



# INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

## GOLD RESERVES

INDIA'S TOTAL GOLD RESERVES HELD BY THE RESERVE BANK OF INDIA (RBI) AMOUNT TO 854.73 METRIC TONNES, ACCORDING TO THE CENTRAL BANK'S LATEST REPORT.

28 OCT - 2 NOV 2024

# WEEKLY CURRENT AFFAIRS

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## GENERAL STUDIES – 2

Topics: Indian Constitution- historical underpinnings, evolution, features, amendments, significant provisions and basic structure; Comparison of the Indian constitutional scheme with that of other countries.

### 1. ELECTION EXPENDITURE INDIA VS USA

**Context:**

Election spending in India often surpasses the limits set by the Election Commission of India (ECI), pointing to challenges like influence-peddling and inequitable representation. Comparatively, countries such as the U.S. and U.K. emphasize transparency and donor influence limitations to regulate election financing.

**Present laws governing election expenditure in India:**

- **Rule 90 of the Conduct of Election Rules, 1961:** Sets expenditure limits for candidates based on election type and state size.
- **Section 77 of the Representation of the People Act, 1951:** Mandates that every candidate must maintain a separate account of all expenses incurred from nomination to result declaration.
- **Expenditure Statement Submission:** Candidates must submit a complete expenditure report to the Election Commission of India (ECI) within 30 days after election completion.
- **Disqualification for Non-Compliance:** Under Section 10A of the Representation of the People Act, 1951, failure to accurately report or exceeding expenditure limits may lead to a three-year disqualification by the ECI.
- **Political Party Expenditure:** While there is no cap on a party’s total spending, all registered parties are required to file their election expenditure reports to the ECI within 90 days post-election, addressing concerns around party expenditure exploitation.

**Current limit:**

Election Type	Larger States Expenditure Limit	Smaller States /UT Expenditure Limit	Party Spending Limit
Lok Sabha Elections	₹95 lakh	₹75 lakh	No limit
Legislative Assembly	₹40 lakh	₹28 lakh	No limit

**Comparison of election expenditure in India vs. the U.S:**

Aspect	India	United States
<b>Expenditure Limits</b>	Limit for candidates, no limit for political parties	Limits on contributions to candidates, no limit for Super political action committees (PACs’) independent spending
<b>Funding Sources</b>	Primarily self-funding and donations	Individual and PAC contributions, with Super PACs accepting unlimited funds
<b>Spending Transparency</b>	Limited transparency, with self-reported spending	High transparency due to campaign finance disclosures by the Federal Election Commission (FEC)
<b>Regulatory Body</b>	Election Commission of India	Federal Election Commission (FEC) and regulations around PACs and Super PACs
<b>Penalties for Violations</b>	Disqualification for up to three years	Hefty fines and disqualification, but Super PACs face fewer restrictions on independent spending
<b>Total Expenditure</b>	₹1,00,000 crore estimated for Lok Sabha 2024	U.S. \$16 billion (₹1,36,000 crore) estimated for the 2024 U.S. presidential and Congressional elections

### Way forward:

- **State funding of elections:** As per the Indrajit Gupta Committee (1998) and Law Commission (1999), consider partial state funding to reduce financial dependency on private donations.
- **Simultaneous elections:** Conducting elections simultaneously could help streamline expenditures, although constitutional challenges exist.
- **Cap on party expenditure:** Establish a ceiling on total party spending, calculated as candidate limits multiplied by the number of candidates.
- **Amend financial assistance laws:** Amend laws to count any financial assistance provided by political parties to candidates within the spending limit.
- **Enhanced judicial oversight:** Increase judicial capacity to handle election disputes swiftly, disincentivizing breaches of expenditure limits.

### Conclusion

India's election financing model has controls, yet lacks spending caps for parties, favoring wealthier candidates and creating imbalance. Implementing transparency and stricter caps, as recommended, could curb undue influence, improve fairness, and strengthen public trust in the electoral process.



#### Insta Links:

1. De-recognition-or-de-registration-of-political-parties

#### PYQ:

1. Simultaneous election to the Lok Sabha and the State Assemblies will limit the amount of time and money spent in electioneering but it will reduce the government's accountability to the people". Discuss. (UPSC-2017)

## 2. USA ELECTIONS

### Context:

In the United States, the President is elected not directly by popular vote but through a unique system known as the electoral college. This indirect voting system mandates that each state appoints electors who then cast their votes to determine the President.

### U.S. Presidential Election Process:

- **Governing articles:** The U.S. Constitution, particularly Article 2 and the 12th Amendment, govern the election process for the President and Vice-President.
- **Electoral college:**
  - **Structure:** The electoral college is composed of 538 electors, a figure derived from the total members of Congress (435 Representatives, 100 Senators) plus three electors for the District of Columbia.
  - **State representation:** Each state's number of electors equals its representation in Congress. **For example**, California has the most with 54, while smaller states like Delaware have the minimum of three.
  - **Voting procedure:** On election day, citizens vote for their preferred candidate. The party that wins the popular vote in each state appoints its slate of electors.
    - These electors meet in December to cast their votes based on their state's popular vote, with "winner-takes-all" rules applying in most states except Maine and Nebraska.
  - **Faithless electors:** Electors who defy the popular vote in their state are known as faithless electors. Some states impose penalties for this, though their impact on election outcomes has been negligible.
- **If a Tie Occurs:**
  - **Historical Precedent:** A tie has happened twice (1800 and 1824), resolved by the House of Representatives.
  - **House vote:** In the case of a tie, each state delegation in the House gets one vote to select the President. A candidate must secure 26 state votes to win.

- If no decision is reached by the inauguration date, the Vice-President, chosen by the Senate, temporarily assumes the role until a President is elected.
- Comparison **of U.S. and Indian election systems:**

<b>Aspect</b>	<b>U.S. Presidential Election</b>	<b>Indian Presidential Election</b>
<b>Electoral Body</b>	Electoral College with 538 electors	Electoral College of MPs and MLAs
<b>Constitutional Basis</b>	Article 2 and the 12th Amendment	Articles 52 to 71
<b>Method of Elector Selection</b>	Electors are chosen by popular vote in each state	MPs and MLAs act as electors, no public voting
<b>Voting System</b>	Indirect, state-by-state “winner-takes-all” for most states	Single transferable vote with proportional representation
<b>Role of Faithless Electors</b>	Permitted in some states, with limited impact	Not applicable
<b>Handling of Ties</b>	House of Representatives chooses the President	Re-election by Electoral College if no candidate secures majority
<b>Election Frequency</b>	Every 4 years	Every 5 years
<b>Inauguration Date</b>	January 20 following the election year	Within a few days after the election results

**Conclusion:**

The U.S. and India’s Electoral Colleges reflect distinct democratic contexts: the U.S. system balances state representation but may diverge from the popular vote, while India’s system ensures proportional representation through Parliament and state assemblies. Both illustrate diverse democratic approaches to uphold federalism and constitutional integrity.



**Insta Links:**

1. Election-expenditure-India-vs-USA

**PYQ:**

1. ‘Simultaneous election to the Lok Sabha and the State Assemblies will limit the amount of time and money spent in electioneering but it will reduce the government’s accountability to the people’ Discuss. (UPSC-2017)

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.

### 3. CENSUS EXERCISE

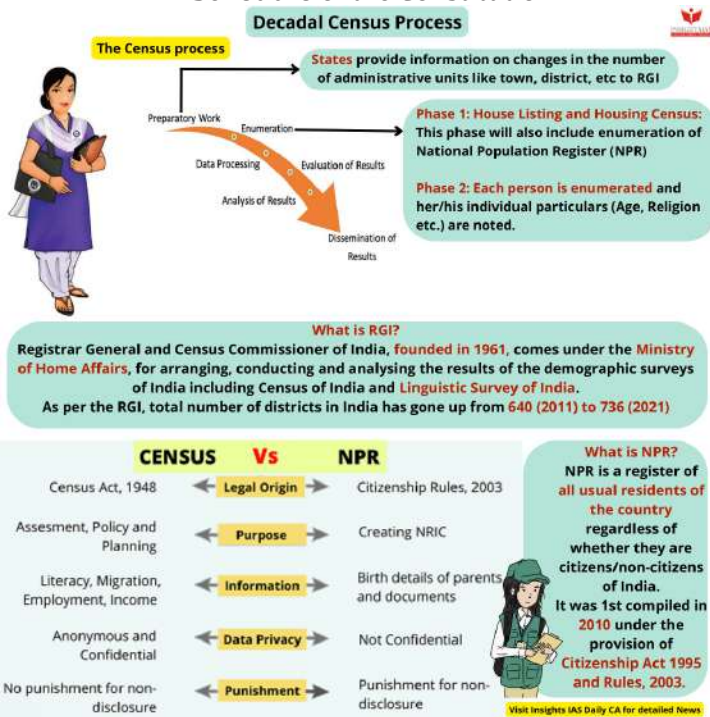
**Context:**

The Indian government has announced plans to initiate the delayed Census exercise next year, expected to conclude by 2026. This Census will impact two major processes: **delimitation** of constituencies and the **reservation for women** in legislative bodies.

**About Census in India:**

- **Frequency:** Conducted every 10 years, India’s Census provides essential population data.
- **Historical background:**
  - The first Indian city census was conducted in **1830** by Henry Walter in Dacca.

- The first non-synchronous, nationwide census took place in **1872** under Lord Mayo.
- The **first synchronous census** occurred in **1881**, led by Census Commissioner W.C. Plowden, establishing the decennial cycle.
- **Global comparison:** Many countries, such as the United States and the United Kingdom, also conduct a census every 10 years, while some, like Canada and Japan, conduct it every five years.
- **Responsible authority:** The **Office of the Registrar General and Census Commissioner** under the **Ministry of Home Affairs** manages India's Census.
- **Legal framework:**
  - The Census is governed by the **Census Act of 1948**, introduced by Sardar Vallabhbhai Patel.
  - It is a **Union subject** under **Article 246** and is listed as item **69 in the Seventh Schedule** of the Constitution.



population of 1.5 billion in 2026, significant seat adjustments may occur to represent population growth accurately.

**Constitutional changes:**

- **Article 82:** Requires re-adjustment of seats in the House of the People (Lok Sabha) and legislative Assemblies after each Census.
- **42nd and 84th amendments:** Amendments in 1976 and 2001 froze delimitation until the first Census after 2026.
- **2026 census dependency:** The first Census post-2026 will serve as a reference for re-adjustment under Article 82, potentially requiring further amendments for early implementation.
- **Key articles affected:** Articles 82, 81 (Lok Sabha composition), 170 (state Assemblies), and 55 (President's election) must be adjusted to align with any changes to seat allocations.

**Political challenges:**

- **Constitutional mandate:** The 128th Constitutional Amendment mandates 33% women's reservation in Lok Sabha and state Assemblies.
- **Contingent on delimitation:** The reservation will be implemented only after delimitation based on the first Census conducted post-2026.
- **Impact on male representation:** Women's reservation in the current 545-member Lok Sabha would reserve 182 seats for women, impacting the availability of seats for male representatives.
- **Seat redistribution:** Delimitation can help reallocate seats without reducing current representation, helping to facilitate the women's quota.

**Way forward:**

- **Constitutional amendments:** Update Articles 82, 81, 170, and 55 to align with current population data for balanced representation.
- **Balanced delimitation approach:** Establish fair delimitation criteria beyond population, incorporating regional growth considerations.
- **Women's reservation implementation:** Initiate steps to ensure smooth seat reallocation to accommodate 33% reservation.
- **Strengthen regional consensus:** Work towards a balanced approach to address the North-South divide in population growth.
- **Enhanced stakeholder engagement:** Build support from key political stakeholders for smoother legislative amendments and policy adoption.

**Conclusion:**

The upcoming Census, delimitation, and women's reservation adjustments are pivotal for aligning India's legislative representation with its demographic reality. These changes demand legal amendments, regional

**About Delimitation exercise:**

- **Definition:** Delimitation is the process of redrawing the boundaries of electoral constituencies to reflect population changes. A Delimitation Commission oversees this exercise.
- **Historical Context:** India has conducted the Census seven times since independence, yet only four delimitations (1952, 1953, 1973, and 2002) have occurred.
- **Last Delimitation:** The previous delimitation in 2002 only adjusted boundaries without changing the number of seats, which has remained based on the 1971 Census for Lok Sabha and the 2001 Census for state Assemblies.
- **Expected Changes:** Based on the estimated

consensus, and a commitment to equitable representation, ensuring legislative reforms reflect India's evolving socio-political landscape.

#### Insta Links:

1. No-population-census-in-the-dark-without-vital-data

#### PYQ:

1. Consider the following statements:
  1. Between Census 1951 and Census 2001, the density of the population of India has increased more than three times.
  2. Between Census 1951 and Census 2001, the annual growth rate (exponential) of the population of India has doubled.

Which of the statements given above is/are correct? (UPSC-2009)

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2



Answer: d)

## GENERAL STUDIES – 3

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

### 4. UNPAID LABOR

#### Context:

The paper “**Valuation of Unpaid Household Activities in India**” by Sahoo, Sarkar, and Kumar sheds light on the economic significance of unpaid household work, particularly the disproportionate burden borne by women.

#### Unpaid work and India's status:

- **High burden on women:** Indian women spend an average of 36 hours per week on unpaid domestic work, compared to 16 hours for men.
- **Major contributor to economy:** Unpaid work in India contributes approximately ₹22.7 lakh crore, around 7.5% of GDP.
- **Labor force gap:** Women outside the labor force spend over seven hours daily on unpaid work, limiting their ability to participate in paid employment.

#### Comparison with global trends:

- **Global perspective:** Unpaid work accounts for between 10% to 60% of GDP worldwide, varying significantly across countries.
- **Examples:** APEC member economies estimate unpaid work at 9% of GDP; in Australia, it represents up to 41.3%, while it is only 5.5% in Thailand.
- **SDG integration:** Recognizing unpaid labor aligns with UN SDG 5, which promotes gender equality and values unpaid care and domestic work.

#### Economic value of unpaid work in India:

- **Monetary valuation:** Estimated at ₹49.5 lakh crore (24.6% of GDP) using the Gross Opportunity Cost method and ₹65.1 lakh crore (32.4% of GDP) using the Replacement Cost method for 2019–20.
- **Pandemic impact:** During COVID-19, the value rose to 27.2% (GOC) and 42.3% (RCM) of GDP, reflecting increased household contributions.

#### Consequences of unpaid work:

- **Gender inequality:** Disproportionate unpaid work for women perpetuates gender disparity, restricting women's financial independence and professional growth.
- **Economic underutilization:** Excluding unpaid work from GDP undervalues substantial economic contributions, leading to an incomplete view of national productivity.
- **Reduced workforce participation:** High unpaid workload limits women's entry into the formal labor market, affecting overall labor force productivity and economic growth.
- **Mental and physical health impact:** The burden of unpaid work can lead to stress, burnout, and negative health outcomes for those disproportionately responsible for it.
- **Policy blind spot:** Without quantification, unpaid work remains unaddressed in policy-making, leaving a significant economic and social issue unresolved.

**New Zealand's Wellbeing Budget Case Study:** New Zealand's 2019 Wellbeing Budget emphasizes citizen well-being alongside economic growth, targeting mental health, child welfare, and gender equity. By accounting for unpaid and domestic labor in policy, it promotes a holistic approach to development, balancing economic and social welfare.

#### Way ahead:

- **Policy recognition and inclusion:** Develop frameworks to recognize and account for unpaid work in national economic indicators, acknowledging its economic value.

- **Redistribution of domestic labor:** Encourage shared domestic responsibilities to address gender disparities, supported by public awareness and educational initiatives.
- **Enhanced data collection:** Conduct frequent and comprehensive Time Use Surveys to obtain accurate data on unpaid labor and support evidence-based policymaking.
- **Supportive services:** Introduce affordable childcare, eldercare, and family support services to ease the unpaid workload on primary caregivers, mostly women.
- **Financial support mechanisms:** Consider direct or indirect support, such as tax credits or social security benefits for primary caregivers, to offset unpaid work contributions.

### Conclusion:

Integrating unpaid labor into economic assessments would not only highlight the economic value of women's contributions but also foster more equitable policies, supporting India's growth and aligning with global goals for sustainable development.



#### Insta Links:

1. [Issues-related-to-women's-unpaid-work](#)

#### PYQ:

1. Distinguish between 'care economy' and 'monetized economy'. How can care economy be brought into a monetized economy through women empowerment? (UPSC-2023)

[Topics: Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System: objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.](#)

## 5. INDIA AND FERTILIZER IMPORTS

### Context:

With conflicts in **Ukraine and Gaza escalating**, global concerns about the stability of fertilizer supplies have intensified. India, highly dependent on imports for various fertilizers, is now considering strategies to enhance domestic production and reduce its reliance on foreign sources.

### India's fertilizer imports:

- **Current dependence:** India relies on imports for about 20% of its urea, 50-60% of diammonium phosphate (DAP), and 100% of muriate of potash (MOP).
  - **Primary import sources:** Major import partners include China, Russia, Saudi Arabia, UAE, Oman, Iran, and Egypt.
- Source:** Standing Committee on Chemicals and Fertilizers Report, August 2023.

### India's fertilizer production:

Category	Details
<b>Total Production (2021-22)</b>	435.95 Lakh Metric Tonnes (LMT), covering part of the total demand of 579.67 LMT
<b>Production by Type</b>	<ul style="list-style-type: none"> <li>• <b>Urea:</b> 250.72 LMT;</li> <li>• <b>Di-Ammonium Phosphate (DAP):</b> 42.22 LMT;</li> <li>• <b>Nitrogen, Phosphorus, And Potassium (NPK):</b> 89.67 LMT;</li> <li>• <b>Single superphosphate (SSP):</b> 53.34 LMT;</li> <li>• <b>Muriate of Potassium (MOP):</b> Exclusively imported</li> </ul>
<b>Subsidy Allocation (2023-24)</b>	₹1.79 lakh crore, including indigenous and imported urea, as well as Phosphorus & Potassium fertilizers

**Source:** Department of Fertilizers, Government of India

### Challenges:

- **High import dependency:** Given India's reliance on imports, disruptions in global supply chains due to geopolitical conflicts directly impact availability and prices.
- **Limited production growth:** While production has increased marginally from 385.39 LMT in 2014-15 to 435.95 LMT in 2021-22, it remains insufficient to meet domestic demand fully.
- **Fluctuating global prices:** As oil prices rise due to regional conflicts, the cost of petroleum-based fertilizers will likely surge, raising India's fertilizer import costs.
- **Environmental concerns:** The overuse of chemical fertilizers raises concerns about soil health and long-term sustainability.

### Recommendations and way forward:

- **Expand domestic production:** Continue setting up new urea plants, similar to the six new plants established since the 2012 investment policy.

Boosting domestic capacity could mitigate dependency on imports.

- **Promote alternative solutions:** Adopt nano-urea, encourage natural farming methods, and expand bio-fertilizer use to reduce chemical fertilizer dependency.
- **Invest in R&D:** Encourage research and innovation in alternative fertilizers and efficient farming practices.
- **Policy reforms:** Create an environment that encourages private and cooperative sector investment in fertilizer production.
- **Long-term sustainability initiatives:** Implement soil health management programs and train farmers in efficient fertilizer use.

### Conclusion:

Addressing India's fertilizer challenges requires a mix of increased domestic production, innovative practices, and strategic policy support. The government's steps toward self-sufficiency, alongside sustainable practices, will be crucial to stabilizing the agricultural sector in the face of global uncertainties.



### Insta Links:

1. Fertilizer-support

### PYQ:

1. How do subsidies affect the cropping pattern, crop diversity and the economy of farmers? What is the significance of crop insurance, minimum support price and food processing for small and marginal farmers? (UPSC-2017)
2. In what way could replacement of price subsidy with direct benefit Transfer (DBT) change the scenario of subsidies in India? Discuss. (UPSC-2015)

Topics: [Infrastructure: Energy, Ports, Roads, Airports, Railways etc.](#)

## 6. SECURING THE SKIES: FROM AIRPORT TO AIRCRAFT

### Context:

In recent weeks, Indian airlines like Air India, Vistara, IndiGo, and others have encountered numerous bomb threats, leading to emergency responses, rerouting, and even fighter jet interception.

### Rise in threats:

- Threats to flights have surged, mostly originating

from social media platforms.

- Intelligence agencies are tracking these threats and IP addresses, with one detention made so far.
- The Union Civil Aviation Minister highlighted that around 275 threats were issued for about 48,000 flights, prompting discussions on updating aviation laws for stricter punishments.

### About aviation security architecture:

- **International guidelines:** The International Civil Aviation Organization (ICAO) sets standards through its Annex 17-Aviation Security (under the Chicago Convention) to counteract threats.
- **ICAO resources:** The Aviation Security Manual (Doc 8973) aids ICAO member states with implementing safety measures against unlawful interference.
- **National oversight:** In India, the Bureau of Civil Aviation Security oversees security protocols, with the Directorate General of Civil Aviation focusing on safety. Other agencies like the CISF, NSG, and Intelligence Bureau assist in threat management.

### Chicago Convention Overview:

- **Purpose:** Established foundational principles for international civil aviation, creating the ICAO to oversee and harmonize global aviation standards.
- **Main provisions:** Regulates aspects like airspace, aircraft registration, aviation safety, security, and environmental sustainability, along with detailing signatory rights in air travel.
- **Establishment:** Signed on December 7, 1944, in Chicago by 52 nations and went into effect on April 4, 1947, when ICAO formally began operations.
- **Global participation:** As of March 2019, the Convention includes 193 countries, comprising nearly all UN member states, except Liechtenstein, although it is extended there through Switzerland's ratification.
- **Non-UN member:** The Cook Islands participates in the Convention despite not being a UN member.

### Protocol for handling bomb threats in aviation:

#### 1. Pre-departure threats:

- Aircraft is moved to a secured bay for thorough checks.
- Passengers and baggage undergo additional screening.

#### 2. In-flight threats:

- The **Bomb Threat Assessment Committee (BTAC)** at both the departure and destination airports assesses the threat.
- If the threat is deemed **"specific"** and the aircraft is in domestic airspace, the plane

is diverted to the nearest airport. Security staff inspect the aircraft after evacuation of crew and passengers.

- If the aircraft has exited Indian airspace, Air Traffic Control contacts foreign authorities to coordinate the response.

**NOTE:** The Chicago convention and protocol are also important for your preliminary exam. Kindly make note of it as well.

#### Government actions to counteract bomb threats:

- **Social media accountability:**
  - Platforms like X (formerly Twitter), Meta, and Google are required to promptly share user details of accounts posting threats.
  - Platforms may lose immunity under the IT Act if they fail to remove false alerts and could face action under the Bharatiya Nyaya Sanhita 2023.
- **Enhanced protocols:**
  - Directors of CISF and BCAS briefed the Union Home Secretary on strengthening ground operations.
  - The BTAC protocol has been updated to incorporate “red flag” assessments for improved threat classification.

#### Challenges:

- **Technological limitations:** Current systems lack advanced capabilities for tracking and analyzing threat calls, impacting quick response.
- **Regulatory and policy gaps:** Existing laws need updates to address threats comprehensively, including stricter penalties for ground-based incidents.
- **Communication gaps:** Coordination among agencies involved in aviation security is inconsistent, leading to delayed or fragmented responses.
- **Absence of a threat database:** Lack of a centralized, global hoax call database limits information-sharing and tracking of recurrent threats.
- **Resource demands:** Security improvements require significant investment in technology, skilled manpower, and infrastructure.

#### Way forward:

- **Invest in advanced technology:** Incorporate AI-driven threat analysis, quantum computing, and enhanced tracking for real-time threat management.
- **Update aviation laws:** Revise regulations, such as the Aircraft Act of 1934, to allow prompt action against security threats, even for grounded flights.
- **Strengthen communication channels:** Streamline cross-agency communication protocols to ensure rapid, unified responses during security threats.

- **Establish a global hoax database:** Create a collaborative platform for sharing hoax-related data globally, integrating AI for initial assessments.
- **Enhance funding for security measures:** Allocate more resources to develop cybersecurity frameworks and conduct predictive profiling for potential threats.

#### Conclusion:

The rise in hoax threats poses systemic challenges in India’s aviation security. Tackling these requires updated legislation, better technological investment, and coordination among agencies under international guidelines.



#### Insta Links:

1. Delhi declaration-on-civil-aviation
2. Civil-aviation-in-India

#### PYQ:

1. Examine the development of Airports in India through joint ventures under Public-Private Partnership (PPP) model. What are the challenges faced by the authorities in this regard? (UPSC-2017)

Topics: Awareness in space.

## 7. BEYOND EARTH: INDIA'S VISION FOR SPACE EXPLORATION

#### Context:

India’s space program, led by the Indian Space Research Organisation (ISRO), is expanding its horizons with a series of ambitious missions, new technologies, and partnerships, signaling a new phase in space exploration.

#### India’s Space Planning highlights:

- **Gaganyaan Missions:** Four human spaceflight missions and one uncrewed flight.
- **Bharatiya Antariksh Station:** Four test missions planned for India’s first space station launch by 2028.
- **Next Generation Launch Vehicle (NGLV):** Approved for ₹8,240 crore, developed in partnership with the private sector.
- **Venus Orbiter Mission:** Scheduled for 2028 to study Venus’s atmospheric and surface conditions.

- **Chandrayaan-4 (2027):** Moon sample-return mission to collect lunar soil for Earth analysis.
- **LUPEX with Japan:** Collaborative Lunar Polar Exploration Mission.
- **Space-Based Surveillance (SBS-3):** Comprehensive satellite network for advanced surveillance capabilities.
- **NISAR & Proba-3 Satellites:** Focus on Earth observation and Sun's corona study.
- **Private Sector Involvement:** Green propulsion systems by Manastu Space, low-orbit satellites by Bellatrix Aerospace, and satellite assembly by Ananth Technologies.

**Challenges in India's Space Planning:**

- **Limited commercial market access:** India's 2.6% share in the global space economy limits commercial space ventures.
- **Technological dependency:** Despite ranking 7th globally, India still relies on imports for advanced launch vehicle components.
- **Policy and legal gaps:** Lack of comprehensive space policy delays regulatory developments.
- **Budget constraints:** India's modest budget of 0.05% of GDP limits its scope for high-cost missions.
- **Geopolitical considerations:** Collaborations like the Artemis Accords require diplomatic balancing amid geopolitical tensions.

**Way forward:**

- **Boost private sector engagement:** Aligns with global trends and enhances commercial capabilities.
- **Strengthen human spaceflight program:** Invests in astronaut training and infrastructure for crewed missions.
- **Increase budget allocation:** Supports ambitious space goals and complex missions.
- **Develop clear, forward-looking policies:** Ensures safe, sustainable space expansion.
- **Expand international partnerships:** Promotes peaceful, inclusive space exploration.

**Insta Links:**

1. ISRO-DBT agreement
2. ISRO-third-launch-pad



**PYQ:**

1. What is India's plan to have its own space station and how will it benefit our space programme? (UPSC-2019)
2. What is the main task of India's third moon mission which could not be achieved in its earlier mission? List the countries that have achieved this task. Introduce the

subsystems in the spacecraft launched and explain the role of the 'Virtual Launch Control Centre' at the Vikram Sarabhai Space Centre which contributed to the successful launch from Sriharikota. (UPSC-2023)

**8. BLACK HOLE TRIPLE SYSTEM**

**Context:**

For the first time, scientists have discovered a rare "black hole triple" system located around 8,000 light years away in the constellation of Cygnus. This unique configuration comprises a black hole consuming a nearby star, with another distant star orbiting the system.



**About Black Hole Triple**

- **Definition:** A "black hole triple" system consists of a black hole with two companion stars. In the discovered system, one star orbits the black hole closely, while the second star is positioned at a far greater distance, orbiting every 70,000 years.
- **Discovery:**
  - The black hole, named **V404 Cygni**, was identified by researchers while examining a repository of astronomical observations.
  - Located in the **constellation Cygnus**, V404 Cygni has a mass approximately nine times that of the Sun.
  - The presence of gravitational interactions among the two stars confirmed the system's triple configuration.
- **Significance:**
  - **Challenges traditional theories:** The discovery questions the conventional understanding of black hole formation, which typically involves a supernova explosion that ejects nearby stars.
  - **Direct collapse formation:** V404 Cygni is thought to have formed through a "direct

collapse” or “failed supernova,” where the star collapsed into a black hole without an explosive event.

- **Retention of nearby stars:** This gentler formation process enabled the black hole to retain its nearby stars, which would have been ejected in a supernova scenario.
- **Implications for binary systems:** This finding suggests that some known binary black hole systems could have originally been triple systems, with the black hole later consuming one of its companions.

#### Insta Links:

1. Black-holes
2. Quasar



#### PYQ:

1. Recently, scientists observed the merger of giant ‘blackholes’ billions of light-years away from the Earth. What is the significance of this observation? (UPSC-2019)
  - (a) ‘Higgs boson particles’ were detected
  - (b) ‘Gravitational waves’ were detected.
  - (c) Possibility of inter-galactic space travel through ‘wormhole’ was confirmed.
  - (d) It enabled the scientists to understand ‘singularity’

**Answer: b)**

[Topics: Conservation related issues, environmental pollution and degradation, environmental impact assessment.](#)

## 9. 1.5°C GOAL & CLIMATE CRISIS

### Context:

As world leaders prepare for the annual climate conference in Baku, a renewed focus on climate finance and stringent emission reduction is crucial to prevent severe climate repercussions.

### Unabated rise of emissions:

- **Current emissions:** In 2023, global emissions reached 57.1 billion tonnes of CO<sub>2</sub> equivalent, marking a 1.3% increase from 2022.
- **Historical trend:** Emissions have increased yearly except in 2020, when the COVID-19 pandemic briefly reduced global activity.

- **Necessary target:** To meet the Paris Agreement’s 1.5°C goal, emissions must peak by 2025 and steadily decline by at least 43% from 2019 levels by 2030. Current projections fall significantly short of this target.

### Why there is no quick relief from warming?

- **Accumulated greenhouse gases:** Global warming is driven by accumulated CO<sub>2</sub> in the atmosphere, which can persist for hundreds of years.
  - **Datapoint:** Carbon dioxide concentrations reached 420 ppm in 2023, over 150% higher than pre-industrial levels.
- **Slow impact of reducing emissions:** Even if emissions peak and decline, the impact on warming will be gradual due to the long atmospheric lifespan of pollutants.
- **Methane and nitrous oxide levels:** Other gases like methane and nitrous oxide have also reached record concentrations, further intensifying warming.

### Missing the targets:

- **Temperature threshold breach:** In 2023, the global temperature was 1.45°C above pre-industrial levels, the highest on record.
  - **WMO projection:** Average annual global temperatures could breach the 1.5°C threshold within the next few years.
- **2030 Milestone:** The IPCC recommends a 43% reduction in emissions by 2030 from 2019 levels; however, current projections show only a 2.6% reduction, far from the required target.
- **Decadal average:** Between 2014-2023, global temperatures averaged 1.2°C above pre-industrial levels, pushing closer to the 1.5°C threshold.

### Way Ahead

- **Accelerated clean energy transition:** Countries must expedite the shift to renewable energy sources to reduce dependence on fossil fuels.
- **Climate finance agreement:** The upcoming Baku climate conference should finalize a global finance deal to support ambitious climate actions, especially in developing nations.
- **Enhanced carbon reduction commitments:** Nations should revise their 2030 emissions targets with more stringent reductions to approach the 43% goal.
- **Invest in carbon capture:** Technologies like carbon capture and storage should be scaled up to address the excess greenhouse gases in the atmosphere.
- **Focus on methane reductions:** Reducing non-CO<sub>2</sub> emissions, especially methane, can have immediate benefits in slowing warming rates.

### Conclusion:

Without drastic and immediate action, the 1.5°C

target will likely remain out of reach. As UN Secretary-General António Guterres said, **“The climate crisis is a code red for humanity.”** Achieving meaningful progress requires unwavering global commitment, substantial financial resources, and enhanced climate policies across all nations.



**Insta Links:**

1. GHG-bulletin
2. Climate-change-and-associated-issues

**PYQ:**

1. Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. (UPSC-2022)
2. Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? (UPSC-2021)

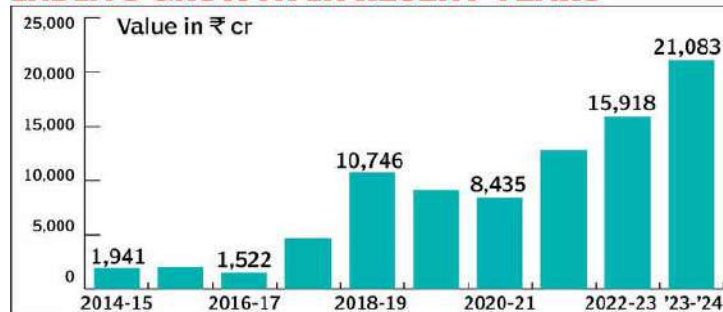
Topics: Various Security forces and agencies and their mandate.

## 10. INDIA'S DEFENCE REVOLUTION

**Context:**

The recent inauguration of the Tata Aircraft Complex at Tata Advanced Systems Limited (TASL) in Vadodra, Gujarat, marks a significant achievement for India's "Atmanirbhar Bharat" mission, further advancing the nation's self-reliance in defense manufacturing.

### INDIA'S GROWTH IN RECENT YEARS



**Rise in Defense Production: (Source: PIB Report)**

- **Record production:** India's defense production achieved a record high in FY 2023-24, reaching ₹1.27 lakh crore.
  - This marks an approximate 174% growth

from ₹46,429 crore in 2014-15.

- **Key Driver:** The rise is attributed to initiatives like the Make in India campaign, focused on bolstering indigenous manufacturing.
- **Increased domestic manufacturing:** Over 65% of India's defense needs are now met domestically, reducing import dependency significantly.
- **Diverse industry base:** The defense sector includes 16 Defense Public Sector Undertakings (DPSUs), over 430 licensed private companies, and approximately 16,000 MSMEs.
- **Private sector contribution:** Currently, 21% of defense production comes from private industry participants, contributing to India's self-reliance in defense.

**India's Defense Exports Surge:**

- **Historic growth in exports:** Defense exports increased from ₹686 crore in FY 2013-14 to ₹21,083 crore in FY 2023-24, representing a 30-fold rise.
- **Global reach:** India exports defense equipment to over 100 countries, with the U.S., France, and Armenia being top destinations.
- **Export target:** The government has set a target to increase defense exports further, **aiming for ₹50,000 crore by 2029**, solidifying India's role as a reliable defense partner on the global stage.

**Key Government Initiatives:**

- **Liberalized FDI:** Increased to 74% via the Automatic Route and up to 100% through the Government Route.
- **Budget Allocation:** ₹6,21,940.85 crore allocated to defense for FY 2024-25.
- **Domestic Procurement Priority:** Emphasis on local sourcing under the **Defense Acquisition Procedure (DAP)-2020**.
- **Positive Indigenization Lists:** Import embargo on 509 defense items and 5,012 DPSU items.
- **Simplified Licensing:** Streamlined process with longer validity.
- **iDEX Scheme:** Engages MSMEs and startups for defense innovation.
- **Defence Industrial Corridors:** In Uttar Pradesh and Tamil Nadu to bolster defense manufacturing.
- **Domestic R&D:** Opened to industry and startups to promote collaboration.
- **Domestic Procurement Allocation:** 75% of Capital Acquisition funds earmarked for local procurement in FY 2024-25.

**Key data points on Indian defence sector:**

Aspect	Details
<b>Top Export Markets</b>	Armenia, the U.S., and France are leading importers. Armenia buys major systems (e.g., Akash, Pinaka); U.S. imports components.
<b>Export Record</b>	Defence exports reached ₹21,083 crore (\$2.6 billion) in 2023-24; goal is ₹50,000 crore by 2028-29.
<b>Strategic Collaborations</b>	Partnerships include BrahMos missiles for the Philippines; Brazil seeks co-production for advanced Akash missiles.
<b>Indigenous Production</b>	Achieved ₹1.2 lakh crore in 2023-24; target of ₹3 lakh crore by 2028-29 under "Aatmanirbhar Bharat" initiative.
<b>Industrial Base Expansion</b>	Includes 16 PSUs, 430 licensed companies, and 16,000 MSMEs; threefold growth since 2014-15; private sector at 21%.
<b>Global Standing</b>	Despite growth, India remains the largest arms importer (9.8% of global imports, 2019-2023).

**NOTE:** From prelims perspective try to memorise the targets, trends and major buyer of Indian weapons (Armenia). From mains perspective remember the Indian performance and few data to fetch more marks.

**Challenges:**

- **Technological gaps:** Despite progress, India relies on foreign suppliers for critical technologies in areas such as aerospace and advanced electronics.
- **Quality standards:** Private sector players face challenges meeting high standards, especially in high-tech segments like avionics and missile technology.
- **Funding constraints:** Despite budget increases, additional resources are needed for R&D and infrastructure to keep pace with growing demands.
- **Bureaucratic hurdles:** Procedural delays can hinder quick adoption and implementation of projects.
- **Limited skilled workforce:** Developing and retaining a skilled workforce in specialized areas remains challenging.

**Way ahead:**

- **Enhanced private sector role:** Encouraging private sector participation, particularly in research-intensive domains.
- **Increased budget for R&D:** To maintain momentum and foster innovation in high-tech defense segments.
- **International collaborations:** Leverage strategic partnerships for technology transfer and joint ventures in defense.
- **Skill development:** Initiatives to build and retain talent in aerospace, electronics, and other defense-oriented skills.
- **Streamlined processes:** Further simplify procurement and licensing procedures to foster a conducive environment for innovation.

**Conclusion:**

India’s drive for defense self-reliance reflects a strong commitment to reducing imports, bolstering national security, and emerging as a global arms industry player. Ambitious 2029 targets aim to make India a defense manufacturing hub, supported by progressive policies and a growing domestic industry.

**Insta Links:**

1. Defence-diplomacy
2. Indias-defence-exports

**PYQ:**

1. Analyze the multidimensional challenges posed by external state and non-state actors, to the internal security of India. Also discuss measures required to be taken to combat these threats. (UPSC - 2021)



- Analyze internal security threats and transborder crimes along Myanmar, Bangladesh and Pakistan borders including Line of Control (LoC). Also discuss the role played by various security forces in this regard. (UPSC - 2020)

## CONTENT FOR MAINS ENRICHMENT

Topic in News	Usage in Answers
<p><b>1. ECO-CRAFTS FROM WATER HYACINTH</b></p>	<p>The Krishna district administration, in partnership with Lepakshi Handicrafts and Andhra Pradesh Handicrafts Development Organisation, is transforming water hyacinth plant into eco-friendly handicrafts, empowering rural women, addressing environmental concerns, and boosting local craftsmanship.</p> <p><b>Relevance in UPSC Syllabus:</b></p> <ul style="list-style-type: none"> <li>• <b>GS Paper II - Governance and Social Justice</b> <ul style="list-style-type: none"> <li>○ <b>Women Empowerment</b></li> <li>○ <b>Government Schemes and Initiatives</b></li> </ul> </li> <li>• <b>GS Paper III - Environment and Ecology</b> <ul style="list-style-type: none"> <li>○ <b>Invasive Species Management</b></li> <li>○ <b>Sustainable Development</b></li> </ul> </li> <li>• <b>GS Paper IV - Ethics in Public Administration</b> <ul style="list-style-type: none"> <li>○ <b>Innovative Governance Solutions</b></li> <li>○ <b>Community-Centric Policies</b></li> </ul> </li> <li>• <b>Optional Papers (Sociology, Public Administration)</b> <ul style="list-style-type: none"> <li>○ <b>Role of Community and Gender in Economic Development:</b> Illustrative example for rural upliftment and gender equality.</li> </ul> </li> </ul>
<p><b>2. FEDERALISM</b></p>	<p><b>Context:</b> Chief Justice of India recently highlighted the evolving role of federalism in promoting democracy and upholding constitutional ideals. At the Loksatta Annual Lecture, he stressed that modern challenges like <b>climate change, AI, and cybercrime</b> require Union and state collaboration, emphasizing the need for greater synergy.</p> <p><b>These lines from his speech capture CJI Chandrachud’s vision of a dynamic and cooperative federalism:</b></p> <ul style="list-style-type: none"> <li>• “Federalism should foster democracy, equality, liberty, dignity, and fraternity.”</li> <li>• “Modern challenges like climate change and cybercrime go beyond traditional federal boundaries.”</li> <li>• “The Constitution was intended to be transformative, not static.”</li> <li>• “Indian federalism is unique; it values equality and liberty, not as a mask but as a core principle.”</li> <li>• “Constructive dialogue between the Union and States is vital for federalism to thrive.”</li> <li>• “Courts play a key role in shaping and safeguarding federal principles.”</li> </ul> <p><b>NOTE:</b> Using these statements by CJI in your answer, especially the introduction and conclusion, will help in fetching additional marks in the exam.</p> <p><b>Relevance in UPSC syllabus:</b></p> <ul style="list-style-type: none"> <li>• <b>GS Paper II - Indian Constitution and Governance</b> <ul style="list-style-type: none"> <li>○ <b>Federalism in India</b></li> <li>○ <b>Cooperative and Competitive Federalism</b></li> <li>○ <b>Judiciary and Federalism</b></li> </ul> </li> <li>• <b>Essay Paper</b> <ul style="list-style-type: none"> <li>○ <b>Federalism as a Dynamic Principle</b></li> </ul> </li> <li>• <b>Optional Papers - Political Science and Public Administration</b> <ul style="list-style-type: none"> <li>○ <b>Indian Political System</b></li> </ul> </li> </ul>

### 3. HULA PARTIES – MAN ANIMAL CON- FLICT

**Context:** The human-elephant conflict in India has significantly impacted both communities and wildlife, particularly in the Jhargram district of West Bengal, where close interactions between populated areas and forest patches often lead to confrontations. One notable approach for managing such conflicts is the use of **Hula Parties** by the forest department, a practice that has drawn criticism for its ethical and environmental implications.

**About Hula Party:**

- **Definition:** Hula Parties are groups, typically made up of 15-30 locals, hired informally by the forest department to prevent elephants from entering populated areas.
- **Tools and method:** They use **torches (hulas)**, consisting of iron rods with live fire, sticks, and noise to ward off elephants. In emergencies, torches are used to create barriers to reduce human-elephant interaction.
- **Legal and ethical issues:** Using fire against protected species like elephants, categorized under **Schedule I of the Wildlife Protection Act**, is illegal. There are also safety concerns and ethical considerations regarding potential harm to elephants.
- **Recent controversy:** Following the tragic death of a pregnant elephant, the use of torches by hula parties has come under scrutiny, with calls for better-trained personnel and non-violent conflict resolution.

**Relevance in UPSC Syllabus:**

- **Ethics in Administration**
- **Environment and Ecology**
- **Science and Technology**
- **Governance and Policy**

### 4. AANDHI VILLAGE – GREEN TECHNO- LOGY

**Context:** In Aandhi village, located just 43 kilometers from Jaipur, Rajasthan, a transformation toward a zero-waste model is underway through the integration of advanced green technologies. Food waste, agro waste, wastewater, and other sources from across the village are being converted into resources. Using an array of sustainable technologies like an Organic Waste Bio-Methanation Plant, Vermifiltration, and Constructed Wetlands, the village has started generating clean energy, treating wastewater, and recycling waste materials. This project, led by the Climate, Energy, and Sustainable Technology (CEST) Division, stands as a replicable model for rural India, setting a powerful example of resource recovery and environmental conservation through innovative interventions.

**Relevance in UPSC Syllabus:**

- **Sustainable Development and Waste Management**
- **Case Study for Rural Development**
- **Innovation and Climate Resilience**
- **Governance and Community Engagement**

<h3>5. SWACHH DIWALI SHUBH DIWALI CAMPAIGN</h3>	<p><b>Context:</b> The “Swachh Diwali Shubh Diwali” campaign, launched by the Ministry of Housing and Urban Affairs (MoHUA) from October 28 to November 3, 2024, aims to integrate the festival of Diwali with the Swachh Bharat Mission’s goals of cleanliness and sustainability.</p> <p><b>About the “Swachh Diwali Shubh Diwali” Campaign:</b></p> <ul style="list-style-type: none"> <li>• <b>Objective:</b> Promote cleanliness beyond homes to public spaces and neighborhoods, reinforcing the values of the Swachh Bharat Mission.</li> <li>• <b>Eco-friendly focus:</b> Emphasizes plastic-free celebrations and “Vocal for Local” to minimize environmental impact.</li> <li>• <b>Gandhian values:</b> Aligns with principles of public service and sanitation, encouraging Diwali celebrations that support marginalized communities.</li> <li>• <b>Community involvement:</b> Engages citizens to create a cleaner, more inclusive Diwali celebration in line with collective well-being and sustainability.</li> </ul> <p><b>Relevance in UPSC Syllabus:</b></p> <ul style="list-style-type: none"> <li>• <b>Ethics in Public Administration:</b> Social responsibility, ethical duty, and Gandhian values.</li> <li>• <b>Social Issues:</b> Urban sanitation, public health, and social welfare,</li> <li>• <b>Environment and Ecology</b></li> <li>• <b>Essay:</b> Community service, inclusivity, and social harmony</li> </ul>
<h3>6. AARAMBH 6.0 INITIATIVE</h3>	<p><b>Context:</b> Prime Minister engaged with young civil servants during Aarambh 6.0, focusing on enhancing governance through public participation (Jan Bhagidari) and improving feedback and grievance redressal systems.</p> <p><b>About Aarambh 6.0 initiative:</b></p> <ul style="list-style-type: none"> <li>• <b>Objective:</b> Aarambh is an orientation program for young civil servants, designed to equip them with governance skills and foster innovative thinking.</li> <li>• <b>Focus Areas:</b> This edition emphasized “Jan Bhagidari” (public participation), the importance of robust feedback mechanisms, and streamlined grievance redressal.</li> </ul> <p><b>Relevance in UPSC syllabus:</b></p> <ul style="list-style-type: none"> <li>• <b>Governance:</b> Citizen-centric governance</li> <li>• <b>Polity and Public Administration</b></li> <li>• <b>Ethics and Integrity</b></li> </ul>
<h3>7. “MUMMY-PAPA, VOTE DO” CAMPAIGN</h3>	<p><b>Context:</b> Ahead of the upcoming assembly elections in Jharkhand, the Election Commission launched an innovative voter awareness campaign, “Mummy-Papa, Vote Do,” engaging schoolchildren to encourage their parents to vote.</p> <p><b>About “Mummy-Papa, Vote Do” Campaign:</b></p> <ul style="list-style-type: none"> <li>• <b>Objective:</b> Aimed at increasing voter turnout by involving children in urging their parents to vote.</li> <li>• <b>Method:</b> Over 1.7 million students from 18,570 schools wrote letters to their parents, encouraging them to fulfill their civic responsibility.</li> <li>• <b>Significance:</b> Boosts democratic participation, especially in rural areas, and emphasizes the importance of voting as a civic duty.</li> </ul> <p><b>Relevance for UPSC</b></p> <ul style="list-style-type: none"> <li>• <b>Electoral awareness:</b></li> <li>• <b>Civic engagement</b></li> <li>• <b>Innovative governance</b></li> </ul>

## 8. ULTRA-ENFORCEMENT CONCRETE

**Context:** The Government is working to reduce the cost of the construction of bridges and metros by 25 percent with the use of ultra-enforcement concrete, a technology adapted from Malaysia.

### About Ultra-Enforcement Concrete (UEC):

- **Definition:** High-performance concrete offering enhanced strength, durability, and cost-efficiency.
- **Source:** Adapted from Malaysian technology, aimed at reducing construction costs in India.
- **Key Feature:** Reduces material usage while maintaining strength, with potential cost savings up to 25% in large infrastructure projects like bridges and metros.

### Usage in UPSC Syllabus:

- **Infrastructure**
- **Technology and Innovation**
- **Environmental Impact**

## FACTS FOR PRELIMS

### GS-1

#### Art & Culture

## 1. DINOSAUR FOSSIL PARK AND MUSEUM

### Context:

Gujarat's Dinosaur Fossil Park and Museum in Balasinor, an iconic site is currently under **consideration for a** UNESCO geo-heritage tag. The park faces neglect in maintenance and management, impacting both visitor experience and the conservation of fossils.

### About Dinosaur Fossil Park and Museum, Balasinor:

- **Location:** Located in Raiyoli, Balasinor, Gujarat, known for Late Cretaceous fossils of dinosaurs like *Rajasaurus narmadensis*.
- **Discovery:** Uncovered in the 1980s by GSI geologists, it ranks as one of the world's largest dinosaur egg hatcheries.
- **Current issues:** Faces neglect with overgrown vegetation, broken displays, and frequent power outages.
- **Nearby threats:** A nearby irrigation project poses risks to the fossil-rich area.
- **Museum facilities:** Features like 3D mapping and VR tours but is affected by structural issues and funding delays.
- **Local conservation:** The Fossil Park Society coordinates upkeep efforts, and **Nawabzadi Aaliya Sultana Babi, known as the "Dinosaur Princess,"** advocates for its preservation.

**In News:** **Hong Kong** has discovered dinosaur fossils

for the first time on **Port Island** in its UNESCO Global Geopark. Initial analysis suggests they belong to a large dinosaur from the Cretaceous period (145-66 million years ago), likely preserved by sediment and later exposed by flooding.

### Insta Links:

1. National-fossil-park-in-Ghugwa-Madhya-Pradesh

## 2. KONARK WHEELS

### Context:

Four replicas of the Konark wheels, made of sandstone, have been installed at Rashtrapati Bhavan Cultural Centre and Amrit Udyan.

- This initiative aims to highlight India's cultural heritage, presenting visitors with a glimpse of traditional and historical artistry associated with the 13th-century Konark Sun Temple in Odisha.



### About Konark Sun Temple:

- **Historical background:** Built in the 13th century under **King Narasimhadeva I** of the Eastern Ganga Dynasty, the temple is located in Konark,

Odisha.

- **Architectural design:** The temple represents a colossal stone chariot with twelve pairs of intricately carved wheels, symbolizing the Sun God’s chariot.
- **Materials used:** Constructed using **Khondalite stones**, the temple features detailed carvings illustrating mythology and cultural life.
- **Astronomical significance:** The temple’s design is oriented to capture the first light of the sun, symbolizing ancient Indian astronomical knowledge.
- **UNESCO recognition:** In 1984, the Konark Temple was declared a UNESCO World Heritage Site, acknowledging its historical and architectural importance.

**About Konark Wheel:**

- **Symbolism:** The Konark wheel, built in the 13th century, represents time (Kalachakra), progression, and democracy.
- **Design features:** With 24 spokes, it embodies ancient wisdom and architectural mastery, symbolized in the national flag.
- **Purpose:** The wheel served as a sundial in the temple, symbolizing the passage of time and India’s commitment to progress and resilience.

**Insta links:**

1. Konark-sun-temple

**Geography**

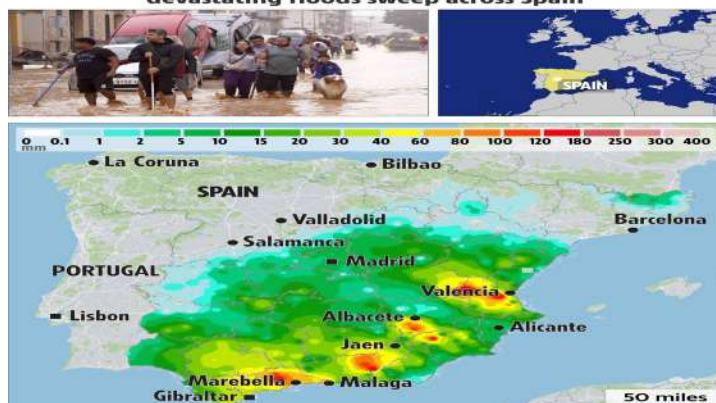
**3. DANA**

**Context:**

The weather pattern known as **DANA, or “gota fría” (cold drop)**, recently triggered devastating flash floods across southern and eastern Spain, causing widespread damage and fatalities.

- This atmospheric phenomenon, which has become increasingly intense and widespread, is linked to climate changes affecting rainfall patterns in the Mediterranean region.

**DEADLY FLOOD MAP**  
New map reveals worst-hit areas after devastating floods sweep across Spain



**About DANA (Cold Drop):**

- **Definition:** DANA stands for **“depresión aislada en niveles altos”** (isolated depression at high altitudes) and is also called “gota fría” or cold drop in Spain.
- **Formation:** Occurs when a pocket of cold air descends over the warm Mediterranean Sea, causing rapid atmospheric instability.
- **Mechanism:** The cold air mixes with warm, moist air, causing the latter to rise quickly and form cumulonimbus clouds that lead to intense rainfall.
- **Polar jet stream influence:** Involves the polar jet stream, which separates polar and tropical air; sometimes, a cold air pocket detaches and moves over the Mediterranean, sparking DANA.
- **Seasonal occurrence:** Commonly occurs in autumn and spring in the western Mediterranean.
- **Intensity:** Increasingly severe and geographically spread due to rising sea temperatures, with warmer air retaining more moisture, leading to heavier rainfall.

**NOTE:** Don’t confuse this with Cyclone DANA (was a tropical cyclone which affected the states of West Bengal and Odisha in India.)

**Insta Links:**

1. Flash-Floods

**GS-2**

**Comparison of Constitutions**

**4. SWING STATES**

**Context:**

The 2024 U.S. presidential election, set for November 5, places a critical emphasis on a handful of states known as “swing states” or “battleground states.”

**About Swing States:**

- **Definition:** Swing states are those where neither Democratic nor Republican candidates have a consistent dominance, leading them to “swing” between parties in different elections.
- **Examples in 2024:** The primary swing states this election include **Pennsylvania, Michigan, Wisconsin, Georgia, Nevada, Arizona, and North Carolina.**



- **Significance:**
  - **Electoral college impact:** Swing states are crucial as they can allocate their entire electoral votes to the winner within that state, regardless of the margin. This can be decisive in a closely contested election.
  - **Close poll margins:** In the 2024 race, polls in these states show tight competition, with leads often within a 3.4% margin, the typical polling error.
  - **Demographic influence:** Each swing state has unique demographic groups—like Latinos in Arizona and Black voters in Georgia—that candidates aim to influence through tailored campaigns.

**Insta links:**

1. US-sees-india-swing-state-can-help-tilt-global-strategic-balance
2. How-is-the-American-president-elected

Governance

## 5. PANDEMIC FUND

**Context:**

The Union Government of India has **launched a \$25 million project** to boost animal health security in partnership with the Asian Development Bank (ADB), World Bank, and Food and Agriculture Organization (FAO).

**About Pandemic Fund:**

- **Fund size and origin:** A \$25 million initiative established under the G20 Pandemic Fund during Indonesia’s G20 presidency in **2022**.
- **Objective:** Enhance pandemic preparedness in low- and middle-income countries by improving response capacity to animal health risks.
- **Implementing partners:** Asian Development Bank (ADB), World Bank, and Food and Agriculture Organization (FAO).

**Purpose and rationale:**

- **Preventing zoonotic outbreaks:** Address the

animal origin of zoonotic diseases, with 5 of 6 WHO-declared public health emergencies having animal origins.

- **Reducing economic impact:** Mitigate socio-economic damage caused by zoonotic outbreaks, like SARS and avian flu, which caused global losses of \$50 billion and \$30 billion, respectively.

**Key Interventions:**

- **Laboratory upgrades:** Expand and improve animal health labs and vaccine production facilities.
- **Enhanced surveillance:** Strengthen early warning systems for better outbreak detection and timely intervention.
- **Data system upgrades:** Improve data management and analysis for better risk assessment and decision-making.
- **Institutional capacity building:** Establish a disaster management framework tailored for the livestock sector, addressing capacity needs at national and regional levels.

**Zoonotic diseases:**

- **Definition:** Diseases that can be transmitted from animals (domesticated or wildlife) to humans, often facilitated by close animal-human interactions.
- **Risk statistics:** Over 60% of pathogens affecting humans originate from animals, with 75% of emerging human diseases linked to animal sources.
- **Examples and impact:** Mosquito-borne diseases (e.g., dengue from *Aedes aegypti*), avian influenza, and rabies are zoonotic diseases. Climate change increases the frequency and range of these diseases.

**Insta links:**

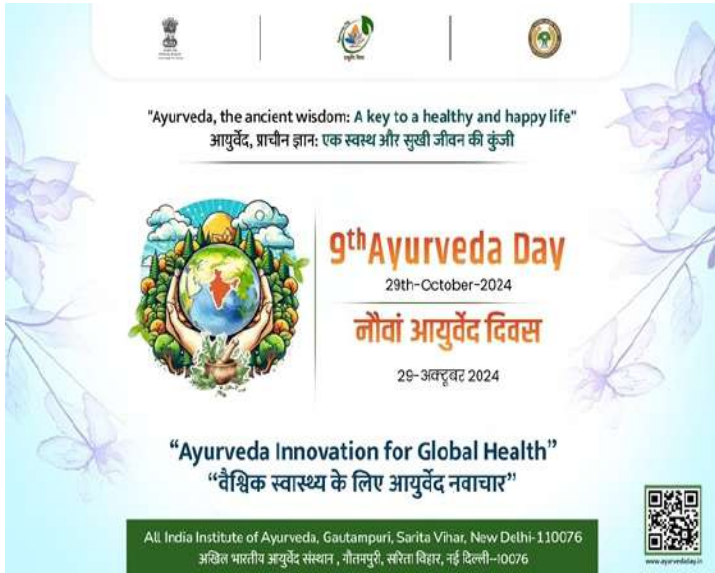
1. Global-struggle-for-a-pandemic-treaty

## 6. AYUSHMAN BHARAT PRADHAN MANTRI JAN AROGYA YOJANA

**Context:**

On Dhanvantari Jayanti, celebrated as the 9th Ayurveda Day, the Prime Minister will launch the expansion of health coverage to **all senior citizens aged 70 years and above** as a major addition to the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana.

- This will help provide health coverage to **all senior citizens regardless of their income**.



**About** Ayushman Bharat Pradhan Mantri Jan Arogya Yojana **(AB PM-JAY):**

- **Launch year:** 2018, as a flagship scheme focused on accessible healthcare for India’s vulnerable families.
- **Objective:** Provides health insurance coverage of up to ₹5 lakhs per family annually for secondary and tertiary hospital care.
- **Coverage:** Currently covers 55 crore individuals across 12.34 crore families nationwide.
- **Key features:**
  - **Universal health access:** Seeks to ensure no citizen, especially the marginalized, is deprived of healthcare.
  - **Health and Wellness Centres (HWCs):** Target of 1,50,000 HWCs to offer primary healthcare, emphasizing preventive and curative services.
  - **Expanded senior citizen coverage:** Recently expanded to include all senior citizens 70+, offering coverage irrespective of income.
  - **Financial protection:** Reduces out-of-pocket healthcare expenses for low-income families by covering a wide array of medical treatments.

**Insta Links:**

1. Universal-health-coverage
2. PMJAY

## 7. TARUN PLUS

**Context:**

In July 2024, the finance minister announced an increase in the loan limit to ₹20 lakh, effective from October 24, 2024, under the **new Tarun Plus category**.

**About** Pradhan Mantri MUDRA Yojana **(PMMY):**

- **Origin:** Launched on April 8, 2015.
- **Ministry:** The Ministry of Finance.
- **Objective:** Designed to promote financial inclusion and self-employment opportunities by extending credit to small-scale enterprises in manufacturing, trading, and services, including allied agricultural activities.
- **Loan categories:**
  - **Shishu:** Loans up to ₹50,000 for nascent businesses.
  - **Kishore:** Loans between ₹50,000 and ₹5 lakh for slightly developed businesses.
  - **Tarun:** Loans above ₹5 lakh up to ₹10 lakh for mature businesses.
  - **Tarun Plus:** New category with loans from ₹10 lakh to ₹20 lakh for successful Tarun borrowers.
- **Member Lending Institutions (MLIs):** Scheduled Commercial Banks, Regional Rural Banks (RRBs), Small Finance Banks (SFBs), Non-Banking Financial Companies (NBFCs), Micro Finance Institutions (MFIs) etc.
- **Key features:**
  - **Collateral-free loans:** Offered through banks, NBFCs, RRBs, and MFIs without collateral, ensuring easier access.
  - **MUDRA card:** A RuPay debit card offering flexible working capital, functioning as an overdraft facility for credit access and payment convenience.
  - **MUDRA MITRA app:** A mobile app providing loan-related information, guidance, and resources for aspiring entrepreneurs.

**Insta links:**

1. PM-Mudra-Yojana-completes-8-years

## 8. AYUSHMAN VAYA VANDANA CARD

**Context:**

Prime Minister recently launched the **Ayushman Vaya Vandana Card** as an extension of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana **(AB PM-JAY)**.

- This card aims to ensure free healthcare for every citizen aged 70 years and above, providing an annual coverage of up to ₹5 lakh.

### About Ayushman Vaya Vandana Card:

- **Origin:** Announced during the Union Budget 2024-25.
- **Ministry:** Operates under the Ministry of Health and Family Welfare.
- **Aim:** To provide free, universal healthcare access to seniors above 70 years, ensuring they can avail of necessary treatments without financial burdens.
- **Eligibility:** All Indian citizens aged 70 years or older are eligible, **regardless of income or economic status.**
- **Features:**
  - **Coverage:** Provides an annual health cover of ₹5 lakh per family for healthcare needs, shared if multiple elderly individuals live in one household.
  - **Enrolment process:** Requires registration via the PM-JAY portal or Ayushman app and mandatory eKYC completion, even for those with existing Ayushman cards.
  - **Integrated with other schemes:** Beneficiaries of other government health schemes (e.g., CGHS, ECHS) can either retain existing coverage or opt for the Ayushman Bharat benefits.
  - **Additional support:** Also available for individuals insured under the Employees State Insurance Corporation (ESIC) and those with private health insurance.

#### Insta links:

5-years-of-Ayushman-Bharat-PMJAY

## 9. ELECTRONIC VOTING MACHINE

#### Context:

During the Haryana Assembly elections, Congress raised concerns about EVM battery life discrepancies, questioning why some EVMs showed 99% charge after polling

#### About Electronic Voting Machine (EVM):

- **Purpose:** Portable device for conducting elections to the Parliament, State Legislatures, and local bodies, enabling electronic voting over traditional paper ballots.
- **Key Features:**
  - **Voting capacity:** Records up to 2,000 votes for efficient election handling.
  - **Secure storage:** Encrypted memory ensures confidentiality of votes.
  - **Backup power:** Alkaline batteries enable use in remote areas without electricity.
  - **Multilingual options:** Supports multiple languages for voter accessibility.
  - **Audit trail (VVPAT):** Voters can verify

their votes with a paper trail for audit purposes.

- **Development:** Designed by the Election Commission's Technical Experts Committee, manufactured by **Bharat Electronics Limited (BEL)** and **Electronics Corporation of India Limited (ECIL)**, both Indian PSUs.

#### About EVM batteries:

- **Battery type:** EVMs and VVPATs use non-rechargeable alkaline batteries chosen for reliability and a five-year shelf life.
- **Voltage display:** The 99% indicator reflects a voltage range (8.2V to 7.4V) rather than exact charge. Actual percentage only appears below 7.4V.
- **Choice rationale:** Alkaline batteries were selected for their stable performance in extreme temperatures and gradual power decline, ensuring uninterrupted function.
- **Power use:** EVMs consume minimal power, remaining disconnected from networks, unlike mobile phones, which ensures battery longevity.

#### Insta links:

1. Supreme-court-verdict-on-EVMs

## 10. NAMO DRONE DIDI

#### Context:

The Government of India has launched the "Namo Drone Didi" scheme to empower women Self-Help Groups (SHGs) under the Deendayal Antyodaya Yojana - National Rural Livelihood Mission (DAY-NRLM).



#### About Namo Drone Didi Scheme:

- **Origin:** Launched by the Government of India under the DAY-NRLM initiative.
- **Aim:** To provide women SHGs with drones for agriculture-related services, empowering them with new income sources while enhancing farming efficiency.
- **Ministry:** Administered by the Department of Agriculture & Farmers' Welfare, Ministry of Agriculture, in partnership with the Ministry of

Rural Development.

• **Features:**

- **Financial Support:** Central Financial Assistance covering 80% of the drone cost, capped at ₹8 lakh per drone.
- **Loan Assistance:** SHGs can secure loans for the remaining cost through the National Agriculture Infrastructure Fund (AIF) with 3% interest subvention.
- **Drone Package:** Includes drones with spray systems, additional battery sets, training for a pilot and drone assistant, a one-year warranty, two years of maintenance, and insurance.
- **Training and Support:** SHG members receive 15-day training for drone operation, maintenance, and agricultural use.
- **Implementation:** State-level Lead Fertilizer Companies (LFCs) and State Departments manage implementation, with drones allocated to SHG clusters.
- **Monitoring:** An IT-based Management Information System (MIS) Drone Portal will monitor drone operations and service delivery.

**Insta Links:**

1. Deendayal-Antyodaya-Yojana

## 11. DIGITAL INDIA COMMON SERVICE CENTER PROJECT

**Context:**

The Digital India Common Service Center (DICSC) project is an initiative by the Ministry of Electronics and Information Technology (MeitY) aimed at bridging the digital divide in rural areas by providing digital services at the grassroots level.

**About Digital India Common Service Center Project:**

- **Origin:** Launched under the Digital India initiative by MeitY to improve rural digital access by setting up model centers in gram panchayats across select districts.
- **Aim:** Provide rural citizens with e-governance, financial, and digital services, promoting inclusion and digital literacy.
- **Ministry:** Ministry of Electronics and Information Technology (MeitY), with CSC e-Governance Services India Ltd. overseeing execution.
- **Key features:**
  - **Centers:** 4,740 centers across 10 districts, including Pilibhit and Gorakhpur.
  - **Services:** Aadhaar, banking, tele-law, telemedicine, education, and e-commerce.
  - **Infrastructure:** High-speed broadband,

modern facilities, and GPS-enabled mobile vans.

- **Economic boost:** Supports job creation and Village Level Entrepreneurs (VLEs).
- **Budget:** ₹31.6 crore for six months, extendable to nine.

**Insta Links:**

1. Digital-India

[International Relations](#)

## 12. COMPREHENSIVE NUCLEAR-TEST-BAN TREATY ORGANIZATION (CTBTO)

**Context:**

Recently, CTBTO's systems clarified a false alarm regarding suspected nuclear activity in Iran, showing the organization's critical role in preventing misinformation related to nuclear tests and promoting global security.

**About Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO):**

- **Established:** 1996 as the interim Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty.
- **Headquarters:** Vienna, Austria.
- **Mission:** Prepare for the Comprehensive Nuclear-Test-Ban Treaty (CTBT's) entry into force by building a verification regime and promoting global adoption of the treaty.
- **Structure:**
  - **Preparatory Commission (all Member States),** with Working Groups for administrative, financial, and verification issues.
  - **Provisional Technical Secretariat (PTS),** with divisions for International Monitoring, Data, and On-Site Inspection.
- **Funding:** Member-state contributions.

**About CTBTO International Monitoring System (IMS):**

- **Network Size:** Comprises 337 monitoring facilities, with over 90% operational.
- **Technologies:**
  - **Seismic:** Detects underground explosions via ground shockwaves.
  - **Hydroacoustic:** Identifies underwater explosions.
  - **Infrasound:** Monitors atmospheric, low-frequency sounds from nuclear tests.
  - **Radionuclide:** Detects radioactive particles from nuclear explosions.

**Insta links:**

1. Comprehensive-nuclear-test-ban-treaty-CTBT

### 13. BRICS AND VENEZUELA

**Context:**

Tensions are escalating between Venezuela and Brazil after Venezuela’s bid to join BRICS was blocked, reportedly by Brazil.

**BRICS and Joining Process:**

- **Joining process:** BRICS evaluates candidates based on international influence, regional stability, and potential contributions to the bloc.
  - New members are typically proposed during BRICS summits, and **all current members must agree** for a country to be accepted.
- **Venezuela’s bid:** Venezuela aimed to join BRICS in 2024, but Brazil’s concerns over Venezuela’s regional standing and internal stability, especially following its disputed presidential election, led to the rejection.



**About BRICS:**

- **Origin:** Founded in 2009 as a coalition of emerging economies to strengthen economic ties and political influence globally.
- **Headquarters:** BRICS does not have a permanent headquarters; activities are coordinated through annual summits hosted by member nations.
- **Current members:** Brazil, Russia, India, China, South Africa, with recent additions of Ethiopia, Iran, Egypt, and the United Arab Emirates (joined in 2024).
- **Key features:**
  - **Economic cooperation:** Fosters trade and investment among members.
  - **Political influence:** Acts as a counterbalance to Western-dominated global institutions.
  - **Multilateral development:** Focuses on sustainable development, infrastructure financing, and currency stability through the New Development Bank.

**Insta links:**

1. Kazan-Declaration
2. Turkeys-bid-to-join-BRICS

### GS-3

Indian Economy

### 14. GOLD RESERVES

**Context:**

India’s total gold reserves held by the Reserve Bank of India (RBI) amount to 854.73 metric tonnes, according to the central bank’s latest report.

**India’s Gold Reserve Status:**

- **Total Gold Reserves:** 854.73 metric tonnes, with 510.46 metric tonnes held domestically and 324.01 metric tonnes stored at the Bank of England and BIS.
- **Gold’s Share in Total Reserves:** Gold now represents 9.32% of forex reserves as of September 2024, an increase from 8.15% in March.
- **Import Cover:** As of June 2024, forex reserves cover 11.2 months of imports, slightly down from March’s 11.3 months.
- **World ranking:** (as of September 2024)
  - Top rankers are **United States, Germany and Italy**.
  - The United States has the most gold reserves and has nearly as many reserves as the combined total of the next three countries with the largest gold holdings: Germany, Italy, and France.
  - India holds a significant position in global gold reserves, **ranking 8th in the list** of countries with the most gold reserves.

Rank	Country	Gold Reserves (Tonnes)	Gold Reserves (Millions)	Holdings (%)
1	United States of America	8,133.46	609,527.85	72.41
2	Germany	3,351.53	251,166.13	71.46
3	Italy	2,451.84	183,742.52	68.33
4	France	2,436.97	182,628.35	69.99
5	Russian Federation	2,335.85	175,050.59	29.47
6	China	2,264.32	169,689.52	4.91
7	Japan	845.97	63,397.87	5.15
8	India	840.76	63,007.20	9.57

**About Forex Reserves:**

- **Definition:** Forex reserves are assets held by RBI in foreign currencies, including foreign currencies, gold, SDR (Special Drawing Rights), and RTP (Reserve Tranche Position) with the IMF.
- **Purpose:** They support the Indian rupee,

stabilize the exchange rate, and enable monetary policy adjustments. Reserves also back liabilities and serve as a safety net in times of currency devaluation.

- **Importance:** A strong forex reserve helps India attract foreign trade and investment, enhancing its international reputation and economic resilience.

#### **Insta Links:**

1. RBI-gold-reserves
2. Indias-forex-reserves-hit-record-high

### Agriculture

## 15. PADDY VARIETY PR-126

#### **Context:**

The Indian government has initiated a review of the **paddy variety PR-126**, widely cultivated in Punjab, following complaints from local rice millers about a reduction in rice yield, specifically concerning the **Out Turn Ratio (OTR)** from paddy to rice.

#### **About Paddy Variety PR-126:**

- **Introduction:** PR-126 was adopted on a large scale in Punjab since 2016.
- **Yield concerns:** Rice millers report a 4-5% reduction in OTR, resulting in less rice yield (around 5 kg per quintal).
- **Intrinsic defects:** Alleged issues include broken grains, potentially due to early harvesting and hybrid varieties sold as PR-126.
- **Growth duration:** A short-duration variety that typically matures in 125 days but can mature in as little as 110 days.
- **Water efficiency:** Requires less water, aligning with sustainable agriculture goals.

#### **About Out Turn Ratio (OTR):**

- **Definition:** OTR, or Out Turn Ratio, measures the percentage of rice yield extracted from paddy after milling.
- **Standard requirement:** The Food Corporation of India (FCI) mandates a standard OTR of 67% per quintal for millers, meaning 67 kg of rice per 100 kg of paddy.
- **Penalties for Shortfall:** If the OTR falls below 67%, millers must compensate the government for the deficit, leading to financial loss.
- **Hybrid impact:** Certain hybrid paddy varieties are reported to yield an OTR as low as 60-62%, increasing costs for millers by approximately ₹300 per quintal due to reduced yield.

#### **Insta links:**

1. Non-basmati-rice

## 16. MISSION FOR INTEGRATED DEVELOPMENT OF HORTICULTURE (MIDH)

#### **Context:**

The Union Government has decided to **expand the Mission for Integrated Development of Horticulture (MIDH)** by incorporating advanced agricultural techniques like **hydroponics, aquaponics, vertical farming, and precision agriculture**.

- This move aims to modernize horticulture practices, increase productivity, and address requests from various states for updated cost norms and guidelines.

#### **About Mission for Integrated Development of Horticulture (MIDH):**

- **Origin:** Launched by the Government of India, MIDH is a Centrally Sponsored Scheme (CSS) established to promote the horticulture sector.
- **Ministry:** Implemented under the Ministry of Agriculture and Farmers Welfare.
- **Aim:** Focuses on the holistic growth of horticulture through support for production, post-harvest management, and marketing of diverse horticulture crops.
- **Sub-schemes:**
  - National Horticulture Mission (NHM)
  - Horticulture Cluster Development Programme (HCDP)
  - Technology Mission for Development in NE States, Sikkim, and J&K
  - National Bamboo Mission
  - Coconut Development Board
  - Mission for Integrated Development of Medicinal Plants (MIDMP)

#### **Additional information:**

- **Hydroponics:** A soil-free cultivation method where plants grow in nutrient-rich water solutions, allowing for controlled environment agriculture and higher yields in limited spaces.
- **Aquaponics:** A combination of aquaculture and hydroponics, where fish waste provides nutrients for plants grown in water, and the plants, in turn, purify the water for the fish.
- **Vertical Farming:** An innovative approach to farming in stacked layers, typically indoors, using LED lighting and controlled environments to maximize crop output in urban or limited spaces.
- **Precision Agriculture:** A technology-driven approach to optimize crop yields by using data

analysis, GPS, and IoT tools to monitor and manage farming inputs like water, fertilizers, and pesticides with high accuracy.

**Insta Links:**

1. Use-of-technology-in-agriculture

## 17. KANDA EXPRESS

**Context:**

The Kanda express train with 840 metric tonnes of onion arrived at Kishanganj Railway Station in **Delhi from Nashik** in Maharashtra to meet the demand of onion in Delhi-NCR.

**About Kanda Express:**

- **Cargo:** The Kanda Express carries bulk loads of onions to meet regional demands.
- **Recent arrival:** Recently delivered 840 metric tonnes of onions to Delhi’s Kishanganj Railway Station from Nashik.
- **Second bulk shipment:** Follows a previous shipment of 1,600 metric tonnes to Delhi-NCR.
- **National impact:** The initiative contributes to onion price stabilization, with similar shipments aiding markets in Northeast India and other major states.
- **Buffer stock utilization:** Part of the government’s price stabilization strategy, using its 4.7 lakh tonne buffer of rabi onions to counter price fluctuations.

**Insta links:**

1. Parliamentary-committee-for-the-state-of-onion-storage

Science & Technology

## 18. MEDICINAL FOODS AND BENEFITS

**Context:**

In recent decades, researchers have identified new compounds and potential drugs from plants traditionally used in medicine, and today, these plants are being further explored for broader health applications and benefits.

**About Medicinal Foods and Benefits:**

- **Turmeric:** Known for its anti-inflammatory and antioxidant properties, used traditionally in food and medicine. High doses, however, may pose risks, highlighting the need for dosage regulation.
- **Giloy (Tinospora cordifolia):** Used for immunity boosting, reducing fevers, and other therapeutic benefits; traditionally consumed for its stem’s medicinal properties.
- **Ashwagandha (Withania somnifera):** Known

to alleviate stress, improve energy levels, and enhance mental focus; it is particularly valued for its root’s therapeutic properties in Ayurveda.

- **Bhringaraj (Eclipta prostrata):** Beneficial for hair health, as well as liver and digestive health, and sometimes consumed as a leafy vegetable.
- **Lemon (Citrus limon):** Recognized for vitamin C content and immunity-boosting properties; varies significantly across different varieties and cultivars.

**Insta Links:**

1. Traditional-medicine

## 19. PRADHAN MANTRI MUDRA YOJANA (PMMY)

**Context:**

In July 2024, the finance minister announced an increase in the loan limit to ₹20 lakh, effective from October 24, 2024, under the **new Tarun Plus category**.



**About Pradhan Mantri MUDRA Yojana (PMMY):**

- **Origin:** Launched on April 8, 2015.
- **Ministry:** The Ministry of Finance.
- **Objective:** Designed to promote financial inclusion and self-employment opportunities by extending credit to small-scale enterprises in manufacturing, trading, and services, including allied agricultural activities.
- **Loan categories:**
  - **Shishu:** Loans up to ₹50,000 for nascent businesses.
  - **Kishore:** Loans between ₹50,000 and ₹5 lakh for slightly developed businesses.
  - **Tarun:** Loans above ₹5 lakh up to ₹10 lakh for mature businesses.
  - **Tarun Plus:** New category with loans from ₹10 lakh to ₹20 lakh for successful Tarun borrowers.
- **Member Lending Institutions (MLIs):** Scheduled Commercial Banks, Regional Rural Banks (RRBs), Small Finance Banks (SFBs), Non-Banking Financial Companies (NBFCs), Micro Finance Institutions (MFIs) etc.
- **Key features:**
  - **Collateral-free loans:** Offered through banks, NBFCs, RRBs, and MFIs without

collateral, ensuring easier access.

- **MUDRA card:** A RuPay debit card offering flexible working capital, functioning as an overdraft facility for credit access and payment convenience.
- **MUDRA MITRA app:** A mobile app providing loan-related information, guidance, and resources for aspiring entrepreneurs.

#### Insta links:

1. PM-Mudra-Yojana-completes-8-years

## 20. TRANSPONDER TECHNOLOGY

#### Context:

The Department of Fisheries with the help of the Vessel Communication and Support System under the Pradhan Mantri Matsya Sampada Yojana has been able to enhance the safety and security of fishermen at sea.

- This initiative, utilizing indigenous **transponder technology developed by ISRO** and implemented by New Space India Ltd (**NSIL**)

#### About Vessel Communication and Support System:

- **Launch Date and Cost:** Introduced on August 30, 2024, with a project outlay of ₹364 crore.
- **Objective:** Provides real-time two-way communication for fishermen beyond mobile range, enhancing safety and allowing for timely advisories during emergencies.
- **Technology:** Uses transponders developed by ISRO, enabling precise vessel tracking, speed monitoring, and emergency communication, especially crucial in adverse weather.
- **Application:** The Nabhmitra Application aids in vessel tracking and provides real-time updates on sea conditions, weather alerts, and cyclone data, contributing to safe navigation.
- **Multilingual Support:** Broadcasts in local languages ensure accessibility for non-English-speaking fishermen, enhancing response time and safety.

#### About Transponders:

- **Definition:** A transponder is a wireless device that receives incoming signals, amplifies them, and transmits a modified signal back.
- **Primary Functions:**
  - Acts as both a transmitter and receiver (transmitter + responder).
  - Shifts input signal frequency and boosts it.
  - Transponders are categorized into *active* (used in aircraft, RFID) and *passive* (used in devices like credit cards).
- **Types:**
  - **Bent Pipe Transponder:** Converts

signal to radio frequency, boosts it, and transmits it back; often used in satellites as a repeater.

- **Regenerative Transponder:** Processes the signal by demodulating and remodulating it for better accuracy; suitable for digital signals.
- **Comparison:**
  - **Transponder vs. Transceiver:** A transceiver can both send and receive signals without preprogrammed responses, while a transponder is programmed to respond automatically.
  - **Transponder vs. Transducer:** A transducer converts energy types, while a transponder handles signal transmission and response.

#### Insta Links:

1. Space-technology
2. Pradhan-Mantri-Matsya Sampada-Yojana

## 21. GLOBAL TB REPORT 2023

#### Context:

The Global TB Report 2023 by the World Health Organization (WHO) reveals that while India has improved in TB diagnosis and treatment coverage, it still faces significant challenges in achieving its ambitious **2025 TB elimination** target.

- India remains the country with the highest TB burden globally, underscoring the need for enhanced funding and healthcare strategies.

#### About Global TB Report 2023 and India's status:

- **Global TB cases:** 8.2 million people were newly diagnosed with TB in 2023, making TB the leading infectious killer worldwide, overtaking COVID-19.
- **India's TB burden:** India reported 2.8 million estimated TB cases in 2023, accounting for 26% of global TB cases and 29% of global TB deaths (315,000 deaths).
- **Progress towards targets:** India has reduced TB cases by 18% and deaths by 24% since 2015, short of the 2025 targets of a 50% reduction in cases and a 75% reduction in deaths.
- **Increase in diagnosed cases:** Reported TB cases rose to 2.51 million in 2023, signalling improvement in diagnostic reach, with 85% of diagnosed patients receiving treatment.
- **Multi-Drug-Resistant TB:** India accounts for 27% of global multi-drug-resistant TB cases, highlighting the need for targeted treatment strategies.
- **Funding gap:** India's TB funding dropped from \$432.6 million in 2019 to \$302.8 million in 2023, with domestic funding falling to \$253 million.
- **Catastrophic costs:** For the first time, the report

estimates that many households face catastrophic health costs, spending more than 20% of their income on TB-related healthcare.

**Read more about** Tuberculosis **here**.

#### **Insta Links:**

1. Analysis-Tuberculosis-elimination-in-India

## 22. LUMINESCENT NANOMATERIALS

#### **Context:**

To combat the increasing issue of counterfeiting, scientists at the **Institute of Nano Science and Technology (INST)** have developed a novel security ink based on luminescent nanomaterials.

#### **About Luminescent Nanomaterials:**

- **Unique properties:** These materials, doped with rare earth ions, exhibit luminescence that varies based on the wavelength of light they're exposed to.
- **Multi-color display:** The ink shows vibrant blue under 365 nm UV light, pink under 395 nm, and orange-red under 980 nm near-infrared light, enhancing its security features.
- **Durability:** Remains effective under a wide range of light, temperature, and humidity conditions, making it ideal for long-term use.

#### **Counterfeiting in Currency and Other Goods:**

- **Advanced security feature:** Traditional covert tags are only visible under UV light and are easily duplicated. This new ink offers enhanced security with multi-wavelength color changes.
- **Applications:** Can be applied to various items to ensure authenticity, including currency, certificates, branded goods, and medicines.
- **Ease of verification:** Enables consumers and manufacturers to verify authenticity easily, offering a practical solution to counterfeiting.

#### **Insta links:**

1. 3D - hologram-technology

## 23. LIDAR

#### **Context:**

Scientists have detected a lost Mayan city, hidden for centuries by the dense Mexican jungle, using LiDAR.

#### **About LiDAR (Light Detection and Ranging):**

- **Definition:** Remote sensing technology using pulsed laser light to measure distances and create 3D models of Earth's surface.

- **Components:** Comprises a laser, scanner, and GPS receiver; usually mounted on aircraft for terrain mapping.
- **Functioning:** Pulsed laser light travels to the ground, reflecting off various features. The system calculates the two-way travel time of the light to measure distances and create elevation data.
- **Data output:** Initially produces a "**point cloud**" representing reflections from structures, vegetation, and terrain; refined to form high-resolution Digital Elevation Models.
- **Applications:** Used in geography, conservation, policy planning, and archaeology for detailed surface mapping, especially useful for exploring areas obscured by vegetation.
- **Archaeological use:** Enables archaeologists to survey large areas quickly, revealing structures hidden under dense foliage, as demonstrated in the discovery of the Maya city, Valeriana, in Mexico.

#### **Insta Links:**

3. LiDAR

#### **Space**

## 24. ELECTRIC PROPULSION SATELLITE

#### **Context:**

To make its satellites lighter in future, ISRO is going to launch its first home-grown electric propulsion-led spacecraft, **Technology Demonstrator Satellite (TDS-1)** in December.

- This technology shift aims to **reduce the weight of satellites** by substituting chemical fuel with electric propulsion, allowing for a more efficient journey to geostationary orbit.

#### **About Electric Propulsion Satellite (TDS-1):**

- **Purpose:** To demonstrate electric propulsion technology for steering satellites using solar-powered ionized gas, reducing reliance on chemical fuel.
- **Benefits:** Cuts down satellite mass drastically by minimizing fuel needs; a four-tonne satellite can be reduced to around two tonnes.
- **Technology:** Utilizes gases like **Argon as fuel**, which are **ionized using solar power** to create propulsion.
- **Historical use:** First incorporated in GSAT-9 (**South Asia Satellite**) in 2017 with imported Russian components.
- **Significance:** Marks a step towards India's space autonomy, as this EPS is fully developed domestically by ISRO.

**Insta Links:**

1. Project-200

## 25. ANALOG SPACE MISSION

**Context:**

The Indian Space Research Organisation (ISRO) has launched India's first analog space mission in Leh, Ladakh.

**About Analog Space Mission:**

- **Objective:** Simulate interplanetary habitat conditions to assess the feasibility of a sustainable extraterrestrial base.
- **Significance of location:** Ladakh's isolation, dry climate, and high-altitude, barren terrain provide Mars- and Moon-like conditions, making it ideal for analog simulations.
- **Collaborative effort:** Led by ISRO's Human Spaceflight Centre with partners including AAKA Space Studio, the University of Ladakh, and IIT Bombay.
- **Key benefits:** Supports Gaganyaan and other future space missions by testing life-support technologies, habitat feasibility, communication systems, and behavior in isolated conditions.
- **International context:** Analog missions, also conducted by NASA, simulate space conditions on Earth to evaluate human and robotic responses, technology, and operational dynamics essential for deep-space missions.

**Insta links:**

1. ISRO-third-launch-pad

[Environment & Ecology](#)

## 26. TARDIGRADES

**Context:**

Researchers have discovered the mechanisms behind the extraordinary radiation resistance of a newly identified species of **tardigrades**, *Hypsibius henanensis*, which may have future applications in space travel, nuclear cleanup, and cancer therapy.

**About Tardigrades:**

- **Habitat:** Found globally in terrestrial, marine, and freshwater environments, from extreme Arctic cold to Antarctic depths and high altitudes.
- **Extreme survivors:** Known for enduring extreme radiation, temperatures ranging from 150°C to -272°C, and decades without food or water.
- **Unique physiology:** These tiny, eight-legged, multicellular creatures can revive from a dried, lifeless state even after several years.

- **Size and structure:** Microscopic but multicellular; they are among the most resilient life forms on Earth, earning nicknames like "**water bears**" and "**moss piglets**" due to their appearance and habitat preferences.
- **Tardigrades' radiation resistance:**
  - **Genetic adaptation:** *Hypsibius henanensis* has 14,701 genes, with 30% unique to tardigrades, that activate under radiation to protect and repair DNA.
  - **DNA repair mechanisms:** Uses a specific protein, TRID1, to quickly repair DNA double-strand breaks caused by radiation.
  - **Mitochondrial and DNA repair proteins:** Produces proteins crucial for mitochondrial function and DNA repair, enhancing survival after radiation exposure.
  - **Antioxidant pigments (Betalains):** Produces betalains that neutralize harmful chemicals generated by radiation, preventing cellular damage.

**Insta Links:**

1. Marine-Tardigrade

## 27. SURGE IN GLOBAL GREENHOUSE GAS

**Context:**

The World Meteorological Organization (WMO) has reported a record rise in global greenhouse gas (GHG) levels, highlighting a surge in carbon dioxide emissions and the warming effects on global temperatures.

**Greenhouse gas surge:**

- **CO<sub>2</sub> concentration increase:** 2023 saw **2.3 parts per million (ppm)** rise in CO<sub>2</sub> levels from 2022, marking the twelfth consecutive year of over 2 ppm increases.
- **Global warming record:** 2023 surpassed the previous record held in 2016, with temperatures **1.48°C above pre-industrial levels (1850-1900)**.
- **Carbon cycle:** About **50% of CO<sub>2</sub>** emissions remain in the atmosphere, **30% absorbed by land**, and **25% by oceans**.
- **India's contribution:** India's GHG emissions grew by **6.1% in 2023**, now accounting for **8% of global emissions**, with historical contributions standing at 3%.
- **Radiative forcing increase:** Since 1990, radiative forcing (warming effect) from GHGs has risen by **51.5%**, with CO<sub>2</sub> contributing **80%** of this increase.

## 28. BANDHAVGARH TIGER RESERVE

### Context:

Four elephants were found dead, with five others in poor health, at Bandhavgarh Tiger Reserve in Madhya Pradesh.



### About Bandhavgarh Tiger Reserve:

- **Location:** Situated between the Vindhyan and Satpura ranges in Umaria district, Madhya Pradesh.
- **Status:** Designated a national park in 1968, it gained Tiger Reserve status in 1993.
- **Topography:** Known for valleys, hills, and plains with the historic Bandhavgarh Fort, associated with Lord Rama and his brother Lakshmana, prominently located.
- **Vegetation:** Features tropical moist deciduous forests, including sal, mixed forests, and grasslands, with bamboo on the lower slopes.
- **Flora:** Includes notable species like Saj (*Terminalia tomentosa*), Dhaora (*Anogeissus latifolia*), Arjun (*Terminalia arjuna*), and Amla (*Emblica officinalis*).
- **Fauna:** Hosts the Royal Bengal Tiger noted for the highest density of tiger population in India and globally.

### Insta Links:

1. 30-years-of-Project-Elephant

## 29. DURGESH ARANYA ZOOLOGICAL PARK

### Context:

Himachal Pradesh's upcoming Durgesh Aranya Zoological Park in Kangra's Dehra constituency is set to become India's first zoo certified by the Indian Green Building Council (IGBC) for sustainable and eco-friendly

infrastructure.



### About Durgesh Aranya Zoological Park:

- **Location:** Situated in the Bankhandi area of Kangra's Dehra assembly constituency, Himachal Pradesh.
- **Unique attractions:** The park will feature 34 enclosures within its Van Vaibhav Path and Biodiversity Court, housing 73 species, including Asiatic lions, crocodiles, gharials, and indigenous birds.
- **Sustainability:** With a budget of ₹619 crore, it emphasizes eco-friendly design and will be the first zoo to earn IGBC certification.
- **Tourism and employment impact:** Aims to attract tourists, create jobs, and promote eco-tourism in Kangra, reinforcing its status as Himachal Pradesh's "Tourism Capital."

### About Indian Green Building Council (IGBC):

- **Established:** Formed in 2001 as part of the Confederation of Indian Industry (CII).
- **Headquarters:** Based in Hyderabad, India.
- **Role:** India's leading body for green building certification, offering programs to promote sustainable architecture.
- **Services:** Provides certification, develops rating systems for eco-friendly buildings, and conducts training on green construction practices.
- **Global representation:** One of five countries on the World Green Building Council board, engaging in international discussions on sustainability at events like COP.
- **Rating criteria:** Evaluates projects based on categories like energy and water efficiency, hygiene, innovation, and sustainable practices.

### Insta links:

1. Green-buildings

## 30. SANJAY DUBRI TIGER RESERVE

**Context:** A resort and a conference hall built within tiger reserve corridors at Madhya Pradesh's Sanjay Dubri and Bandhavgarh have emerged as a point of contention between the state's Wildlife and Tourism departments.



### About Sanjay Dubri Tiger Reserve:

- **Location:** Situated in the Sidhi district of northeastern Madhya Pradesh, bordering Guru Ghasidas National Park to the south.
- **Composition:** Encompasses Sanjay National Park and Dubri Sanctuary, along with buffer zones from Sidhi and Shahdol districts.
- **Ecological corridor:** Part of the Bandhavgarh-Sanjay-Guru Ghasidas-Palamau landscape, forming a vital wildlife corridor between Bandhavgarh and Palamau Tiger Reserves.
- **Rivers:** Key rivers include Banas, Gopad, Mawai, Mahan, Kodmar, and Umrari.
- **Flora:** Dominated by moist deciduous and dry deciduous sal forests, with some areas featuring open sal forests and bamboo remnants.
- **Fauna:** Home to diverse species like tigers, leopards, sloth bears, chital, nilgai, wild dogs, jungle cats, and the Indian python.

### About About Bandhavgarh Tiger Reserve:

- **Location:** Situated between the Vindhyan and Satpura ranges in Umariya district, Madhya Pradesh.
- **Status:** Designated a national park in 1968, it gained Tiger Reserve status in 1993.
- **Topography:** Known for valleys, hills, and plains with the historic Bandhavgarh Fort, associated with Lord Rama and his brother Lakshmana, prominently located.
- **Vegetation:** Features tropical moist deciduous forests, including sal, mixed forests, and grasslands, with bamboo on the lower slopes.
- **Flora:** Includes notable species like Saj (Terminalia tomentosa), Dhaora (Anogeissus latifolia), Arjun (Terminalia arjuna), and Amla (Emblica officinalis).
- **Fauna:** Hosts the Royal Bengal Tiger noted for the highest density of tiger population in India and globally.

### Insta links:

1. Forest.MPonline

### Cybercrime

## 31. DIGITAL ARREST SCAM

### Context:

Prime Minister Narendra Modi recently highlighted the rising threat of the “digital arrest” scam during his Mann Ki Baat address, urging citizens to remain cautious and report suspicious activities.

### About Digital Arrest Scam:

- **Definition:** Digital arrest is a form of cybercrime where scammers impersonate officials from law enforcement agencies (CBI, ED, police, etc.) and claim the victim is involved in serious crimes like money laundering or narcotics trafficking.
- **Method:** Scammers call or video call victims, posing as officials from law enforcement or government bodies (sometimes in official attire or settings) and demand personal information.
- **Tactics:** They gather personal information, create fear by appearing official, and then apply psychological pressure by threatening arrest, often quoting fake legal provisions.

### Indian laws addressing digital arrest scams:

- Information Technology Act, 2000 - **Section 66D:** Punishes cheating by impersonation via computer resources, carrying penalties including imprisonment.
- **I4C:** The MHA-established Indian Cyber Crime Coordination Centre has been blocking fraudulent accounts, including over 1,000 Skype accounts linked to digital arrest scams.
- **Cyber awareness campaigns:** I4C’s “Cyberdost” platform is issuing alerts and spreading awareness about such scams.
- **National cyber-crime reporting portal:** Victims are encouraged to report incidents at the portal or call the helpline (1930).

### PM proposed strategy to combat digital scams:

1. **Cyberhelpline:** Urges citizens to call the national helpline at **1930** for reporting scams.
2. **Cybercrime reporting portal:** Encourages use of **cybercrime.gov.in** to file digital complaints.
3. **Public awareness:** Calls for educational institutions to involve students in awareness campaigns on digital fraud.
4. **Three-step safety protocol:** Advises citizens to **“Stop-Think-Take Action”** before responding to suspicious calls.

**Insta links:**

2. Cyber-security

Defence

## 32. TASL-AIRBUS FACILITY

**Context:**

Prime Minister Narendra Modi and Spanish Prime Minister Pedro Sanchez inaugurated the **Tata Advanced Systems Ltd. (TASL)-Airbus facility** in Vadodara, Gujarat.

- This facility will manufacture the C295 aircraft for the Indian Air Force, marking **India's first private sector plant** to produce military aircraft.
- This collaboration aligns with India's "**Make in India, Make for the World**" initiative, aiming to boost India's defense manufacturing capabilities and strengthen the India-Spain partnership.

**About C295 Airbus facility:**

- **Strategic importance:** The C295 plant marks a milestone in India's defense sector by enabling local, private-sector-led manufacturing.
- **Production:** Of **56 C295 aircraft** for the Indian Air Force, **16 will be from Spain**, with 40 produced in Vadodara.
- **Job creation:** Expected to generate over 10,000 jobs and support MSMEs by sourcing 18,000 indigenous parts.
- **Versatility:** C295 aircraft serve multiple missions like medical evacuations, disaster response, and maritime patrols.
- **Cultural diplomacy:** Highlights shared cultural interests between India and Spain; introduces **2026 as the India-Spain Year of Culture, Tourism, and AI**.
- **Future aviation hub:** Vadodara is poised to become a key aviation manufacturing hub, advancing India's goal to produce indigenous civil aircraft.

**C-295 Aircraft Features:**

- **Versatile tactical airlifter:** Built by Airbus for light-medium transport with a range of mission capabilities.
- **High payload:** Carries up to 9 tonnes or 71 troops, with a max cruise speed of 260 knots.
- **Extended endurance:** Up to 13 hours of flight time, suitable for varied weather conditions.
- **Rear ramp door:** Enables rapid deployment of troops and cargo, enhancing tactical flexibility.
- **Short take-off & landing (STOL):** Operates on unprepared airstrips with high manoeuvrability.
- **Dual propulsion:** Powered by two turboprop engines for efficient performance.
- **Specialized for Tactical Missions:** Low-speed capability (110 knots) and strong low-level

handling.

**Insta links:**

3. C295-Aircraft

## 33. FAST PATROL VESSELS

**Context:**

The Indian Coast Guard (ICG) launched two Fast Patrol Vessels (FPVs) '**Adamyra**' and '**Akshar**', marking a milestone in its commitment to enhanced maritime security and indigenous manufacturing.

- These vessels, built by Goa Shipyard Ltd. (GSL) with over 60% indigenous content, are part of an eight-vessel contract valued at Rs. 473 crores.

**About Fast Patrol Vessels (FPVs):**

- **Dimensions:** 52 meters in length and 8 meters in breadth; displacement of 320 tons.
- **Performance:** Equipped with a Controllable Pitch Propeller-based propulsion system, with a top speed of 27 knots.
- **Indigenous manufacturing:** Over 60% of components are domestically sourced, supporting India's self-reliance in defense.
- **Primary roles:**
  - **Fisheries protection:** Monitoring foreign trawlers in Indian waters.
  - **Coastal patrol:** Regular patrols of the Exclusive Economic Zone (EEZ) and coastal areas.
  - **Anti-smuggling:** Prevents smuggling activities in Indian maritime territory.
  - **Search and rescue:** Conducts search and rescue missions for distressed vessels or personnel.
  - **Communication link:** Provides essential communication channels during conflicts or emergencies.
  - **Escort services:** Escorts coastal convoys during hostilities or wartime conditions.

**Insta links:**

1. Operation-Sajag

## 34. MILITARY EXERCISES

**Context:**

India participated in two notable joint exercises involving its Special Forces: **Exercise VAJRA PRAHAR** with the United States and **Exercise GARUD SHAKTI** with Indonesia.

### About Exercise **VAJRA PRAHAR**:

- **Participants:** Indian Army Special Forces and the US Army Green Berets.
- **Location:** Orchard Combat Training Centre, Idaho, USA
- **Purpose:** To enhance cooperation, joint operations capability, and interoperability between Indian and US Special Forces.
- **Training Focus:**
  - Execution of joint missions in desert and semi-desert conditions.
  - Tactics, including joint planning, reconnaissance missions, use of Unmanned Aerial Systems, and psychological warfare.

### About Exercise **GARUD SHAKTI**:

- **Participants:** Indian Parachute Regiment (Special Forces) and Indonesia's Special Forces, Kopassus.
- **Location:** Cijantung, Jakarta, Indonesia.
- **Purpose:** To boost cooperation, enhance tactical knowledge, and improve interoperability between Indian and Indonesian Special Forces.
- **Training Focus:**
  - Special operations in jungle terrain, strikes on terrorist camps, and tactical drills.
  - Sharing information on weapon systems, equipment, and specialized techniques.



### **Insta Links:**

1. [Bilateral-and-Multilateral-military-exercises](#)

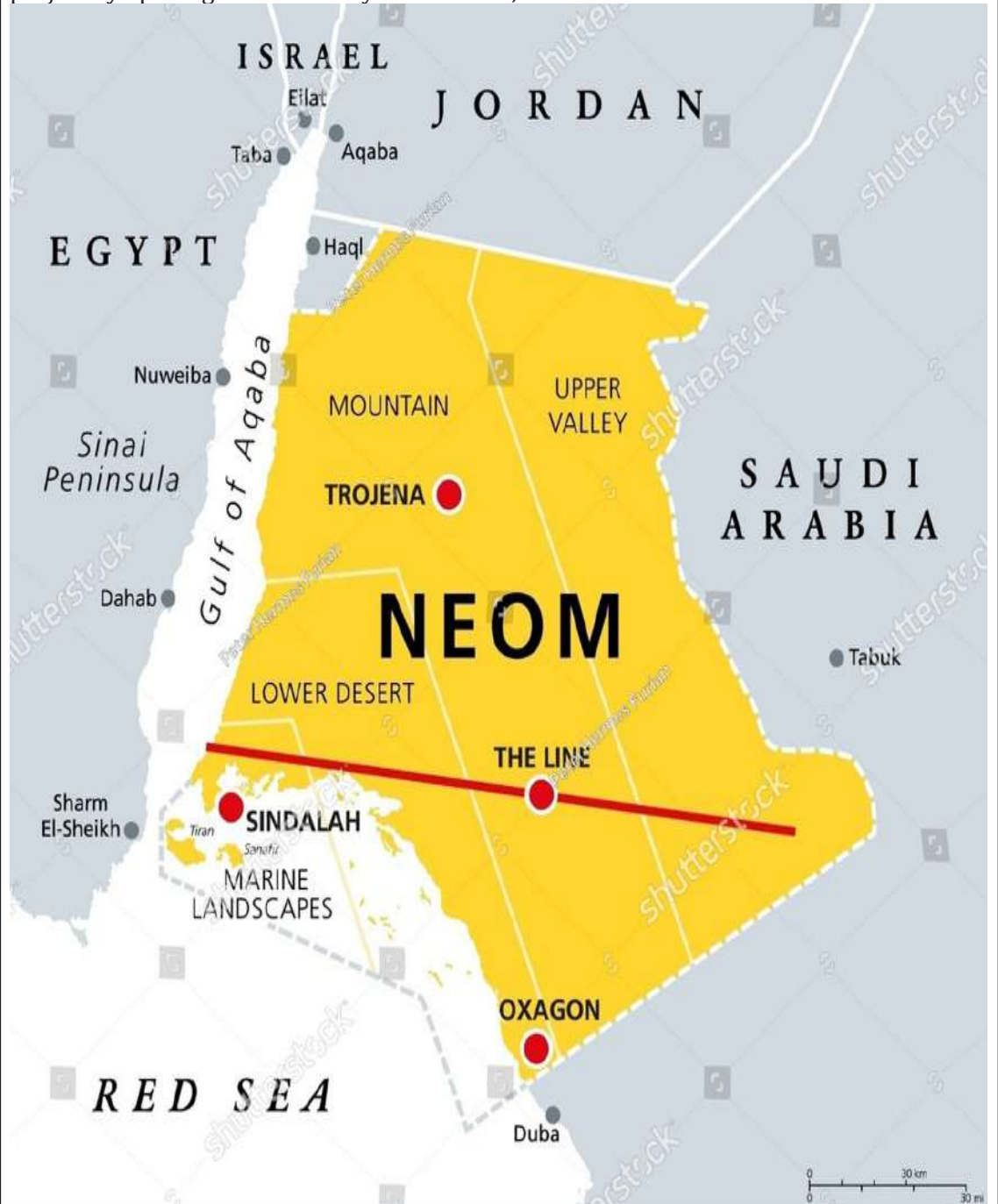
**MAPPING**

INTERNATIONAL

Place	Why in News?
<p><b>1. REFUGEE CAMPS IN THE GAZA STRIP</b></p>	<p><b>Context:</b> Israeli military strikes resulted in the deaths of at least 45 Palestinians in the Gaza Strip, primarily affecting the northern regions, according to Palestinian health officials.</p> <p><b>Places in news:</b></p> <p>The United Nations Relief and Works Agency (<b>UNRWA</b>) provides essential services within eight recognized refugee camps in the <u>Gaza Strip</u>. However, the agency does not police or govern these camps, as those responsibilities lie with local authorities.</p> <ul style="list-style-type: none"> <li>• <b>Beach Camp:</b> Densely populated along the coast.</li> <li>• <b>Bureij Camp:</b> Central Gaza camp, heavily affected by conflicts.</li> <li>• <b>Deir El-Balah Camp:</b> Serves many refugees in central Gaza.</li> <li>• <b>Jabalia Camp:</b> Largest camp in Gaza Strip, faces overcrowding and poor infrastructure.</li> <li>• <b>Khan Younis Camp:</b> Serves a large population in southern Gaza.</li> <li>• <b>Maghazi Camp:</b> Smaller central Gaza camp, affected by economic hardships.</li> <li>• <b>Nuseirat Camp:</b> More populated near Bureij.</li> <li>• <b>Rabah Camp:</b> Located near Gaza-Egypt border, heavily impacted by border conflicts</li> </ul> <div data-bbox="395 1182 1513 1765" style="text-align: center;"> </div> <p><b>NOTE:</b> These locations and names are very important for prelims; please make note of them.</p> <p><b>Insta links:</b></p> <ol style="list-style-type: none"> <li>1. <a href="#">Israel-Palestine-issue</a></li> <li>2. <a href="#">UNRWA</a></li> </ol>

## 2. NEOM PROJECT

**Context:** Saudi Arabia has taken a significant step toward realizing its ambitious NEOM project by opening its first luxury tourism site, an island called Sindalah.



### **About NEOM project:**

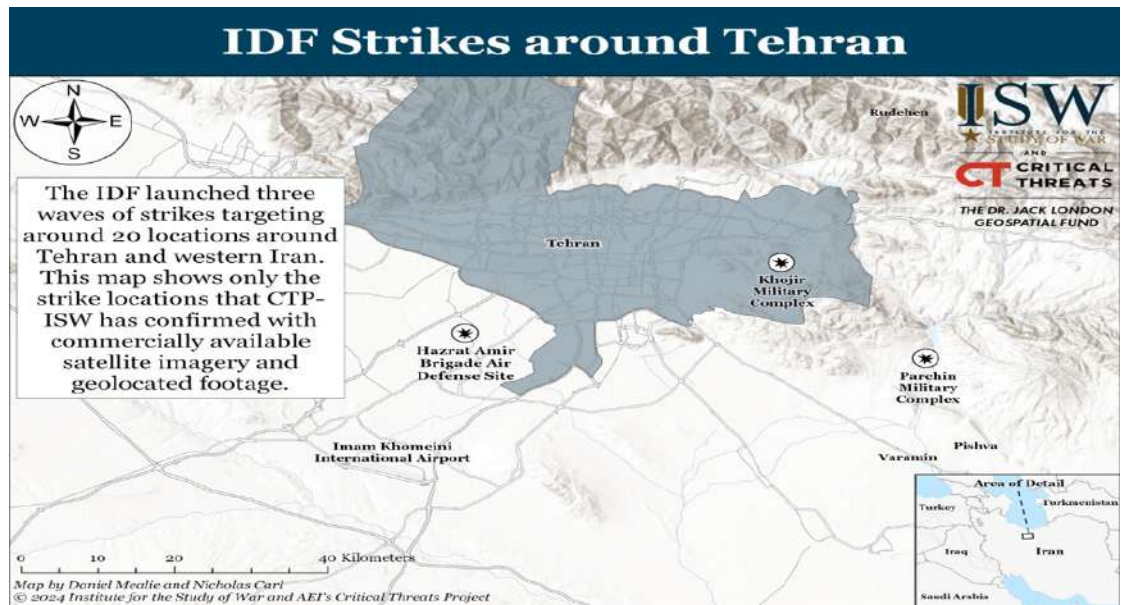
- **Purpose:** NEOM seeks to establish Saudi Arabia as a global luxury tourism and investment hub while advancing sustainable, high-tech urban development.
- **Features:** It includes innovative concepts like *The Line*, twin skyscrapers spanning 170 km, a floating industrial complex called *Oxagon*, and *Trojena*, a mountainous skiing and leisure area.
- **Sindalah Island:** The first open site, Sindalah is a 840,000 square-meter luxury island aiming to attract global tourists and investors with high-end facilities, yachting berths, and a capacity of up to 2,400 guests daily by 2028.

### **Insta links:**

3. [India - Saudi Relations](#)

### 3. IRANIAN MILITARY BASES

**Context:** Recent satellite imagery reveals damage at two Iranian military bases following a suspected Israeli airstrike. The **Parchin base**, historically linked to Iran’s nuclear activities, and **Khojir**, associated with ballistic missile development, both sustained damages.



**Locations in news:**

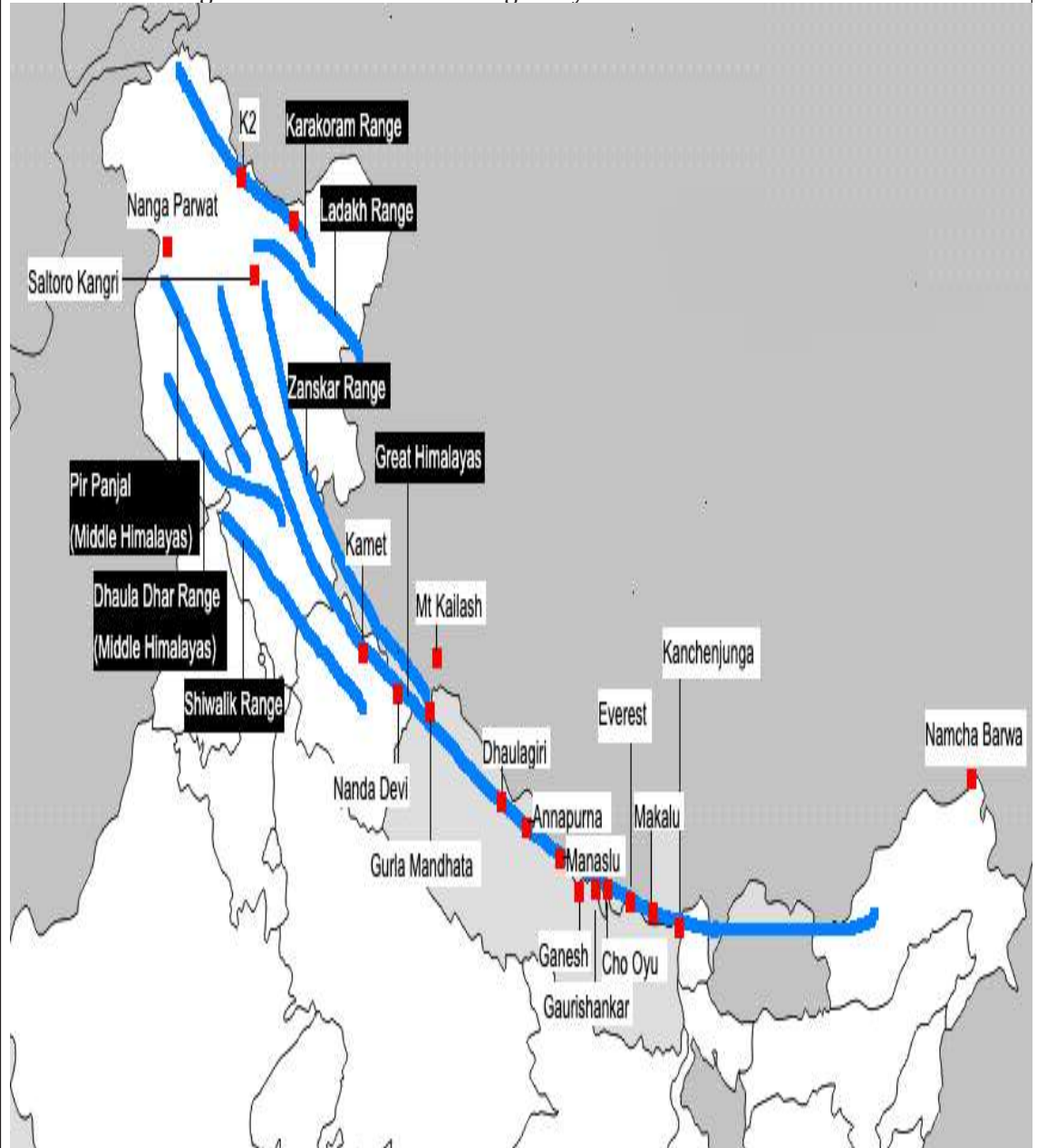
- **Parchin Military Base:**
  - **Location:** Approximately 40 kilometers southeast of Tehran, near the Mamalu Dam.
  - **Significance:** Historically linked to Iran’s nuclear weapons program. The IAEA has suspected it as a test site for explosives that could trigger a nuclear weapon.
  - **Damage:** Satellite imagery shows one building destroyed and others damaged. The site includes **“Taleghan 2,”** a facility identified as containing an explosive testing chamber and flash X-ray system.
- **Khojir Military Base:**
  - **Location:** Roughly 20 kilometers from Tehran, this base includes underground facilities and a tunnel system.
  - **Significance:** Known for housing missile production facilities and is vital to Iran’s ballistic missile program.
  - **Damage:** Satellite images reveal destruction at two structures, impacting Iran’s missile manufacturing capability.

**Insta links:**

- |                                   |
|-----------------------------------|
| 1. <a href="#">Places in News</a> |
|-----------------------------------|

## 4. MOUNT ANNAPURNA

**Context:** Annapurna Base Camp (ABC), located at the base of Annapurna-I, has witnessed a record-breaking influx of tourists following this year’s Dashain festival.




### About Mount Annapurna:

- **Location:** Situated in the Annapurna Range of Gandaki Province, north-central Nepal.
- **Elevation:** Stands as the world’s tenth-highest peak, reaching 8,091 meters above sea level.
- **Conservation:** Encompassed within the Annapurna Conservation Area, covering 7,629 square kilometers.
- **Nickname:** Often called the “Killer Mountain” due to its high fatality rate among climbers attempting to summit.

### Insta links:

1. [Places-in-news](#)

INDIAN

Place	Why in News?
<p><b>5. DHOLAVIRA</b></p>	<p><b>Context:</b> The Prime Minister’s Office (PMO) has flagged concerns regarding the poor preservation, lack of tourist facilities, and halted excavation activities at Dholavira, an ancient Harappan city and UNESCO World Heritage Site.</p> <p><b>About Dholavira:</b></p> <ul style="list-style-type: none"> <li>• <b>Significance:</b> Dholavira is an important archaeological site from the Indus Valley Civilization, inhabited from 3000 BCE to 1800 BCE.</li> <li>• <b>Location:</b> Situated in Kutch District, Gujarat, between the seasonal streams of Mansar and Manhar. <ul style="list-style-type: none"> <li>• Dholavira is the <b>fifth largest site</b> of the <u>Indus Valley Civilization</u> in the sub-continent.</li> </ul> </li> <li>• <b>UNESCO status:</b> Designated a World Heritage Site in 2021.</li> <li>• <b>City layout:</b> Comprises a walled city and cemetery, featuring a Castle with a Bailey, Ceremonial Ground, Middle Town, and Lower Town.</li> <li>• <b>Key features:</b> Notable for its advanced water management system, with 16 reservoirs and channels, step wells, and large public baths.</li> <li>• <b>Historical insights:</b> Dholavira’s remains reveal insights into urban planning, trade, governance, and Harappan culture, showcasing fortifications, gateways, workshops, and residential units.</li> </ul> <div data-bbox="587 1032 1417 1693" data-label="Image">  <p>The map shows the geographical context of Dholavira. It is located in the Kutch district of Gujarat, India, near the border with Pakistan. Other Harappan sites shown include Kalibangan (Binjor) in Rajasthan, Lothal in Gujarat, and Mohenjo-daro in Sindh, Pakistan. Major cities like New Delhi and Jaipur are also marked for reference.</p> </div> <p><b>Insta links:</b></p> <p>4. <a href="#">Aspects-of-Dholavira</a></p>

## 6. PETRAPOLE LAND PORT (MAITRI DWAR)

**Context:** Union Home Minister inaugurated a new passenger terminal building and the ‘Maitri Dwar’ cargo gate at Petrapole Land Port on the India-Bangladesh border in West Bengal.



### About Maitri Dwar:

- **Location:** Positioned at **Petrapole Land Port** on the India-Bangladesh border in West Bengal.
  - Located in the **North 24 Parganas district**.
- **Purpose:** Designed to streamline cross-border cargo movement and support increased trade between India and Bangladesh.
- **Capacity:** Handles around 600-700 trucks daily, boosting the efficiency of cargo handling across the border.
- **Facilities:** Provides integrated infrastructure for customs, immigration, and security for seamless cross-border processing.
- **Significance:** Enhances India-Bangladesh trade relations by supporting nearly 70% of the land-based trade between the two countries.
  - Petrapole is **South Asia’s largest land port** and handles a significant portion of India-Bangladesh land-based trade.

### Insta Links:

1. [India Bangladesh Relations](#)

## 7. SAMBHAR LAKE

**Context:** Over the past three days, **164 migratory birds were found dead at Sambhar Lake** in Rajasthan, raising concerns about a possible recurrence of avian botulism, which previously caused the deaths of around 18,000 birds in 2019.

**Why in news:**

- **Mysterious bird deaths:** 164 migratory birds, including Northern Shovelers and Black-winged Stilts, were found dead at Sambhar Lake.
- **Suspected cause:** Preliminary analysis suggests **avian botulism, a bacterial illness** that affects birds in low-oxygen environments.
- **Response actions:** Local authorities, with support from the State Disaster Response Force (SDRF), are removing dead birds to prevent the spread of the disease, and officials from multiple departments are coordinating conservation efforts.



**About Sambhar Lake:**

- **Location:** Situated in Nagaur and Jaipur districts, Rajasthan, 80 km southwest of Jaipur.
- **Largest saltwater lake:** India's biggest inland saline lake, spanning over 200 sq. km.
- **Shape and feed:** Elliptical in shape, fed by ephemeral streams like Mendha and Runpangarh.
- **Ramsar site:** Designated as a Ramsar site in 1990, marking it as a wetland of international importance.
- **Migratory birds:** Key winter habitat for flamingos, pelicans, and various migratory birds, especially during winter.
- **Salt production:** Produces approximately 210,000 tonnes of salt annually, making Rajasthan one of India's top salt-producing states.

**Insta links:**

1. [Places in News](#)

## 8. CHUSHUL-MOLDO BORDER

**Context:** The Indian and Chinese armies observed Diwali with an exchange of sweets and greetings at the Chushul-Moldo border point in Ladakh, reflecting a continued tradition of goodwill despite ongoing tensions.

**About Chushul-Moldo Border:**

- **Location:** Chushul-Moldo is a key border meeting point situated in eastern Ladakh along the Line of Actual Control (LAC) between India and China.
- **Strategic importance:** Located close to the contested Pangong Lake area, Chushul-Moldo has seen multiple military confrontations, making it crucial for diplomatic interactions.
- **Altitude and terrain:** Situated at a high altitude with challenging mountainous terrain, it serves as a significant location for monitoring troop movements and facilitating communication between the two armies.

**Insta links:**

1. [India China-patrolling-arrangement](#)