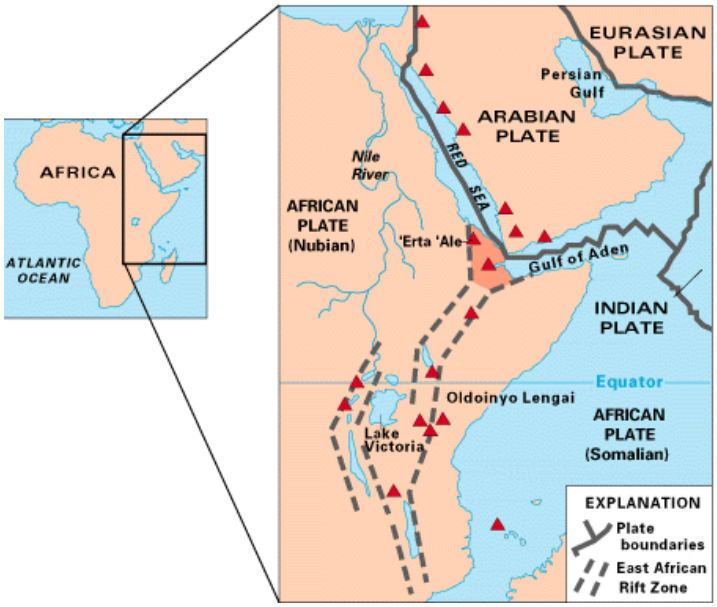
Causes for the rift:

This geological phenomenon is driven by **tectonic plate movements**, particularly in the **East African Rift system**. The rift, caused by the separation of tectonic plates, could split the African continent in **5 to 10 million years**, leading to the creation of a new ocean basin.

About Afar Triangle:

It is part of the Great Rift Valley in East Africa and is a geological depression known for its significance in human evolution. It **overlaps Eritrea, Djibouti, and the Afar Region of Ethiopia and contains Lake Assal**, Af-

rica's lowest point. The region experiences extreme heat and drought, with some of the **hottest temperatures on Earth**. It is bordered by the Ethiopian Plateau, the Danakil block, the Somali Plateau, and the Ali-Sabieh block. Fossil sites in the Afar region, such as **Hadar and Dikika,** have yielded important discoveries related to early hominins and human tool culture.



Five oceans on Earth (from largest to smallest):

1. Pacific Ocean
2. Atlantic Ocean
3. Indian Ocean
4. Southern Ocean
5. Arctic Ocean

2. CAMBODIA (CYBER-SLAVERY)

Context:

Hundreds of Indians were **rescued from cyber-scam factories in Cambodia** after being promised jobs but forced into **illegal online work (ranging** from money laundering to love scams).

About Cyber-Slavery:

Cyber-slavery **exploits people in the digital world**, **luring victims with false job promises** and forcing them into online scams. This modern form of human trafficking is emerging as a severe and widespread organized crime.

About Cambodia:

Cambodia is a Southeast Asian nation whose **landscape spans low-lying plains, the Mekong Delta, mountains and the Gulf of Thailand coastline**. In the country's northwest are the ruins of Angkor Wat, a massive stone temple complex built during the **Khmer Empire.**

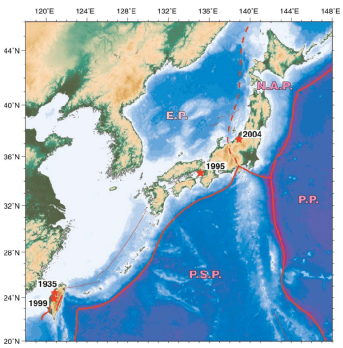
3. EARTHQUAKE IN TAIWAN

Context:

A powerful earthquake of **7.2 magnitude** struck Taiwan.

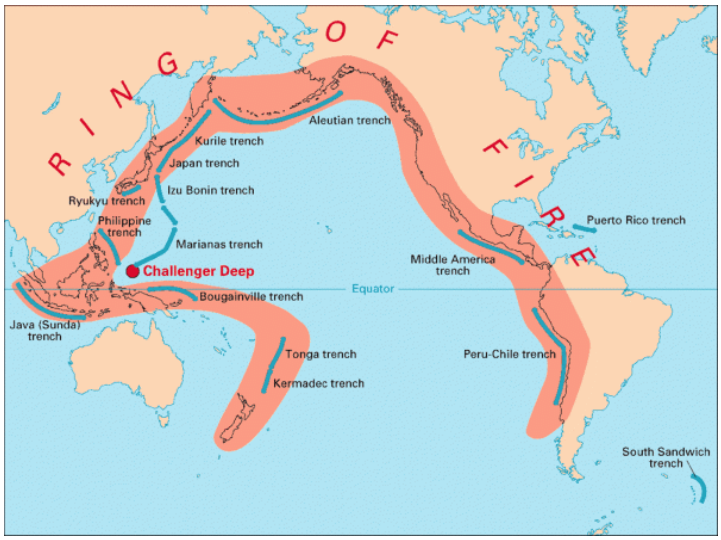
What makes Taiwan and Japan so prone to earthquakes?

Taiwan and Japan are **highly prone to earthquakes due to their location along major tectonic plate boundaries**. Both countries sit on the **Pacific "Ring of Fire,"** where several tectonic plates converge. Taiwan is situated on the **boundary between the Philippine Sea Plate (PSP) and the Eurasian Plate (EP)**, while Japan is located at the **juncture of the Pacific Plate (PP)**, **Philippine Sea Plate (PSP), and Eurasian Plate(EP)**. The intense geological activity along these plate boundaries results in frequent seismic events, including earthquakes and volcanic eruptions. Additionally, both Taiwan and Japan have **rugged terrain and mountainous regions**, further exacerbating the impact of earthquakes.



What is Ring of Fire?

The Ring of Fire is a **horseshoe-shaped region in the Pacific Ocean** characterized by frequent seismic and volcanic activity. The Ring of Fire marks the convergence of several tectonic plates, including the Pacific Plate, and is associated with approximately **90% of the world's earthquakes. T**he Ring of Fire hosts numerous volcanoes formed through subduction, where **one tectonic plate is forced beneath another**, leading to volcanic eruptions.



INDIAN

4. KATCHATHEEVU ISLAND

Aspect	Description
Location	Katchatheevu island, located in the **narrow Palk Strait between India and Sri Lanka**, lies approximately **20 kilometres from the Rameswaram coast** of Tamil Nadu, India.
1974 Agreement	The **island's transfer to Sri Lanka** occurred following an agreement signed between then PM Indira Gandhi of India and Sirima R.D. Bandaranaike of Sri Lanka in June 1974.
	The agreement also **allowed Indian fishermen to fish around the island**, dry their nets on it and permitted **Indian pilgrims to visit the Catholic shrine located on the island**
1976 Agreement	The **1976 agreement defined maritime boundaries and exclusive economic zones for India and Sri Lanka**. It also restricted fishing in each other's waters without explicit permission from either country
Fishing Rights	Despite the transfer, **traditional fishing activities by both Indian and Sri Lankan fisherfolk continued** around Katchatheevu, **regulated by a 1976 agreement requiring permission**
Historical Significance	Katchatheevu has been historically significant, **hosting St. Anthony's Church**, which conducts an annual festival attracting devotees from both India and Sri Lanka.

Legal Status	Despite calls for retrieval, the Indian government, through various statements, affirmed K**atcha-theevu's status as belonging to Sri Lanka based on the 1974 and 1976 agreements**

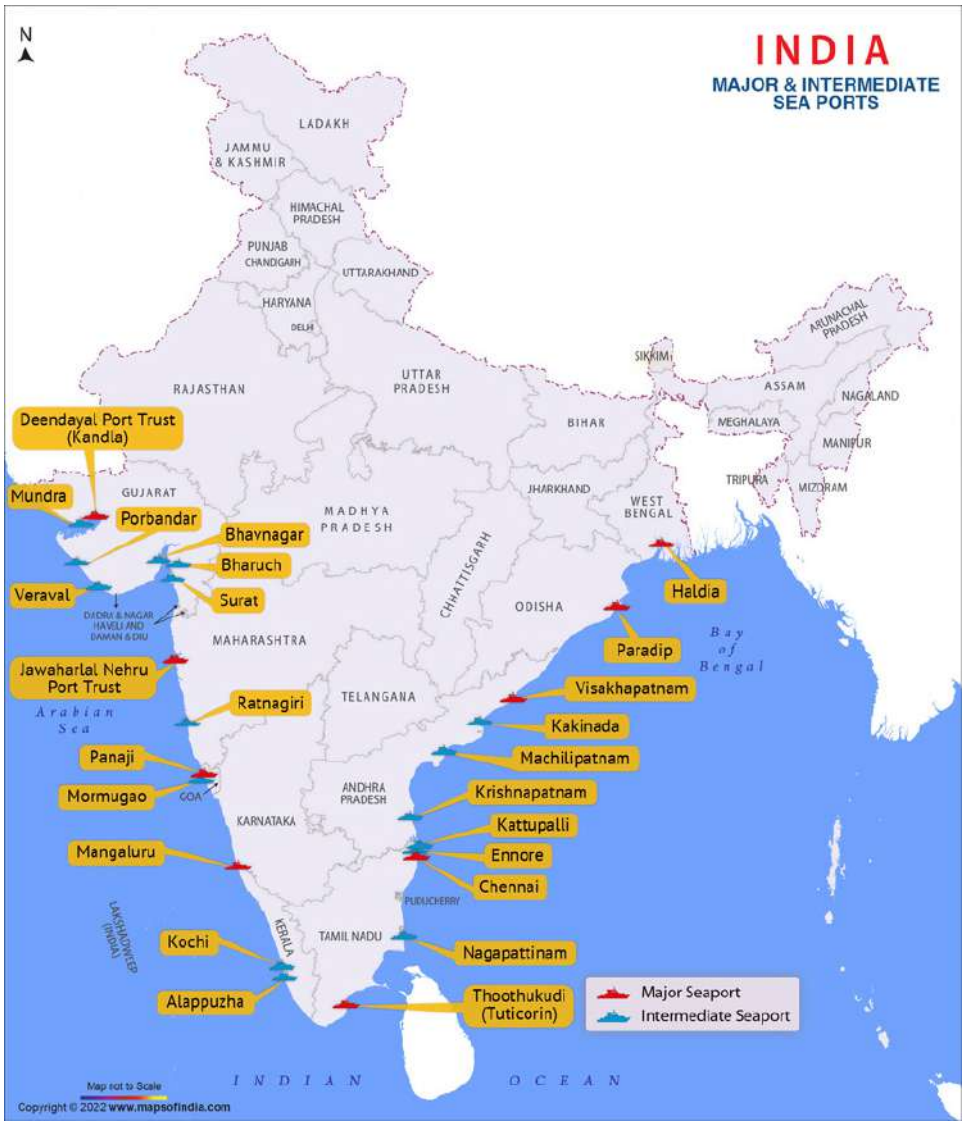
5. PARADIP PORT

Context:
Paradip Port Authority (PPA) has achieved a significant milestone by **becoming the top cargo-handling major port in India**, surpassing Deendayal Port, Kandla.

About Paradip Port
It is located in Odisha and is a **vital deep-water port on the East Coast of India**, situated at the convergence of the **Mahanadi River and the Bay of Bengal**. Administered by the **Paradip Port Trust (PPT),** it holds the distinction of being the **first major port on the East Coast** established after independence. In 2020, the Union Cabinet approved the development of its inner harbour facilities and the **construction of a Western Dock** to accommodate cape-size vessels.

Along with **Deendayal Port and V.O. Chidambaranar Port, Paradip Port** has been designated as a **Green Hydrogen hub** by the government. Unlike minor ports, major ports like Paradip are **managed by central government** authorities and handle international trade, contributing significantly to India's maritime commerce.

India has 205 minor and intermediate ports, along with 13 major seaports (12 government-owned and one private)



6. KUMITTIPATHI VILLAGE (COIMBATORE, TN)

Context:

The rock paintings at **Kumittipathi village near Coimbatore** are significant testimonies to the prehistoric **Kongu region**.

Believed to be around 3,000 years old, these cave paintings **depict an elephant, a chariot, and scenes from the lives of early inhabitants**. Despite their cultural and historical importance, the paintings are at risk due to damage caused by miscreants.

What are Rock Paintings?

Rock paintings are **ancient artworks created by early humans** on natural rock surfaces using natural pigments like **ochre, charcoal, and clay**. These paintings provide insights into the lives, beliefs, and cultures of ancient societies.

Other such sites in India:

Rock Painting Site	Location	Description
Bhimbetka Rock Shelters	Madhya Pradesh	One of the oldest rock art sites globally, dating back to the **Paleolithic era.** Features over 700 rock shelters with paintings depicting hunting scenes, rituals, and daily life.
Edakkal Caves	Kerala	Situated in the **Wayanad district, features Neolithic rock engravings and paintings** dating back over 6,000 years. Depicts human and animal figures, symbols, and geometric patterns.
Rock Shelters of Padavayal	Kerala	Located in the **Wayanad district, contains prehistoric petroglyphs and paintings** from the Mesolithic and Neolithic periods. Artworks depict hunting scenes, human figures, and animals.
Rock Art Complex of Lakhudiyar	Uttarakhand	**Near Almora**, contains **petroglyphs and rock paintings** dating back to the Mesolithic and Neolithic periods. Features images of animals, humans, and geometric patterns.
Rock Art Sites of Chaturbhujnath Nala	Chhattisgarh	**Found in the Kanker district,** these rock shelters contain prehistoric paintings dating back thousands of years, including images of animals, humans, and abstract symbols.

About Kongu Region (or Kongu Nadu)

Kongu Nadu is a **region in Tamil Nadu (and some parts of Karnataka, and Kerala).**. It boasts diverse geography, including the **Western and Eastern Ghats** and rivers like Kaveri. **Coimbatore, Tiruppur, and Salem** are key urban centres. Historically, it was the seat of the **Cheras** and was later ruled by the **medieval Cholas, Vijayanagara Empire, and Madurai Nayaks**.