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INDIA'S STRATEGIC BALANCING BETWEEN RUSSIA AND THE WESTERN COUNTRIES

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27th JAN 2025

GENERAL STUDIES

UPPCS



9:00 AM



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Message



An officer with a right mindset is an officer that a nation aspires for. A right mindset doesn't necessarily comprise unlimited jargon of knowledge rather a right amount of knowledge and its appropriate execution. Especially, when it comes to UPSC and State PSCs preparation, the crux is not to accumulate the knowledge but its effective implementation and utilization in tackling any situation. The situation here can be anything from UPSC CSE Prelims to the major issues that need to be addressed. The journey is hard but it is worth.

Perfect 7 has been part of many UPSC and State PSCs aspirants in their journey of becoming well reputed officers serving nationally and internationally. The magazine itself had gone through constant ebb and flows of change and improvements. Now, that the magazine is in its monthly era, I hope it becomes your perfect preparation partner and guides you through this ever learning endeavor of Civil Services Preparation.

With Best wishes.

Vinay Singh
Founder
Dhyeya IAS

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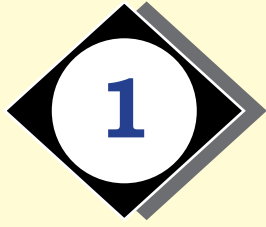
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National



One Nation, One Election (ONOE): A Step toward Electoral Reform and Synchronization

On December 13, 2024, the Union Cabinet of India approved the One Nation, One Election (ONOE) plan, marking a significant step in India's electoral landscape. The proposal seeks to synchronize elections for the Lok Sabha (Lower House of Parliament) and the state legislative assemblies, potentially for the first time in the country's history. The aim is expected to reduce the frequency of elections, streamline governance, minimize electoral expenditure, and mitigate the disruptions caused by the staggered elections across India.

What is One Nation, One Election (ONOE)?

The concept of One Nation, One Election refers to holding elections for the Lok Sabha and state legislative assemblies simultaneously. By conducting these elections at the same time, ONOE aims to:

- ❖ **Reduce Election Frequency:** The frequency of elections is currently high, with separate elections for the Lok Sabha, state assemblies, and local bodies, leading to election fatigue and high costs.
- ❖ **Streamline Governance:** Holding elections at the same time will avoid governance disruptions

caused by the Model Code of Conduct, which comes into effect during election periods and restricts government activities.

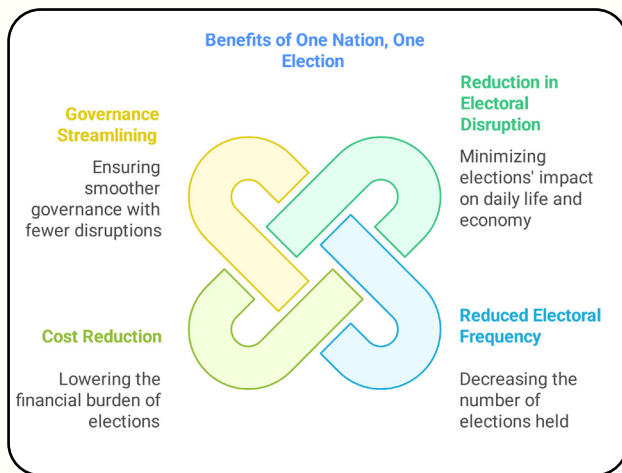
- ❖ **Minimize Expenditure:** Frequent elections drain public resources. Conducting synchronized elections will reduce the financial burden on both the government and political parties.
- ❖ **Reduce Electoral Disruption:** The current staggered elections disrupt daily life and economic activities. A unified election cycle could lead to smoother functioning of the country.

Proposed Constitutional Amendments:

To implement the ONOE plan, several key amendments to the Indian Constitution will be required:

- ❖ **Article 82A:** Aims to facilitate the delimitation of constituencies to synchronize elections.
- ❖ **Article 83(2):** Proposes amendments to the tenure of the Lok Sabha and state assemblies to align their terms.
- ❖ **Article 327:** Grants Parliament the power to make provisions for simultaneous elections.
- ❖ **Article 324A:** A new article will empower the

Election Commission of India (ECI) to conduct synchronized elections.



Ram Nath Kovind Committee Recommendations:

A committee chaired by former President Ram Nath Kovind made several key recommendations for implementing ONOE. The committee's suggestions include:

- ❖ **Reinstating Simultaneous Elections:** Frequent elections cause disruption in the economy, polity, and society. Synchronizing elections would reduce this burden.
- ❖ **Phased Implementation:** The committee proposed two phases:
 - » **Phase 1:** Align Lok Sabha and state assembly elections.
 - » **Phase 2:** Synchronize municipal and panchayat elections within 100 days of general elections.
- ❖ **Shortened Terms for State Assemblies:** New state assemblies will have adjusted terms to synchronize their tenure with the Lok Sabha elections.
- ❖ **Unified Voter Roll and Photo ID System:** The committee recommended establishing a single voter roll and photo ID system for all elections to ensure consistency.

Key Challenges and Concerns:

- ❖ **Constitutional Amendments:** The implementation of ONOE requires changes to India's Constitution, which could face political opposition and challenges. These amendments need to be ratified by Parliament and state legislatures.

- ❖ **Federalism Issues:** Critics argue that ONOE could undermine India's federal structure by centralizing electoral power and reducing the significance of regional and state-level issues.
- ❖ **Logistical Complexity:** The scale of conducting simultaneous elections across a vast and diverse country like India presents a significant logistical challenge. Coordination and planning will be crucial for ensuring the smooth functioning of ONOE.
- ❖ **Regional Diversity and Representation:** India's diverse political landscape might be at risk of being overshadowed by national issues. Synchronizing elections could potentially limit the representation of regional aspirations in the electoral process.

The Road Ahead:

- ❖ **Wider Consultations:** The government must engage with all political parties, state governments, and the public to build consensus on the plan. A broader consultation will help address concerns and ensure that the views of all stakeholders are considered.
- ❖ **Pilot Testing:** Implementing ONOE on a smaller scale could be an effective way to identify potential challenges and refine the system before it is rolled out nationwide.
- ❖ **Infrastructure Development:** The Election Commission of India (ECI) needs to be equipped with the necessary resources, technology, and personnel to manage the logistics of simultaneous elections. This includes ensuring that Electronic Voting Machines (EVMs) and Voter Verifiable Paper Audit Trail (VVPAT) systems are available and functioning smoothly.

Urban Local Governments (ULGs) and One Nation, One Election:

- ❖ Urban Local Governments (ULGs) play a vital role in the decentralization of governance and delivery of essential civic services. Despite the constitutional mandate to hold elections for ULGs every five years, delays are common, often lasting years. This issue has been raised in the discourse surrounding ONOE, and the Government of India has made recommendations for synchronizing ULG elections within 100 days of the general elections. However, there is a need for deeper analysis to address the root causes of delays in

ULG elections.

- ❖ The disempowerment of State Election Commissions (SECs) is another key issue that hampers the timely conduct of ULG elections. Independent authorities, such as the SECs, should be entrusted with responsibilities such as ward delimitation and reservation processes to ensure free and fair elections.

Conclusion:

The One Nation, One Election plan presents an ambitious approach to streamline India's electoral process and reduce the disruptions caused by

frequent elections. While the proposal promises several advantages such as reduced expenditure, better governance, and increased voter turnout, it also faces significant challenges, including the need for constitutional amendments, political consensus, and logistical coordination. The involvement of stakeholders across the country, along with pilot implementation and infrastructural development, will be critical for the success of ONOE. Additionally, the implementation of ONOE should consider the synchronization of elections for Urban Local Governments to ensure timely representation at all levels of governance.

Judicial Activism, Judicial Overreach, and the Places of Worship Act: A Critical Analysis



The Indian judiciary plays a pivotal role in upholding constitutional principles, especially the secular fabric of the country. The concept of judicial inactivism, as discussed by Chad M. Oldfather, highlights the significance of judicial action and inaction. Judicial inaction can sometimes be as consequential as judicial activism, especially when courts defer crucial matters, as seen in the Sambhal Masjid dispute. This case exemplifies judicial reluctance to rule on the Places of Worship (Special Provisions) Act, 1991, a crucial law for preserving India's secular ethos. Additionally, the terms judicial activism and judicial overreach require close examination to understand their impact on the functioning of the judiciary.

Judicial Activism: Theoretical Context

- ❖ Judicial activism involves judges interpreting laws in a dynamic manner, shaping policy decisions, and ensuring that justice evolves with societal changes. While judicial activism has been instrumental in advancing rights and social justice, it can sometimes result in judicial overreach when courts act beyond their constitutional remit. Judicial activism in India has led to several landmark rulings, like those expanding individual rights and influencing policies. However, it also poses challenges when it results in courts overstepping their boundaries and encroaching on the powers of the executive or legislature.

- ❖ In contrast, judicial inactivism refers to the failure of the judiciary to take decisive action when faced with significant constitutional issues. Oldfather's critique of judicial inaction highlights how such failures can have equally profound consequences, particularly when courts avoid addressing critical matters that impact society and the nation.

Judicial Overreach: A Concern

- ❖ Judicial overreach occurs when courts exceed their jurisdiction, making decisions that belong to other branches of government, such as the executive or legislature. In India, this line often blurs, especially in cases involving controversial social issues. Judicial overreach can undermine the separation of powers principle, lead to a backlog of cases, and create confusion regarding the law's application.
- ❖ The Sambhal Masjid case demonstrates judicial inaction when the judiciary deferred action on a significant legal issue regarding the Places of Worship Act. By directing the civil court to freeze proceedings and referring the matter to the Allahabad High Court, the judiciary failed to provide a definitive ruling. This reluctance can be seen as judicial inactivism, which hinders the resolution of pressing constitutional issues.

The Places of Worship Act, 1991:

- ❖ The Places of Worship Act, 1991, was enacted to preserve the religious character of places of worship as it existed on August 15, 1947. The Act aims to ensure that no place of worship is altered in a manner that could disturb the country's communal harmony. The key provisions include:
 - » **Section 3:** Prohibits conversion of any place of worship from one religion to another.
 - » **Section 4(1):** Declares the religious character of places of worship as of August 15, 1947, shall remain unchanged.
 - » **Section 4(2):** Bars legal proceedings regarding the religious character of these places.
 - » **Section 6:** Prescribes penalties for violations, including imprisonment and fines.
- ❖ The Act is fundamental in protecting the secular character of India, preventing any religious community from altering the status of places of worship to suit political or social agendas. However, judicial inaction, as demonstrated in the Sambhal Masjid case, undermines its purpose.

Judicial Deferment in the Sambhal Masjid Case:

- ❖ In the Sambhal Masjid case, the Supreme Court chose not to adjudicate the dispute regarding the application of the Places of Worship Act. Instead, it referred the matter to the Allahabad High Court, thereby avoiding a definitive ruling.
- ❖ This judicial deferral can be considered judicial inactivism, as the Court's avoidance of the matter allowed the legal uncertainty surrounding the Act to persist. A timely ruling could have reaffirmed the Act's intent to preserve the religious status quo and upheld the secular framework enshrined in the Constitution.

Historical Context and Judicial Precedents:

- ❖ This instance of judicial inaction is not isolated. Other recent cases, such as the Shaheen Bagh protests (2020) and Farm Laws protests (2021), reflect similar judicial approaches. In both cases, the Supreme Court opted for mediation or deferral rather than providing a decisive legal judgment. These examples highlight the judiciary's reluctance to tackle politically sensitive issues head-on, contributing to prolonged uncertainty and confusion about legal rights and duties.
- ❖ The Ayodhya judgment (2019), however, was a landmark case where the Supreme Court upheld the Places of Worship Act by reinforcing the importance of maintaining the religious character of places of worship as of 1947. Yet, the subsequent Gyanvapi Mosque case (2023) has raised concerns about the judiciary's commitment to enforcing the Act, as it seemingly permitted actions that contradicted the intent of the 1991 law.

The Need for Judicial Will:

- ❖ In the Sambhal Masjid case, the Court missed an opportunity to reaffirm the validity and intent of the Places of Worship Act. A decisive ruling could have strengthened the secular fabric of the country and sent a strong message about the role of the judiciary in upholding constitutional values. The lack of judicial will to address such matters leaves room for public confusion and mistrust in the judiciary's ability to enforce laws impartially.

The Ayodhya Judgment and Its Implications:

- ❖ While the Ayodhya judgment acknowledged the importance of the Places of Worship Act, its implementation in subsequent cases, such as

the Gyanvapi Mosque, shows inconsistency in upholding the Act. The Act is designed to protect the secular nature of India, but recent judicial actions appear to undermine its very purpose. The shift between these judgments demonstrates how judicial overreach and judicial inaction can create uncertainty and legal inconsistency, eroding public confidence in the judiciary.

Conclusion

❖ The Places of Worship Act, 1991, remains a crucial law to preserve India's secular ethos and prevent the politicization of religious disputes. The judiciary's role in upholding this law is vital, but recent trends of judicial inaction, exemplified by the Sambhal Masjid case, have failed to resolve significant constitutional questions. The judiciary

must balance judicial activism with judicial restraint, ensuring that it does not exceed its constitutional powers or defer critical decisions.

❖ The Sambhal Masjid case presents a critical moment for the judiciary to affirm its commitment to constitutional values and uphold the Places of Worship Act. By exercising its "duty to decide" and adhering to judicial restraint, the judiciary can enhance public trust and reinforce India's secular framework. Judicial activism must be exercised with caution to avoid judicial overreach, ensuring the stability of the legal system and preserving the rule of law. By striking the right balance, the judiciary can contribute to a healthier democracy, protecting individual rights while respecting the separation of powers.

Short Issues

Antitrust scrutiny & CCI

Why in News:

The Competition Commission of India (CCI) is investigating Google for alleged abuse of its dominant position in the Real Money Gaming (RMG) sector, following a complaint by Winzo, a gaming platform. The complaint accuses Google's pilot project of allowing fantasy sports and rummy apps on the Play Store, which allegedly creates an unfair competitive advantage for certain apps.

CCI's Prima Facie Findings:

- CCI has found evidence of anti-competitive behavior by Google, suggesting that its pilot programs offer preferential treatment to certain apps, distorting market competition.
- There are concerns about lack of transparency in Google's policy enforcement, potentially harming smaller competitors and consumers.
- The Director General has been tasked with a two-month investigation into these issues.

Google's Defence:

- Google argues that fragmented gaming laws in India, particularly regarding the distinction between games of skill and games of chance, require case-by-case evaluation of gaming apps.

- The company also points to the diverse regulatory landscape across Indian states, making it difficult to implement a unified policy.

Increasing Antitrust Scrutiny in India:

- The investigation is part of a broader trend of growing antitrust scrutiny in India, with regulators increasingly addressing anti-competitive practices by tech giants.
- In 2023, the CCI fined Meta Rs 213.14 crore for monopolistic practices related to WhatsApp's privacy policy.
- This reflects a stronger regulatory stance on ensuring fair competition in India's evolving digital landscape.

Antitrust Laws in India:

- India's antitrust laws, governed by the Competition Act, 2002, aim to prevent anti-competitive practices, promote fair competition, and regulate market dominance to protect consumers. These laws are enforced by the Competition Commission of India (CCI).

Key areas include:

- **Anti-competitive Agreements:** Prohibits practices like price-fixing, bid-rigging, and market sharing.
- **Abuse of Dominant Position:** Prevents dominant companies from unfairly harming competition

(e.g., through predatory pricing or exclusive agreements).

- **Mergers and Acquisitions:** Regulates mergers to avoid reduced competition in the market.

About Competition Commission of India (CCI):

- The CCI, established under the Competition Act, 2002, enforces antitrust laws and promotes fair competition in India.

Key functions:

- **Investigating Anti-competitive Practices:** Includes addressing abuse of dominance and unfair trade practices.
- **Reviewing Mergers and Acquisitions:** Ensures mergers do not harm market competition.
- **Advisory Role:** Provides guidance on competition policies.
- **Penalties and Remedies:** Imposes fines and corrective actions for violations.

SC Ruling on Prior Sanction for Prosecuting Public Servants

Why in News:

Citing a recent Supreme Court ruling as precedent, Delhi CM have recently approached the Delhi High Court seeking a stay on their ongoing trials. The Supreme Court's ruling, which is central to these pleas, emphasizes the necessity for obtaining prior sanction from the government before prosecuting public servants for alleged offenses, particularly in cases involving money laundering.

- The ruling stemmed from a case in which public servants were accused of money laundering, with the ED seeking to prosecute them without first obtaining the required sanction from the government.
- The Supreme Court held that such prosecutions cannot proceed without the necessary prior approval, as stipulated under Section 197(1) of the Code of Criminal Procedure (CrPC).

What is the Prior Sanction Provision?

- **Section 197(1) of CrPC:** This provision requires the government's prior sanction before prosecuting a public servant for offenses committed during the discharge of official duties. The intention is to protect public servants from arbitrary legal action

while ensuring accountability for misconduct.

- **Exceptions:** No sanction is needed for serious crimes such as sexual offenses, human trafficking, and crimes against women.

Supreme Court's Ruling: Key Points

- **Sanction Requirement for Public Servants:** The Court ruled that the requirement of prior sanction applies not only to criminal offenses under the CrPC but also to cases under PMLA. This sets a legal precedent for future cases involving money laundering charges against public officials.
- **Connection Between Official Duty and Alleged Crime:** The Court emphasized that prior sanction is necessary when the alleged offenses are linked to the discharge of official duties. This connection was a key factor in the ruling, underscoring the importance of government oversight in such cases.

Implications of the Ruling

- **Impact on Ongoing Trials:** The ruling has been cited in ongoing legal proceedings where public servants are facing charges under PMLA. The absence of prior sanction has led to legal challenges seeking to stay trials or dismiss charges.
- **Broader Impact:** The ruling has wider implications for cases under both the CrPC and the Prevention of Corruption Act (PCA), which also mandates prior sanction for prosecuting public servants for corruption-related offenses.

The Prevention of Corruption Act (PCA) and Prior Sanction

- **Section 19 of PCA:** Similar to Section 197 of CrPC, this section requires prior sanction from the government for prosecuting public officials for offenses such as bribery and misuse of office.
- **Section 17A of PCA:** Following amendments in 2018, this section further strengthens the requirement for prior approval before investigating decisions made by public officials in the course of their official duties.

59th All India Conference of Director Generals/Inspector Generals of Police

Why in News:

The 59th All India Conference of Director Generals/Inspector Generals of Police was held in Bhubaneswar

recently. This annual event serves as an essential platform for police leadership to discuss national security and law enforcement challenges

Key Themes Discussed:

- **National and International Security Threats:** Discussions during the conference covered counterterrorism, left-wing extremism (LWE), cyber-crime, economic security, immigration control, coastal security, and narco-trafficking.
- **Emerging Security Concerns:** Special emphasis was placed on security issues along the borders with Bangladesh and Myanmar, the trends in urban policing, and the need to counter malicious narratives.
- **New Criminal Laws and Policing Practices:** The conference also reviewed newly enacted criminal laws and best practices, particularly from India's neighboring regions.

SMART Policing Vision:

- The concept of SMART policing was expanded to include:
 - » Strategic
 - » Meticulous
 - » Adaptable
 - » Reliable
 - » Transparent
- A strong emphasis was placed on the need for police forces to improve not just operational capabilities but also become more strategic, adaptable, and transparent in their approach. The conference focused on preparing law enforcement to adapt to modern challenges, particularly with the rise of digital technologies.

Status of Police Reforms in India:

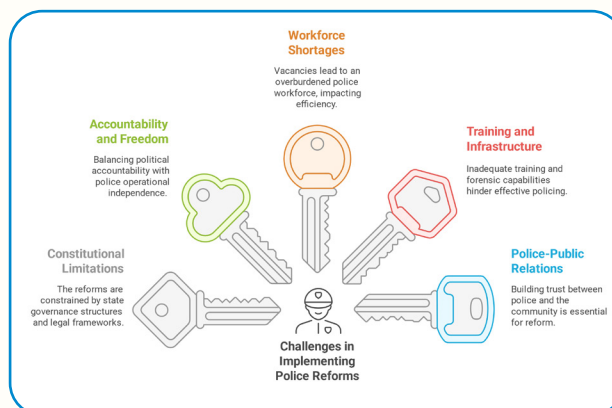
- Police reforms have not been fully realized, despite decades of efforts. The basic framework for policing in India, established in 1861, has not undergone significant changes.
- Public expectations from police forces have increased, and new types of crime, such as cyber-crimes, have emerged. Consequently, there is a need for police reforms to address contemporary issues and ensure effective policing.

Challenges in Implementing Police Reforms:

- **Constitutional Limitations:** Police is a state subject, meaning it is primarily the responsibility of state governments to implement reforms.
- **Accountability and Operational Freedom:**

There is a delicate balance between political accountability and the operational freedom of the police.

- **Workforce Shortages:** A significant number of vacancies in the police force contribute to an overburdened workforce.
- **Training and Infrastructure Issues:** Problems related to police training, qualifications, promotions, and inadequate forensic capabilities persist.
- **Police-Public Relations:** A positive relationship between the police and the public is crucial to prevent crime and disorder.



Committees and Commissions on Police Reforms

- **National Police Commission (1978-82):** Suggested amendments to the Code of Criminal Procedure.
- **Padmanabhaiah Committee (2000):** Recommended structural changes in recruitment, training, and public involvement in crime prevention.
- **Malimath Committee (2002-03):** Focused on strengthening training infrastructure, creating a new Police Act, and improving crime investigation.
- **Ribero Committee (1998):** Reviewed the implementation of previous police reform recommendations.
- **Supreme Court Directives (2006):** Directed states and UTs to implement binding reforms, such as forming a State Security Commission and establishing a Police Establishment Board.

Religious Punishment by the Akal Takht: An Overview

Why in News:

Sukhbir Singh Badal, President of the Shiromani Akali Dal (SAD), was targeted in an attempted assassination at the entrance of the Golden Temple, Amritsar, and while on guard duty. This event occurred amid Badal's religious punishment imposed by the Akal Takht, the supreme authority in Sikhism, for alleged misuse during the SAD-led government (2007-2017).

The Akal Takht: Significance in Sikhism

- The Akal Takht is a key institution in Sikhism, serving as the highest seat of both spiritual and temporal authority. Established in 1606 by Guru Hargobind, it is located within the Golden Temple complex in Amritsar.
- The Akal Takht symbolizes the integration of religious leadership with temporal governance, representing Sikh identity and resistance against external political pressures.

Functions of the Akal Takht:

- **Religious and Temporal Authority:** It provides spiritual guidance and issues directives for the Sikh community. It also addresses community disputes and moral concerns.
- **Symbol of Resistance:** Historically, the Akal Takht has represented Sikh defiance against oppression, emphasizing the importance of both spiritual strength and self-defense.

Tankhah:

- Tankhah, or religious atonement, is a practice within Sikhism where individuals who violate Sikh principles are given a prescribed punishment by the Akal Takht. This form of punishment is designed not to harm, but to guide individuals back toward righteous living.

Tankhah Process:

- **Voluntary Submission:** Sikhs who accept the Akal Takht's authority may be summoned for trial. The punishment, often involving acts of humility or public service, is meant to foster self-reflection and humility.
- **Acts of Atonement:** The individual may be required to perform community service or other symbolic tasks to restore their standing in the community.
- In Sukhbir Singh Badal's case, his tankhah was the

result of allegations concerning governance during the SAD's tenure, and it included cleaning public spaces within the Golden Temple complex.

Akal Takht's Role in Sikh Governance

- The Akal Takht plays a central role in Sikh governance, closely linked with the Shiromani Gurdwara Parbandhak Committee (SGPC), which manages Sikh shrines. The Akal Takht has historically guided Sikh political leadership, reinforcing ethical governance and moral conduct.



Key Aspects of Governance:

- **Guidance on Ethical Leadership:** The Akal Takht influences Sikh political decisions by holding individuals accountable for their conduct and ensuring they adhere to Sikh values.
- **Collaboration with the SGPC:** The SGPC works alongside political entities like the SAD, and the Akal Takht's decisions are often intertwined with political dynamics within the Sikh community.

Conclusion:

The Akal Takht remains an essential institution in Sikhism, balancing spiritual and ethical leadership with community governance. The tankhah process serves as an important reminder of the need for humility and accountability. Sukhbir Singh Badal's case highlights the ongoing relevance of the Akal Takht in guiding Sikh leadership and ensuring that community figures adhere to Sikh principles of justice and moral integrity.

"Reservation Can't Be on Basis of Religion": Supreme Court

Why in News:

The Supreme Court of India recently addressed a critical question on whether reservation benefits can be extended solely based on religion, as it heard appeals against the Calcutta High Court's decision that

nullified the West Bengal government's classification of 77 communities, mostly Muslim, as Other Backward Classes (OBCs).

Background:

- In 2010, the West Bengal government classified 77 predominantly Muslim communities as OBCs to allow them reservation benefits in government jobs and educational institutions. However, the Calcutta High Court struck down this classification on May 22, 2024. The court ruled that the classification appeared to be based solely on religion, not backwardness.
- It also noted that the necessary surveys and data to justify the backwardness of these communities were lacking, violating constitutional provisions on reservations.

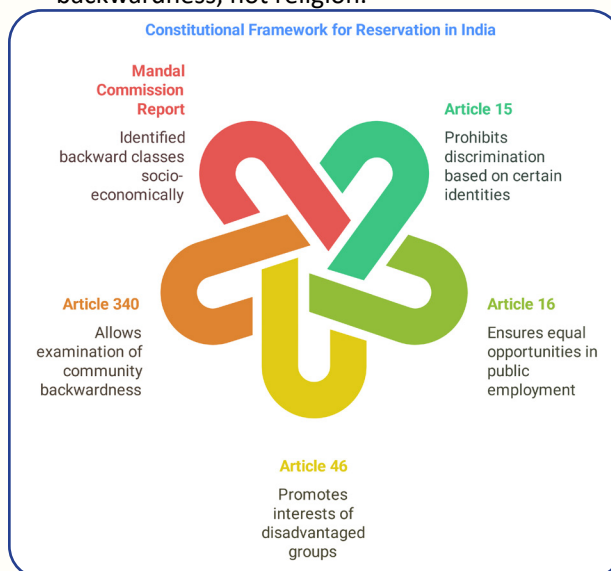
The Supreme Court's Observations:

- The Supreme Court bench, comprising Justices B.R. Gavai and K.V. Viswanathan, observed that "reservation cannot be on the basis of religion." This statement underscores ongoing debates on whether religion should be a valid criterion for reservations.
- The court also acknowledged that a larger constitutional question about using religion for reservations is pending before a Constitution Bench.

Constitutional Framework related to reservation in India:

- The Constitution of India provides for affirmative action to promote social justice, particularly for disadvantaged communities.
 - » **Article 15** prohibits discrimination based on religion, race, caste, sex, or place of birth.
 - » **Article 16** ensures equal opportunities in public employment but allows reservations for backward classes.
 - » **Article 46:** It directs the state to promote the educational and economic interests of Scheduled Castes (SC), Scheduled Tribes (ST), and other socially and educationally backward classes.
 - » **Article 340:** This article allows the creation of a commission to examine the backwardness of certain classes and communities
- The Mandal Commission Report (1980) laid the foundation for identifying backward classes based on socio-economic criteria, particularly caste,

and not religion. The Indra Sawhney Case (1992) reinforced that reservations should be based on backwardness, not religion.



Arguments in the Case:

- Kapil Sibal, representing the West Bengal government, defended the classification, asserting it was based on backwardness, not religion. He referred to quantifiable data on the backwardness of these communities.
- Conversely, P.S. Patwalia, representing the respondents, argued that the state had not followed due procedures, bypassing the Backward Classes Commission and failing to conduct a comprehensive survey on backwardness.

Current Status and Next Steps:

- The Supreme Court has scheduled the matter for further hearing on January 7, 2025. The Court's ruling will likely have a significant impact on the legal framework governing reservations in India, especially with regard to the question of religion-based quotas.
- The decision could further clarify the constitutionality of using religion as a basis for classification under the backward classes category.

No-Confidence Motion Against Vice-President

Why in News:

The Opposition parties in India moved a no-confidence

motion against Vice-President Jagdeep Dhankhar, which the motion was rejected recently.

Reason for the motion:

- The no-confidence motion follows months of opposition tensions with Dhankhar, who is accused of not being neutral in managing debates.
- The Opposition claims their voices were suppressed, especially on key issues opposing the government in Rajya Sabha.

Removal of the Vice President of India:

- Under article 67(b) of the Indian constitution, the Vice President of India can be removed through a resolution passed in the Rajya Sabha with an effective majority (majority of total members) and approved by a simple majority in the Lok Sabha.
- The resolution must be introduced in the Rajya Sabha with at least 14 days' notice. Unlike the President, there is no impeachment process for the Vice President.

Powers and Functions of the Vice President of India:

- **Chairman of Rajya Sabha:** Presides over sessions, ensures parliamentary procedures, and votes in a tie.
- **Acting President:** Temporarily assumes presidential duties if the office is vacant.
- **Presiding Over Debates:** Appoints committees and oversees motions involving judicial appointments.

Significance:

- The Vice President plays a key role in maintaining order in Rajya Sabha debates and shaping legislative decisions. While not holding executive powers, the position is significant in parliamentary functions.

Constitutional Context and Articles:

- **Article 63 - Vice-President of India:** Article 63 of the Indian Constitution states that there shall be a Vice-President of India, who also serves as the Chairman of the Rajya Sabha.
- **Article 89 - Chairman of the Rajya Sabha:** Article 89 of the Constitution designates the Vice-President as the ex-officio Chairman of the Rajya Sabha.
- The Chairman is responsible for the overall conduct and decorum in the House, ensuring impartiality and fairness in its proceedings.
- **Article 68 - Election of Vice-President:** Article

68 governs the procedure for the election of the Vice-President of India, ensuring that the process is conducted in a free and fair manner.

- **Article 71 - Disputes Relating to Election of President and Vice-President:** This article stipulates that disputes regarding the election of the President and Vice-President shall be resolved by the Supreme Court.

Comparison: Vice President of India vs. USA

- **India:**
 - » **Role:** The Vice President is the second-highest constitutional officer and Chairman of the Rajya Sabha.
 - » **President's Replacement:** Temporarily assumes the President's role if the office is vacant, for a maximum of six months.
 - » **Elections:** Elected by an electoral college of Parliament members, not by popular vote.
 - » **Rajya Sabha Functions:** Presides over debates and votes in case of a tie.
- **USA:**
 - » **Role:** The Vice President is second-in-command in the executive and President of the Senate.
 - » **President's Replacement:** Becomes President if the office is vacant, serving the remainder of the term.
 - » **Elections:** Elected alongside the President by popular vote.
 - » **Senate Functions:** Can cast a tie-breaking vote but does not participate in daily Senate business.

Religion and Reservation in India: Legal and Constitutional Perspectives

Why in News:

The Supreme Court's have recently made remarks during the hearing of the Calcutta High Court's ruling. This has reignited debates around the constitutional validity of reservations based on religion. The Supreme Court observed that "reservation cannot be on the basis of religion." This was in response to the Calcutta High Court's May 2024 decision to strike down reservations granted to predominantly Muslim communities within the OBC quota.

Constitutional Framework for Reservations:

- **OBC Reservations Article 16(4):** Empowers the state to provide reservations to “any backward class of citizens” inadequately represented in public services.
- The Supreme Court’s judgment in *Indra Sawhney v. Union of India* (1992) clarified that religion cannot be the sole criterion for classifying a group as backward, though it can be a relevant factor.

State Examples:

- **Kerala (1956), Karnataka (1995), and Tamil Nadu (2007):** Muslims were included within the OBC quota based on social and economic backwardness.
- **The Justice Sachar Committee (2006):** Highlighted the abysmally low representation of Muslim OBCs in government services and recommended equitable access to entitlements.

Calcutta High Court’s Ruling (May 2024):

- The court struck down OBC reservations granted to 77 classes, predominantly from the Muslim community, citing a lack of “objective criteria” to determine backwardness.
- It ruled that religion was the sole basis for these reservations, violating constitutional principles.

SC Reservations:

- **Article 341(1):** Gives the President the power to specify SC communities.
- **The Constitution (Scheduled Castes) Order, 1950:** Initially restricted SC status to Hindus, later extended to Sikhs (1956) and Buddhists (1990).
- **Clause 3:** Excludes individuals who convert to Christianity or Islam from SC reservations, based on the argument that caste disabilities do not persist in these religions.

Key Judicial Precedents:

- **Soosai v. Union of India (1985):** Converts must prove that caste-based disabilities continue to exist even after conversion to claim SC benefits.
- **Ghazi Saaduddin v. State of Maharashtra (Pending):** Challenges the constitutional validity of excluding Christian and Muslim converts from SC status.

Key Issues and Concerns:

- **Objective Criteria for Backwardness:** Courts emphasize that reservations must be based on socio-economic surveys and not solely on religion.
- **Caste Disabilities and Conversion:** Whether

caste discrimination persists after conversion remains a critical question for policymakers and courts.

- **Legislative Delays:** Reports like the Ranganath Mishra Commission (2007) recommended inclusion of Christian and Muslim converts under SC status, but governments have not implemented these findings.

Implications for Governance:

- **Evidence-Based Policies:** Objective criteria like income, education, and employment data are essential for identifying backwardness.
- **Balancing Social Justice:** Policies must address the socio-economic needs of marginalized religious groups without violating constitutional provisions.
- **Judicial Clarity:** Ongoing cases, such as *Ghazi Saaduddin*, and the upcoming report from the K.G. Balakrishnan Commission could shape the future of SC and OBC reservations.

Comparative Analysis:

- Unlike India’s caste-based reservation system, countries like the US and UK implement affirmative action focusing on economic and educational backwardness without religious distinctions.

Way Forward:

- To make reservation policy in India more inclusive, it is necessary to adopt objective criteria. Backwardness should be identified on the basis of socio-economic factors such as income, education and employment. In-depth study with research is necessary to find out whether caste discrimination continues after conversion. The problems of Muslim and Christian converts can be solved by implementing the recommendations of the Ranganath Mishra Commission and the Sachar Committee.
- In addition, early decision on pending cases and commission reports will bring judicial clarity. Along with reservation, emphasis will also have to be laid on education, skill development and employment. Considering the possibilities of reservation on economic grounds could pave the way for inspiration from the affirmative action policies of other countries. With political and social consensus, a policy can be made which does justice to all sections and maintains social balance.

Could the POSH Act Apply to Political Parties?

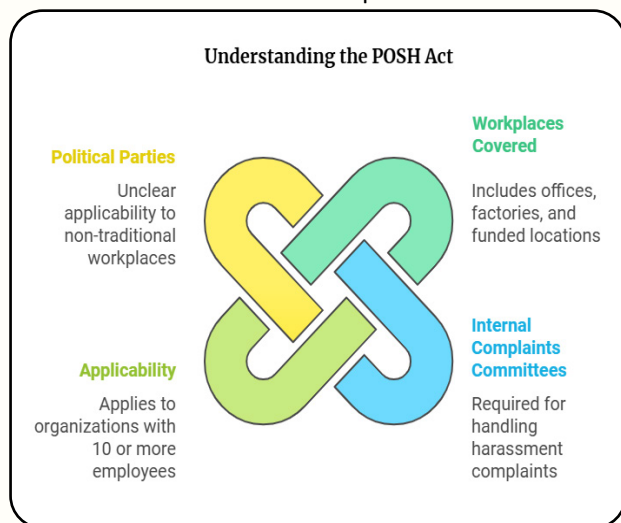
Why in News:

Recently, the issue of lack of any mechanism to handle sexual harassment complaints in political parties was raised in the Supreme Court through a Public Interest Litigation (PIL). The petition questions the absence of a safe workplace for women in political organisations.

- The Supreme Court has directed the petitioner in this case to approach the Election Commission (ECI) so that an in-house mechanism can be developed to handle complaints of sexual harassment within political parties.

About POSH Act's Scope and Purpose:

- The POSH Act, enacted in 2013, aims to prevent sexual harassment in workplaces by requiring organizations to establish Internal Complaints Committees (ICCs).
- The Act applies to all workplaces with 10 or more employees, including public and private sectors, and covers places where employees work or travel during employment.
- The POSH Act defines "workplace" broadly, which includes traditional offices, factories, and any location funded by the government or private entities. However, the application of the Act to political parties remains unclear as they do not fit into the conventional workplace model.



Political Parties and the POSH Act:

- Political parties lack a formal employer-employee relationship, and party workers often do not have

defined workspaces or formal contracts.

- Activities in political parties, such as campaigns and public meetings, are decentralized and do not provide a clear definition of a "workplace" under the POSH Act.
- In 2022, the Kerala High Court ruled that political parties are not required to form ICCs, as they do not have the typical employer-employee structure.
- Despite this, some argue that political parties, being significant public institutions, should be subject to the same protections as other workplaces to ensure the safety and dignity of women.

Election Commission's Role:

- The Election Commission of India (ECI) is responsible for overseeing the registration, governance, and electoral processes of political parties.
- However, the ECI's role does not traditionally extend to enforcing laws such as the POSH Act within political organizations.
- In this case, the Supreme Court has directed the petitioner to approach the ECI to create an in-house mechanism for handling sexual harassment complaints, raising questions about the Commission's authority in this matter.
- The ECI has historically taken an advisory role in other non-electoral matters, like compliance with the Right to Information (RTI) and Child Labour Acts, but its capacity to enforce the POSH Act in political parties remains uncertain.

Current Disciplinary Structures in Political Parties:

- Political parties manage internal discipline through their own committees, but these committees do not meet the POSH Act's standards for ICCs.
- Parties like the Bharatiya Janata Party (BJP) and the Indian National Congress have disciplinary committees, but these committees often lack gender diversity and external representation, which are essential components of the POSH Act's ICCs.
- The POSH Act mandates that ICCs should have at least one external member and a balanced gender composition to ensure fairness and impartiality in handling complaints.
- Many political parties lack a formalized structure to address complaints, making it difficult for workers, volunteers, or office bearers to report sexual harassment.

Way forward:

Legal clarity is necessary to implement POSH Act on political parties. Parliament or Supreme Court can include it in the definition of “workplace”. Election Commission can include women safety and ICC requirement in the code of conduct for political parties. Political parties can set up autonomous complaint mechanisms that follow the standards of POSH Act. Committees with external experts and gender diversity should be formed to ensure safety of women. It is necessary to motivate political parties to create women-friendly environment through social pressure and training programmes.

Banglar Bari Scheme

Why in News:

West Bengal Chief Minister Mamata Banerjee launched the Banglar Bari Housing Scheme, which is fully funded by the state government. The first installment of ₹60,000 was distributed to 42 beneficiaries from 21 districts.

- The West Bengal government has taken a significant step to improve the living standards of its rural population through the Banglar Bari scheme. This ambitious initiative provides financial assistance to 12 lakh families to build concrete houses, which meets the need for safe and permanent housing.

Scheme and Objectives:

- Under the Banglar Bari scheme launched on 17 December 2024, each beneficiary will be given financial assistance of Rs 1.2 lakh, which will be distributed in two installments. Rs 60,000 as the first installment has been transferred directly to the bank accounts of the eligible beneficiaries.
- The second installment will be given when the construction work through the first installment is completed. This initiative addresses several critical problems of rural families:
 - » **Improved quality of life:** Solid houses provide better protection from environmental impacts, thereby improving the quality of life.
 - » **Reduced risk:** Strong houses provide greater protection during natural disasters, thereby reducing the risk of severe weather conditions.
 - » **Increased self-esteem:** Owning a home gives a sense of security and independence, which contributes to the overall well-being of

individuals and families.

Economic and social impact:

- In addition to meeting housing needs, the “Banglar Bari” scheme will also boost economic activities in rural areas. Construction of houses will create employment opportunities for local labourers and increase demand for construction materials, thereby boosting the rural economy. In addition, this initiative strengthens community resilience and social equity by ensuring access to basic infrastructure.
- The government’s commitment to empowering rural families reflects its broader vision of equitable development.
- The scheme is set to bring transformational change in the rural areas of West Bengal by providing housing assistance to 12 lakh beneficiaries in the first phase. The plan to extend this assistance to 1.6 million additional families by 2026 further underscores the scheme's breadth and impact.

Way forward:

The “Banglar Bari” scheme exemplifies the commitment of the Government of West Bengal to meet basic human needs and promote socio-economic progress. By providing rural households access to safe and dignified housing, this initiative lays the foundation for a more prosperous and equitable future, ensuring that no one is left behind in the state's development journey.

Panel on Paper Leak

Why in News:

A seven-member panel, led by former ISRO chairman K. Radhakrishnan, was recently formed by the Ministry of Education following the NEET-UG paper leak. The panel has proposed 101 recommendations to ensure that national-level entrance exams are conducted in a “transparent, smooth, and fair” manner.

Key recommendation of the panel:

- The panel highlighted the need to limit the National Testing Agency's (NTA) scope, especially due to its expanding role in conducting various exams, including recruitment tests, beyond entrance exams.
- The panel recommended that the NTA focus on entrance exams until it can expand its capacity. It also pointed out the NTA's heavy reliance on

outsourced service providers and suggested strengthening its leadership and staffing with domain-specific experts.

- To ensure fair testing, the panel proposed involving state and district-level officials, similar to election management. It recommended coordination committees consisting of NTA, National Informatics Centre (NIC), police, and intelligence agencies. These committees would plan strategies for secure and transparent exams, including sealing testing centres in the presence of authorities and using CCTV monitoring, akin to polling booths.
- The panel also suggested improving the testing process by implementing multi-session exams, including multi-stage testing for NEET-UG, and adopting a centre allocation policy to prevent suspicious allocations.
- It recommended mobile testing centres for remote areas and multiple sets of question papers for pen-and-paper exams, with encrypted delivery to test centres. Additionally, a "Digi-Exam" system was proposed, where candidates' biometrics are verified at testing centres for authentication
- Long-term suggestions included harmonizing and unifying tests across various undergraduate programs, adopting computer-adaptive testing, and collaborating with Kendriya Vidyalayas and Navodaya Vidyalayas to create digital infrastructure.
- The panel also recommended establishing a nationwide network of 400-500 testing centres within a year, providing about 2.5 lakh testing capacities per session. These measures aim to reduce the NTA's reliance on service providers and enhance the overall testing experience.

About NTA:

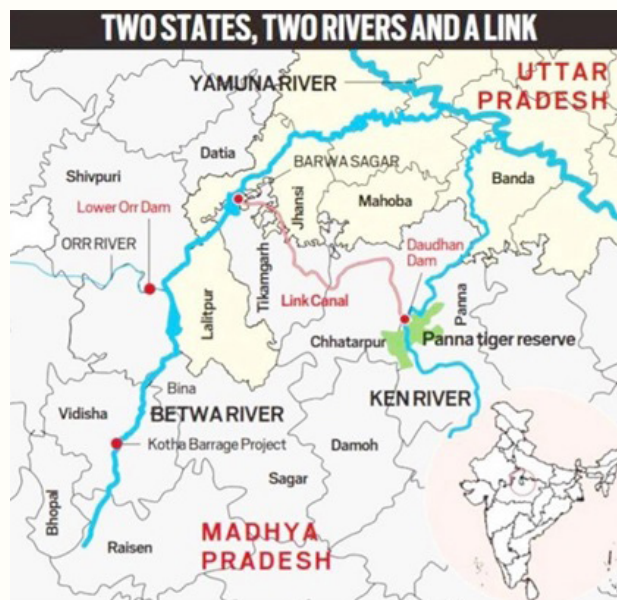
- The National Testing Agency (NTA) was established in 2018 as a society registered under the Indian Societies Registration Act, 1860.
- It was created with the goal of being a specialist, autonomous, and self-sustained testing organization responsible for conducting various entrance examinations for admissions and fellowships in higher educational institutions, such as JEE (Main), CMAT, UGC-NET, among others.
- The NTA is chaired by an eminent educationist, appointed by the Ministry of Education. The Director General is supported by nine verticals, each headed by academicians or experts in their

respective fields, ensuring specialized leadership and oversight across various functions within the agency.

Ken-Betwa River Linking Project

Why in News:

On December 25, Prime Minister Narendra Modi laid the Foundation Stone for the Ken-Betwa River Interlinking Project at Khajuraho, Madhya Pradesh. The memorandum of agreement for the implementation of the Ken-Betwa River Linking Project was signed on March 22, 2021, among the Ministry of Jal Shakti and the governments of Madhya Pradesh and Uttar Pradesh.



About Ken-Betwa River Linking Project:

- The Ken-Betwa River Linking Project (KBLP) aims to transfer water from the Ken river to the Betwa river, both tributaries of the Yamuna. This project will involve the construction of a 221 km long canal, including a 2 km tunnel, and aims to provide irrigation, drinking water, and generate hydropower and solar energy.
- The Ken-Betwa project is part of the National Perspective Plan, aimed at addressing regional water scarcity through river interlinking. The project is seen as a step toward enhancing water availability in drought-prone regions and

promoting equitable water distribution across states.

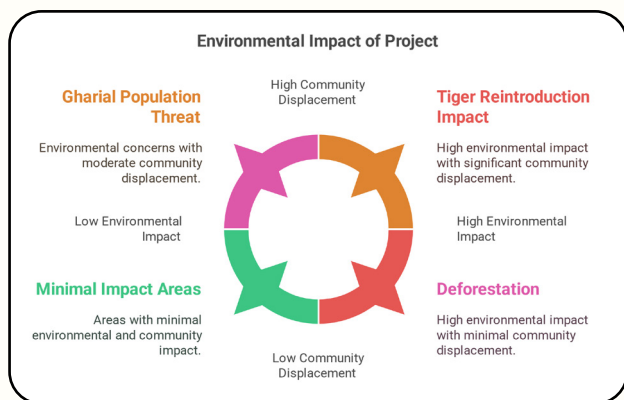
Components of the Ken-Betwa river linking project:

The project is divided into two phases:

- **Phase-I:** Involves the construction of the Daudhan Dam, Low and High-Level Tunnels, the Ken-Betwa Link Canal, and associated powerhouses.
- **Phase-II:** Includes the construction of the Lower Orr Dam, the Bina Complex Project, and the Kotha Barrage.

Benefits of Ken-Betwa project:

- The project is expected to benefit water-scarce regions in the Bundelkhand area, covering parts of Uttar Pradesh and Madhya Pradesh. It will provide irrigation for 10.62 lakh hectares of land, supply drinking water to around 62 lakh people, and generate 103 MW of hydropower and 27 MW of solar power.



Environmental concerns are associated with the Project:

- **Deforestation:** The construction of the Daudhan Dam will require large-scale deforestation inside the Panna Tiger Reserve, impacting wildlife habitats.
- **Impact on Tigers:** The project could reverse the successful reintroduction of tigers in the Panna Tiger Reserve.
- **Impact on Gharials and other species:** The dam's construction is likely to affect the Gharial population in the Ken Gharial Sanctuary and vulture nesting sites.
- **Submergence of land:** The dam will submerge approximately 98 sq km of Panna National Park and affect local communities, displacing over

6,600 families.

Social impacts of the Ken-Betwa project

- The project will displace over 6,600 families from the Panna and Chhatarpur districts due to land submergence and acquisition. This has led to protests from local communities regarding inadequate compensation and the perceived lack of benefits for the affected regions.

Post Office Rules, 2024 and Post Office Regulations, 2024

Why in News:

The Department of Posts (DoP) has introduced Post Office Rules, 2024, and Post Office Regulations, 2024 under post office act, 2023, which came into effect on December 16, 2024. These reforms aim to modernize and streamline postal services across the nation.

Key Features of the Post Office Rules, 2024:

- The Post Office Rules, 2024, simplify the operation of postal services, enabling better service delivery in remote areas through collaborations with both public and private entities. The rules introduce futuristic concepts such as digital address identifiers and digital payment systems for postage, facilitating greater ease of living.

About Post Office Regulations, 2024:

- The Post Office Regulations, 2024, cover operational aspects of postal products and services. They rationalize mail and parcel categories into simplified products, such as merging various book packet types into one umbrella "Book Post". The regulations also increase the money order remittance limit from Rs 5,000 to Rs 10,000 to enhance social welfare disbursements.

About Indian Post Office Act 2023:

- The Indian Post Office Act 2023 is a legislative update that replaced the Indian Post Office Act of 1898. This new law aims to streamline postal services, citizen services, banking, and access to government schemes, ensuring greater efficiency and clarity in operations.

Key provisions of the Post Office Act 2023:

- **Postal Stamp Issuance:** India Post has the exclusive authority to issue postage stamps.
- **Services:** India Post will offer services prescribed by the central government.

- **Authority to Intercept:** Authorized officers can intercept postal articles for reasons such as state security, public safety, and emergencies.
- **Parcel Examination:** Postal articles may be examined or forwarded to customs or another designated authority if there is suspicion.
- **Regulation of Private Courier Services:** For the first time, the Act regulates private courier services within its framework.
- **Liability Exemption:** The Act exempts the post office from liability for loss, delay, or damage unless specified by government regulations.
- **Recovery of Unpaid Charges:** Unpaid postal charges can be recovered as land revenue.
- **Appointment of Director General:** A Director General is appointed to oversee postal services and create related regulations.

Court Collegium

Why in News:

The Supreme Court Collegium recently recommended the appointment of four judicial officers and the elevation of one lawyer to the position of a judge in the High Courts of Rajasthan, Uttarakhand, and Allahabad.

Individuals recommended for appointment:

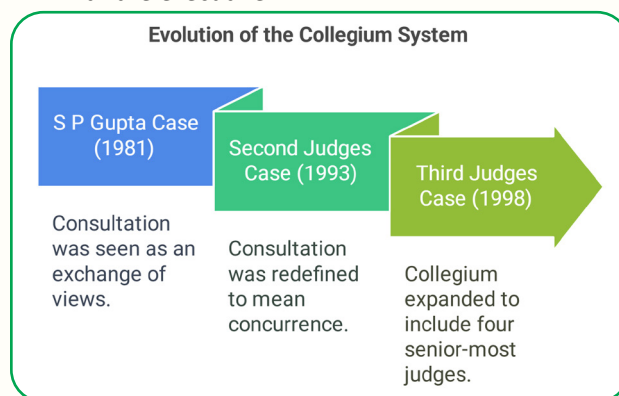
The Collegium proposed the following judicial officers and a lawyer for elevation:

- **Ashish Naithani:** Recommended for the position of judge in the Uttarakhand High Court.
- **Praveen Kumar Giri:** Recommended for the position of judge in the Allahabad High Court (elevation from advocate).
- **Chandra Shekhar Sharma:** Recommended for the position of judge in the Rajasthan High Court.
- **Pramil Kumar Mathur:** Recommended for the position of judge in the Rajasthan High Court.
- **Chandra Prakash Shrimali:** Recommended for the position of judge in the Rajasthan High Court.

About Collegium system in India:

- The Collegium system is a method for appointing and transferring judges in the Supreme Court and High Courts in India. It is not part of the Constitution but has evolved through judicial rulings.
- The system involves the Chief Justice of India (CJI) and senior judges of the Supreme Court recommending appointments and transfers, with the final decision being binding after consultation

with the executive.



What is the origin of the Collegium system?

The Collegium system emerged from a series of Supreme Court judgments:

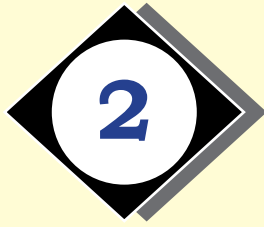
- **S P Gupta Case (1981):** Consultation was interpreted as an exchange of views, not requiring concurrence.
- **Second Judges Case (1993):** The Court reversed its earlier stance, ruling that consultation meant concurrence and that the CJI's advice was binding on the President.
- **Third Judges Case (1998):** This expanded the Collegium to include the four senior-most judges of the Supreme Court for judicial appointments.

How does the Collegium system function?

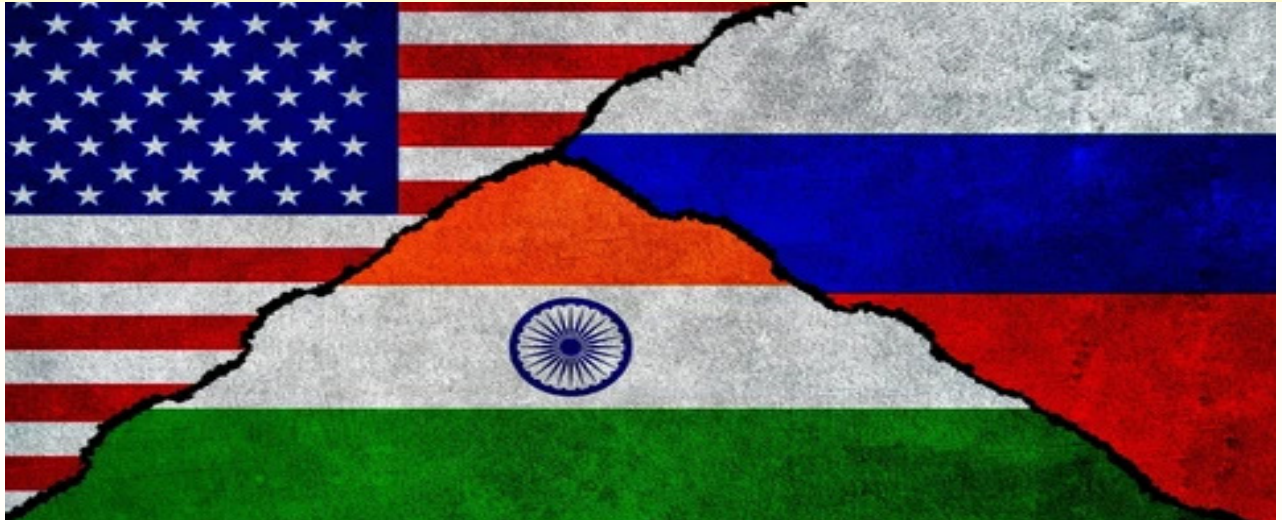
- In the Supreme Court, the CJI, along with the four senior-most judges, recommends the appointment and transfer of judges.
- Similarly, in High Courts, the Chief Justice and the two senior-most judges form the Collegium for judicial appointments.
- The government can raise objections, but if the Collegium reiterates its recommendations, the government must appoint the recommended judges.

Constitutional provisions for judicial appointments:

- **Article 124:** Supreme Court judges are appointed by the President after consulting with the CJI and other necessary judges.
- **Article 217:** High Court judges are appointed by the President after consultation with the CJI, the Governor of the state, and the Chief Justice of the concerned High Court.



International



India's Strategic Balancing between Russia and the West: A Comprehensive Analysis

India's foreign policy reflects a complex balancing act between its long-standing ties with Russia and the deepening strategic partnership with the United States. This nuanced approach highlights India's aspiration for strategic autonomy and its growing role as a pivotal player in global geopolitics. Defense Minister Rajnath Singh's recent remarks at the 21st session of the India-Russia Inter-Governmental Commission on Military and Military Cooperation (IRIGC-M&MTC) in Moscow reaffirmed New Delhi's commitment to deepening ties with Russia, despite mounting Western pressures.

Importance of India-Russia Ties

❖ High-Tech Supplies

- » Russia remains India's most accommodating partner in providing high-tech supplies, including dual-use technologies crucial for India's strategic defense capabilities.
- » Despite growing openness from Western nations like France and the U.S., Russia continues to be a reliable source for fulfilling India's long-range and undersea technology

needs.

❖ Co-Development and Strategic Interests

- » Collaborative defense projects like the BrahMos missile showcase the deep ties between India and Russia.
- » India plays a pivotal role in facilitating the export of Russian-origin technologies, such as BrahMos, to countries like the Philippines, vital for countering China's growing influence and preserving the rules-based order.

Broader Implications:

The India-Russia relationship offers critical global benefits:

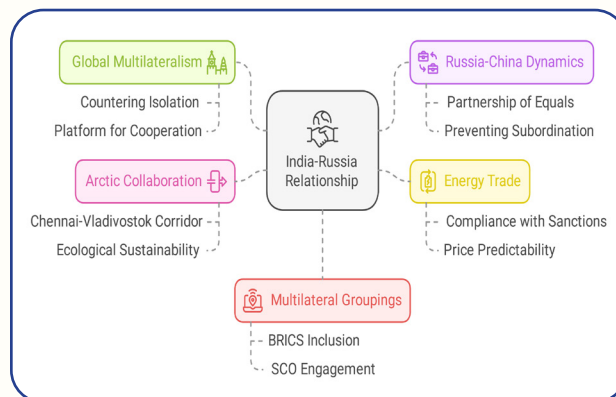
- ❖ **Bridge to Global Multilateralism:** India's commitment to multilateralism ensures Russia remains engaged in the global system, despite its tensions with the West. India bridges disparate geopolitical systems, encouraging cooperation and integration.
- ❖ **Moderating Russia-China Dynamics:** India's

partnership with Russia helps avoid Moscow's total alignment with China, ensuring a balanced geopolitical relationship and preventing a Russia-China axis that could destabilize the global order.

Five Key Contributions of the India-Russia Relationship:

- ❖ **Anchoring Russia to Global Multilateralism:** India's strong stance on multilateralism ensures Russia remains engaged with the broader international system, countering attempts to isolate it. By connecting isolated geopolitical players, India creates a platform for cooperation and integration.
- ❖ **Balancing Russia-China Dynamics:** India's relationship with Russia offers Moscow a partnership of equals, countering China's dominant position. This balance helps prevent a full Russia-China alignment, which could destabilize the global order and challenge the West. Russia's priority to avoid subordination to China is evident in platforms like BRICS, where Moscow values India's moderating influence.
- ❖ **Energy Trade and Global Price Stability:** India's purchase of Russian fossil fuels, compliant with international sanctions, helps stabilize global energy prices. This relationship contributes to price predictability, assisting Europe and the West in avoiding political and economic instability.
- ❖ **Strategic Presence in the Arctic:** India's collaboration with Russia in the Arctic region offers alternatives to a China-dominated governance structure. Projects like the Chennai-Vladivostok corridor highlight efforts to enhance regional connectivity and governance. India's increasing presence in the Arctic ensures ecological sustainability and security for global supply chains.
- ❖ **Moderating Multilateral Groupings:** India's leadership in multilateral groupings like BRICS and the Shanghai Cooperation Organisation (SCO) ensures these platforms are not weaponized against the West. India's approach, as noted by External Affairs Minister S. Jaishankar, reflects India's stance as "non-Western, not anti-Western," allowing for a

balanced diplomatic approach. The inclusion of moderate nations like UAE, Egypt, and Vietnam in BRICS further strengthens India's role as a stabilizing force.



Declining Defense Imports from Russia:

- ❖ **Historical Context:** For decades, Russia was India's primary defense supplier, with cost advantages, reliability, and geopolitical alignment during the Cold War making Russia the preferred choice.
- ❖ **Recent Trends and Data:** In recent years, India has reduced its dependency on Russian defense imports:
 - » **2009–2013:** Russia supplied 76% of India's arms imports.
 - » **2014–2018:** Declined to 58%.
 - » **2019–2023:** Further reduced to 34%.

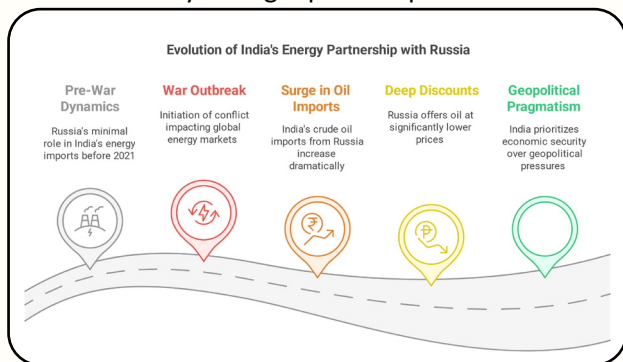
Reasons for Decline:

- ❖ **Russian Defense Industry Challenges:** Economic sanctions and domestic constraints have significantly weakened Russia's global arms export market, with a 53% decline in exports between 2014–2018 and 2019–2023.
- ❖ **India's Self-Reliance Drive:** The Atmanirbhar Bharat initiative has shifted India's focus towards domestic defense manufacturing. India aims to boost defense exports, reduce reliance on foreign suppliers, and enhance its own technological capabilities.

Energy Partnership with Russia:

- ❖ **Pre-War Dynamics:** Before 2021, Russia was a negligible player in India's energy imports, contributing only 2% to India's crude oil purchases.

- ❖ **Post-War Surge in Oil Imports:** India's crude oil imports from Russia surged dramatically, reaching nearly 40% by 2023, driven by:
 - » **Deep Discounts:** Russia offered oil at rates 9–14% lower than other suppliers, making it attractive to India's cost-conscious energy strategy.
 - » **Geopolitical Pragmatism:** Despite Western disapproval, India prioritized economic security over geopolitical pressures.



Recent Shifts in Energy Strategy:

- ❖ **Return to Traditional Suppliers:** As Russian discounts narrowed and transport costs rose, India began diversifying its crude imports back to Gulf countries.
- ❖ **Increased U.S. Oil Imports:** By 2024, the U.S. doubled its share in India's crude oil market. In August 2024, India imported over \$1 billion worth of U.S. oil.

Navigating Western Pressures

U.S. Concerns and Actions: The United States has raised concerns over India's close ties with Russia, particularly in defense and energy:

- ❖ **Defense and Energy Sanctions:**
 - » Sanctions under CAATSA targeted India's purchase of the S-400 air defense system from Russia.
 - » Nineteen Indian firms faced sanctions for alleged involvement in Russia's military supply chain.
- ❖ **Oil Trade Criticism:**
 - » U.S. officials criticized India's large-scale purchase of discounted Russian oil and threatened "consequences", though they did not impose red lines on oil imports.

India's Sovereign Stance:

- ❖ India has consistently asserted its strategic autonomy and right to determine its foreign and energy policies independently:
 - » **Economic Pragmatism:** India prioritizes low-cost energy imports to meet its growing domestic energy demands and developmental needs.
 - » **Sovereign Decisions:** India emphasizes its sovereignty and resists pressure to disengage from Russia.

Strengthening U.S.-India Relations:

- ❖ To manage the complexities of India-Russia relations, the U.S. must adopt a nuanced approach:
 - » **Respect for Sovereignty:** Pressuring India to sever ties with Russia risks damaging U.S.-India relations, undermining the trust and cooperation between the two nations.
 - » **Encouraging Mediation:** India's potential role in mediating the Ukraine crisis presents an opportunity for constructive engagement between the U.S. and India.
 - » **Focusing on Common Goals:** The U.S. and India share mutual interests in the Indo-Pacific region, countering China's rise, and enhancing economic and technological collaboration, all of which should be emphasized in their partnership.

Conclusion:

- ❖ India's foreign policy reflects a deliberate effort to balance its historical ties with Russia and its strategic alignment with the United States. The decline in Russian defense imports, the diversification of energy sources, and the focus on indigenous defense production underscore India's evolution into a self-reliant and pragmatic global player. For long-term stability, it is crucial for the U.S. to respect India's unique geopolitical position and foster a relationship that strengthens shared strategic goals while honoring India's sovereignty.
- ❖ This strategic balancing is vital for global peace and stability, and the future trajectory of the India-Russia relationship will remain crucial in shaping the geopolitical landscape of 2025 and beyond.

Short Issues

UK's Assisted Dying Bill

Why in News:

The UK has moved closer to legalizing assisted dying or euthanasia with the recent passage of the Terminally Ill Adults (End of Life) Bill, which allows terminally ill patients to request assistance in ending their lives.

Key Aspects of the UK's Assisted Dying Bill:

- **Eligibility Criteria:**
 - » Only terminally ill patients with a prognosis of six months or less to live can request assisted dying.
 - » The patient must be over 18, mentally competent, and a resident of England or Wales for at least 12 months.
- **Process:**
 - » The patient must make a formal request in front of a coordinating doctor and a witness.
 - » The request is then assessed by the coordinating doctor, followed by an independent doctor after a 7-day reflection period.
 - » If both doctors approve, the case is sent to the High Court for review. A second 14-day reflection period follows before the patient can confirm their decision.
- **Administering the Substance:**
 - » The patient self-administers an "approved substance" to end their life, with no doctor involved in directly administering it.

Arguments For and Against the Bill:

- Proponents argue that assisted dying offers terminally ill patients a dignified death and helps end their suffering, particularly when palliative care fails.
- Opponents worry about misuse, especially for vulnerable groups like the elderly or disabled, and suggest focusing on improving palliative care instead.

Assisted Dying in India: Passive Euthanasia

- India's laws differ, focusing on passive euthanasia, which involves withdrawing life support from terminally ill patients, allowing them to die naturally.
- **Legal Position:**
 - » The Supreme Court of India, in 2018, ruled that the right to die with dignity is part of the right to life under Article 21, allowing passive

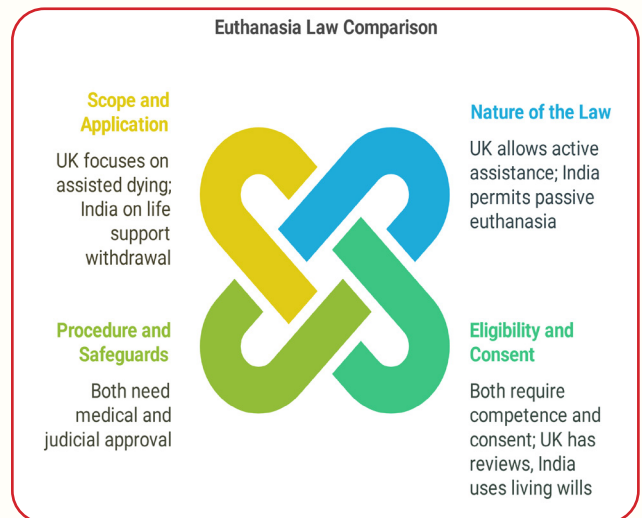
euthanasia.

- **Guidelines for Passive Euthanasia:**

- » Patients must create a living will specifying their desire to withdraw life support, which must be signed by two witnesses and a Judicial Magistrate.
- » A medical board assesses the case before life support can be withdrawn.

Recent Developments:

- In 2023, guidelines were simplified to reduce the Judicial Magistrate's role and set strict timelines, though implementation remains limited.



Comparison of the UK and India's Laws:

- **Nature of the Law:** The UK allows active assistance in dying through self-administration of a substance, while India permits passive euthanasia, where life support is withdrawn.
- **Eligibility and Consent:** Both require mental competence and consent. The UK involves multiple medical and judicial reviews; India relies on living wills and judicial scrutiny.
- **Procedure and Safeguards:** Both countries require approval from medical and judicial authorities to ensure voluntary and informed decisions.
- **Scope and Application:** The UK allows assisted dying for terminally ill patients; India focuses on withdrawal of life support without active intervention.

Martial Law in South Korea

Why in News:

South Korean President Yoon Suk Yeol recently declared martial law, marking the first such imposition since 1980. This move has thrown the country into political and constitutional turmoil, raising concerns over civil liberties and democratic governance.

What is Martial Law?

- Martial law is a temporary emergency measure in which military authorities replace civilian administration to address severe threats or crises such as war, natural disasters, or internal unrest. Under martial law:
 - » Civil administration is replaced by military control.
 - » Fundamental rights and freedoms are suspended.
 - » Military personnel assume responsibility for law and order.

Current Restrictions in South Korea:

- » **Parliament Access Blocked:** MPs are prohibited from entering the National Assembly.
- » **Ban on Political Activities:** Protests, public gatherings, and political functions are forbidden.
- » **Media Control:** The military now oversees media outlets and publications.
- » **Strikes Banned:** Industrial strikes and walkouts have been declared illegal.
- » **Travel Restrictions:** Checkpoints restrict movement in high-risk regions.
- These measures aim to restore order but significantly limit civil liberties.

South Korea's Constitutional Provisions:

- Article 77 of South Korea's Constitution allows martial law during war, armed conflict, or similar national emergencies. It permits:
 - » Suspension of civil liberties, including freedom of speech, press, and assembly.
 - » Military authority to override executive and judicial functions.
- Despite constitutional backing, this declaration has faced criticism, even from within the President's party, for undermining democratic institutions.

Martial Law in India: Article 34

- In India, Article 34 addresses martial law, granting

Parliament the power to indemnify government personnel for acts committed under martial law. Key features include:

- » **Suspension of Fundamental Rights:** Civil liberties may be restricted.
- » **Government and Court Functions Suspended:** Military authority replaces civilian control.
- » **Application:** Used during crises such as war, rebellion, or external aggression.
- Martial law in India remains a last-resort measure, aimed at restoring order during severe crises.

Martial Law vs. National Emergency in India

Aspect	Martial Law	National Emergency
Scope	Impacts	Affects rights and federal relations
Government Functioning	Suspends	Both remain functional
Purpose	To restore law and order	Address war, aggression, or rebellion
Constitutional Basis	No explicit mention	Articles 352–360

Implications of Martial Law in South Korea

- **Political Fallout:** Critics argue it undermines democracy and suppresses dissent.
- **Civil Liberties:** Restrictions on media, protests, and political activities have curtailed freedoms.
- **Economic Impact:** Bans on strikes could affect industrial output and investor confidence.
- **Global Concerns:** South Korea's democratic image is under scrutiny.

Conclusion:

The declaration of martial law reflects South Korea's deep political challenges. While martial law aims to restore order, its imposition raises concerns over democracy, civil liberties, and constitutional safeguards. This crisis highlights the need for democratic solutions to political and social unrest.

UN Talks in Riyadh

Why in News:

In December 2024, the 16th Conference of the

Parties to the United Nations Convention to Combat Desertification (UNCCD COP16) was held in Riyadh, Saudi Arabia, focusing on the environmental challenges of drought and desertification. A key report presented at the summit outlined the severe impact of human-induced climate change, water scarcity, and deforestation on ecosystems globally.

Key Findings:

- **Global Water Scarcity:** The report highlighted the intensification of drying conditions, with heat-driven evaporation worsening water scarcity. This impacts ecosystems and makes it difficult for humans and animals to access sufficient water.
- **Agricultural Impact:** Drought and land degradation threaten food security by reducing crop yields and grazing land. This exacerbates hunger and malnutrition, especially in vulnerable regions.
- **Migration and Economic Challenges:** The report noted that desertification and drought are driving migration, particularly in regions like southern Europe, the Middle East, North Africa, and parts of Asia. These areas face economic instability due to erratic rainfall and land degradation.
- **Future Projections:** If current climate trends continue, nearly five billion people could be affected by worsening droughts by the end of the century, significantly increasing the current number of affected individuals.



International Response:

- At the Riyadh summit, Saudi Arabia pledged \$2.15 billion, while the Arab Coordination Group committed \$10 billion by 2030 to fight desertification.
- These funds will help vulnerable countries enhance their drought resilience, improve water

management, and build infrastructure like reservoirs.

Strategies to reduce land degradation:

- **Sustainable Land Use:** Practices such as water-efficient irrigation and reducing deforestation can mitigate land degradation.
- **Reforestation:** Large-scale reforestation efforts can restore soil moisture, prevent desertification, and stimulate local economies.
- **Early Warning Systems:** Strengthening monitoring systems for drought and land degradation can help communities better prepare and respond.

Challenges:

- Despite financial pledges, critics argue that the summit failed to address the root cause: climate change. Saudi Arabia, as the host nation, faced criticism for not reducing its reliance on fossil fuels, which exacerbate climate-related crises.
- The urgency for action is clear, with the report stressing the need for immediate and comprehensive measures to restore ecosystems and combat land degradation.

About the UNCCD:

- The UNCCD, which entered into force in 1996, is the only legally binding international framework addressing desertification.
- The UNCCD aims to combat desertification through sustainable land practices and land restoration efforts. It focuses on regions suffering from severe droughts, especially in Africa, and promotes long-term strategies for sustainable development.
- It encourages international cooperation and national action programs focused on sustainable development, with 197 parties, making it near universal in reach.

India-Iran-Armenia Trilateral Consultation

Why in News:

The second India-Iran-Armenia trilateral consultation, held in New Delhi, focused on enhancing cooperation in connectivity, trade, and regional stability. Led by India's Joint Secretary of the Pakistan, Afghanistan, and Iran Division, JP Singh, the consultation also included delegations from Iran and Armenia.

Key Areas of Discussion:

- **Connectivity Initiatives:** The discussions emphasized the importance of the International North-South Transport Corridor (INSTC) and the Chabahar Port in Iran. These initiatives aim to enhance trade routes between the three nations and beyond, especially to Central Asia and Europe. Armenia introduced its "Crossroads of Peace" connectivity initiative, aiming to improve regional connectivity further.
- **Trade, Tourism, and Cultural Exchanges:** A significant focus was placed on boosting trade, tourism, and cultural exchanges. The trilateral partners highlighted the need for strengthening people-to-people ties to enhance mutual understanding and collaboration.
- **Future Consultations:** The trilateral partners agreed to hold the next round of consultations in Iran at a mutually convenient date.

India-Iran Bilateral Relations:

- **Economic Cooperation:** Bilateral trade between India and Iran reached \$2.33 billion in the fiscal year 2022-23. India's exports to Iran were valued at \$1.66 billion, while imports stood at \$672.12 million.
- **Energy Cooperation:** Energy remains a cornerstone of India-Iran relations, particularly with the strategic Chabahar Port offering an alternative trade route. Despite sanctions, Iran's crude oil production showed resilience, reaching 3.4 million barrels per day in May 2024.
- **Strategic Connectivity Projects:** The Chabahar Port and the development of a 700 km railway link between Chabahar and Zahedan, including connectivity to Afghanistan, are key projects discussed.

India-Armenia Bilateral Relations:

- **Economic Relations:** India and Armenia are exploring untapped trade potential in sectors like information technology, pharmaceuticals, and agriculture. The bilateral trade in 2020 was valued at \$46.3 million.
- **Cultural and Educational Cooperation:** Indian culture, including cinema, yoga, and Ayurveda, is popular in Armenia. Additionally, many Indian students pursue medical education in Armenia, strengthening cultural and educational ties.



India-Iran Defense Relations:

- India and Iran have established several consultative mechanisms to address security and strategic concerns. These include foreign office consultations, security consultations, and joint consular meetings.

India-Armenia Defense Relations

- **Arms Deals:** Armenia signed a \$40 million arms deal with India in 2020, which included the supply of SWATHI radars for detecting the location of weapons.
- **Missile and Ammunition Exports:** India has also exported Pinaka multi-barrel rocket launchers and Man Portable Anti-Tank Guided Missiles (MPATGM) to Armenia, enhancing the defense capabilities of both nations.

Conclusion:

The India-Iran-Armenia trilateral consultation represents a significant step in strengthening cooperation in critical sectors such as connectivity, trade, energy, defense, and regional security. The partnership aims to promote regional stability and economic growth, with the trilateral discussions paving the way for deeper diplomatic, economic, and strategic relations among the three countries.

India-Thailand Relations

Why in News:

India and Thailand share a centuries-old relationship rooted in trade, culture, and religion. This partnership has evolved into a robust multi-sectoral cooperation

over the years, encompassing trade, investment, defence, and tourism. The 9th India-Thailand Defence Dialogue was held recently in New Delhi on December 12, 2024.

Recent Developments

- The 9th India-Thailand Defence Dialogue, held on December 12, 2024, in New Delhi, marked a significant step in strengthening bilateral defence cooperation. Co-chaired by India's Joint Secretary (International Cooperation) and Thailand's Deputy Permanent Secretary for Defence, the dialogue explored initiatives such as:
 - » Establishing a Joint Working Group to monitor defence industry cooperation.
 - » Conducting Subject Matter Experts Exchange between the armed forces.
 - » Exploring co-design, co-production, and co-development in defence industries.
- The dialogue underscores Thailand's strategic importance in India's Act East Policy and complements Thailand's Look West Policy, enhancing bilateral relations.



Trade and Investment

- Bilateral trade between India and Thailand has shown remarkable growth:
 - » 2020: \$9.76 billion
 - » 2021: \$15 billion
 - » 2022-23: \$16.89 billion

- **India's Major Exports to Thailand:**
 - » **Pearls, precious stones, and jewellery:** \$1.02 billion (2022-23)
 - » **Mechanical machinery and parts:** \$570 million (April-November 2023-24)
 - » **Marine products:** \$219 million (April-November 2023-24)
- **India's Major Imports from Thailand:**
 - » Plastic raw materials: \$915 million
 - » Electronic components: \$895 million
 - » Vegetable oils: \$523 million
- Thailand ranks as the 27th largest investor in India, with a cumulative FDI of \$1.39 billion (April 2022-September 2023). Indian companies like Tata Steel and TCS have established a strong presence in Thailand, while Thai firms invest in India's agro-processing, construction, and automotive sectors.

Connectivity Projects:

- **India-Myanmar-Thailand Trilateral Highway:** Enhances trade and tourism by connecting Southeast Asia.
- **Dawei Project:** Links the Dawei deep-sea port in Myanmar to Chennai, offering an alternative to the congested Strait of Malacca.

Defence Cooperation:

- The dialogue emphasized the potential of India's domestic defence industry in supporting Thailand's defence acquisition plans. Thailand's delegation also visited the DRDO headquarters to explore collaborative opportunities in defence research and joint production.

Challenges in Bilateral Relations:

- **Trade Imbalances:** India's exports (\$5.71 billion) fall short of its imports (\$11.19 billion) from Thailand (2022-23).
- **Technical Barriers:** Stringent standards and certification processes hinder trade, especially for marine and poultry products.
- **Infrastructure Deficiencies:** Inadequate logistics and warehousing infrastructure impede efficiency.

ASEAN and Regional Cooperation:

- Thailand's strategic role within ASEAN amplifies its importance to India. ASEAN, with its combined GDP of \$10.2 trillion, promotes regional stability and economic growth.
- Collaboration through initiatives like the Asia-Pacific Economic Cooperation (APEC) and the Regional Comprehensive Economic Partnership

(RCEP) aligns India's Act East Policy with ASEAN's goals.

Maritime Cooperation between India and Manila

Why in News:

India and the Philippines held their first Maritime Dialogue in Manila on December 14, 2024, aiming to strengthen bilateral ties and address regional maritime challenges. A central theme was upholding a rules-based international order, emphasizing adherence to the United Nations Convention on the Law of the Sea (UNCLOS). Both nations stressed the need for peaceful, sustainable, and equitable use of oceans.

Areas of Cooperation Discussed:

- The dialogue explored cooperation in maritime industry development, marine scientific research, ocean economy, and Humanitarian Assistance And Disaster Relief (HADR).
- India and the Philippines also discussed enhancing naval and coast guard cooperation, maritime law enforcement, and capacity-building initiatives.
- Both countries expressed a desire to collaborate in regional and international forums to advance shared maritime goals, ensuring economic prosperity and security.

Milestone in Bilateral Ties:

- The dialogue marked the 75th anniversary of diplomatic relations between India and the Philippines, symbolizing a long-standing and growing partnership.

Historical Context of India-Philippines Relations

- **Diplomatic Relations:** India and the Philippines have maintained diplomatic relations since 1949, with their ties deepening significantly in recent years.
- **Bilateral Trade Growth:** Bilateral trade increased from USD 1.89 billion in 2015-16 to USD 2.84 billion in 2021-22. India is the largest supplier of pharmaceutical products to the Philippines.
- **Defense Cooperation:** Both countries participate in joint military exercises, including RIMPAC and the ASEAN-India Maritime Exercise. In 2022, India supplied BrahMos missiles to the Philippines, further enhancing defense ties.



Cultural and Technical Exchange:

- India and the Philippines have thriving cultural and educational exchanges, with India's Technical and Economic Cooperation (ITEC) program benefiting the Philippines. The two countries share a close relationship through institutions like the International Rice Research Institute (IRRI).

Recent Developments and Challenges

- **Collaboration in Emerging Sectors**
 - » There has been growing cooperation in fintech, space (through collaboration between the Philippine Space Agency and ISRO), and renewable energy sectors.
- **Shared Maritime Security Interests**
 - » As democratic nations in the Indo-Pacific, India and the Philippines have aligned their interests in maintaining maritime security.
 - » India's Act East Policy, aimed at enhancing engagement in Southeast Asia, has played a key role in strengthening ties with the Philippines.
 - » India has supported the Philippines' position on the South China Sea and opposed any attempts to alter the region's maritime order unilaterally.
- **Regional Challenges:**
 - » The region faces challenges from shifting power dynamics, particularly due to China's assertive role in the South China Sea and broader Indo-Pacific security issues. Concerns about sovereignty and freedom of navigation in contested waters, particularly in the South China Sea, have raised alarms for both India and the Philippines.

New Eastern Route

Why in News:

The Chennai-Vladivostok sea route also known as Eastern Maritime Corridor has emerged as a game-changer in India's trade relations with Russia, particularly in the crude oil trade. This new maritime corridor has bridged the distance between India and Russia, resulting in significant time and cost savings for shipments.

- The Eastern Maritime Corridor has played a pivotal role in India's rise as the top buyer of Russian oil. In July 2024, India surpassed China as the largest buyer of Russian oil, with the Chennai-Vladivostok sea route facilitating this shift.

About Chennai-Vladivostok Maritime Corridor (VCMC):

- The Chennai-Vladivostok Maritime Corridor (VCMC) is a sea route connecting Chennai (India) to Vladivostok (Russia) as part of the Eastern Maritime Corridor, aimed at enhancing trade and regional connectivity.

Key Details:

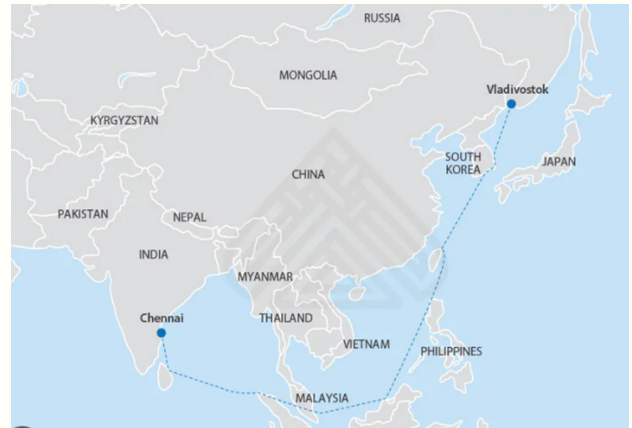
- **Background:** Formalized during Indian Prime Minister Narendra Modi's 2019 visit to Russia, the VCMC aims to boost trade between India and Russia, particularly in energy, minerals, and defense.
- **Route:** The route spans 5,600 nautical miles and passes through regions like the Sea of Japan, South China Sea, Strait of Malacca, Bay of Bengal, and the Andaman Islands.
- **Port Locations:** Vladivostok is Russia's largest Pacific port, near the China-Russia border. Chennai is a major Indian port on the eastern coast.

Benefits:

- **Reduced Transit Time:** Shipping time drops from 40+ days to just 16 days.
- **Cost-Efficiency:** Lower transport costs make it an attractive option for businesses.
- **Strategic Importance:** Strengthens economic ties between India and Russia, particularly in energy.

Geopolitical Implications:

- The corridor may shift regional dynamics, offering India greater influence in the Pacific while balancing China's growing power. However, its route through the South China Sea could spark security concerns.



Strategic Economic Gains for India:

- **Energy Security:** India, the third-largest global consumer of crude oil, relies on imports for over 85% of its energy needs. Access to discounted Russian oil supports India's energy strategy amid rising global prices.
- **Geopolitical Benefits:** India's growing ties with Russia help balance Russia's increasing relationship with China. Russia remains a crucial partner in defense, especially for maintaining India's armed forces and nuclear capabilities.
- **Strategic Leverage:** The partnership enhances India's geopolitical influence, allowing greater cooperation on defense technology and energy security.

Impact on Trade beyond Oil:

- **Diversification of Trade:** The new route boosts trade not only in crude oil but also in coal, fertilizers, metals, and containerized cargo.
- **Increased Exports to Russia:** Indian exports like processed minerals, iron and steel, tea, and marine products are growing due to faster, more cost-effective shipping.
- **Long-Term Trade Commitments:** The new sea route encourages long-term trade agreements between India and Russia, benefiting both nations.

The Phewa Dialogue

Why in News:

Nepal and China recently launched the "Phewa Dialogue," a diplomatic initiative aimed at promoting regional prosperity, peace, and economic integration in South Asia. Named after Phewa Lake in Pokhara Valley, the dialogue symbolizes enduring cooperation,

drawing inspiration from the lake's ecological and cultural significance. The initiative seeks to enhance collaboration between the two countries and the broader South Asian region.

Significance of the Phewa Dialogue:

- **Regional Cooperation:** The primary goal of the Phewa Dialogue is to foster regional cooperation among South Asian nations. South Asia faces numerous shared challenges, including poverty, environmental issues, and security concerns. The dialogue offers a platform for collaborative solutions to these challenges, aiming to strengthen regional ties and promote peace and prosperity.
- **Economic Integration:** The dialogue also focuses on economic integration, addressing the trade barriers, infrastructure gaps, and political tensions that hinder growth. By improving economic cooperation, the Phewa Dialogue could unlock opportunities for increased trade, investment, and development in the region, benefiting all participating countries.
- **Addressing Key Issues:** The Phewa Dialogue serves as a forum for discussing critical regional issues, such as industrial changes, emerging technologies, and sustainable development. These discussions are vital as South Asia adapts to global changes and seeks solutions for long-term stability and modernization.
- **Track II Diplomacy:** A key feature of the dialogue is its use of Track II diplomacy, which involves non-governmental actors like academic institutions. Sichuan University (China) and Tribhuvan University (Nepal) are expected to play pivotal roles in facilitating discussions that will help shape policy and enhance bilateral cooperation.

Recent Diplomatic Developments between China and Nepal

- **Economic Ties:** China has become Nepal's largest Foreign Direct Investment (FDI) partner since 2014. Investments span various sectors, including hydropower, where China is involved in projects like the Budhi Gandaki Hydroelectric Project. Additionally, China has provided substantial financial aid for Nepal's infrastructure development.
- **Strategic Partnership:** In 2019, Nepal and China formalized their relationship as a "strategic partnership," marked by a visit from Chinese

President Xi Jinping. This partnership has led to increased cooperation in defense, security, and trade, with China supplying military aid to Nepal.



Impacts of the Phewa Dialogue on India:

- The dialogue may shift regional dynamics by strengthening China's influence in South Asia, potentially reducing India's traditional sway in Nepal. Nepal's increasing reliance on China for economic and strategic support may raise concerns for India.
- As China increases its investments in Nepal's infrastructure and energy sectors, India could face growing competition in trade and investment. Nepal's deepening economic ties with China may affect India's interests in the region.
- Strengthened defense and security ties between Nepal and China could raise security concerns for India, especially along their shared border, requiring India to reassess its strategic approach in the region.

India-Kuwait Relations

Why in News:

Prime Minister Narendra Modi's recent visit to Kuwait marked a transformative moment in India-Kuwait relations, as both countries elevated their ties to a "strategic" level. This visit, the first by an Indian Prime Minister in 43 years, reflects India's growing influence in the Gulf region amid shifting geopolitical dynamics. The visit underscores strengthened cooperation in trade, defence, and cultural exchange, laying a foundation for more extensive future collaboration.

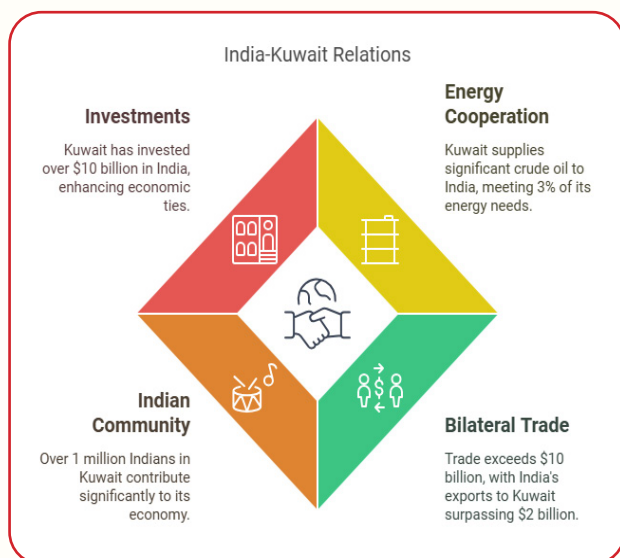
Historical Background of India-Kuwait

Relations:

- India and Kuwait share deep-rooted relations that date back to the early years following Kuwait's independence in 1961. India was one of the first countries to establish diplomatic ties with Kuwait.
- Historically, India has been a natural trading partner, with the Indian Rupee even serving as a legal tender in Kuwait until 1961. Today, Kuwait remains one of India's most important allies in the region.

Current Dynamics of the Relationship:

- Kuwait is India's sixth-largest crude oil supplier, meeting about 3% of India's energy needs. The bilateral trade between the two countries surpassed \$10 billion, with India's exports to Kuwait crossing \$2 billion for the first time.
- The Indian community in Kuwait, comprising more than a million people, is the largest expatriate group and plays a crucial role in Kuwait's economy. The Kuwait Investment Authority's investments in India have exceeded \$10 billion, reinforcing the economic ties between the two nations.



Significance of Modi's Visit:

- Prime Minister Modi's visit to Kuwait in 2024 was historic for several reasons. It was the first visit by an Indian Prime Minister since Indira Gandhi's visit in 1981.
- During the visit, Kuwait honored Modi with its highest civilian award, 'The Order of Mubarak Al-Kabeer,' recognizing his efforts in bolstering India-Kuwait relations.

- Modi's engagements included meetings with key Kuwaiti leadership, including Amir Sheikh Meshal Al-Ahmad Al-Jaber Al-Sabah and Crown Prince Sheikh Sabah Al-Khaled Al-Hamad Al-Mubarak Al-Sabah, marking a new chapter in diplomatic relations.

Strengthening Strategic Cooperation:

- A landmark outcome of the visit was the signing of a comprehensive defence agreement, which includes the exchange of personnel, joint military exercises, and collaboration in defence technology.
- The visit also saw the signing of MoUs in key sectors like sports, culture, and solar energy. Modi invited the Kuwaiti Investment Authority to explore opportunities in India's energy, pharma, infrastructure, and food sectors, further expanding the economic footprint of both nations.

Regional and Global Implications:

- Modi's visit also set the stage for stronger India-GCC relations, as India expressed interest in intensifying cooperation with the Gulf Cooperation Council (GCC), of which Kuwait is a prominent member.
- India and Kuwait also discussed shared goals for regional peace and stability, particularly in the volatile West Asia region. Both countries condemned terrorism and pledged to dismantle terror networks, ensuring a more secure and prosperous future.

US-China Science and Technology Cooperation Agreement

Why in News:

Recently, the United States and China renewed their Science and Technology Cooperation Agreement (STA) for an additional five years. The agreement was effective from August 27, 2024. This renewal signifies ongoing commitment to science and technology collaboration between the two countries despite tensions in other areas such as trade and technology.

- The renewal also addresses emerging concerns about intellectual property rights and national security. The STA, first signed in 1979, is a bilateral agreement aimed at fostering cooperation in various scientific and technological fields between

the U.S. and China.

- Initially focused on agricultural research, the scope of the agreement has expanded to include multiple areas of research, promoting collaboration between researchers, universities, and institutions from both countries.

Key Changes in this new Agreement:

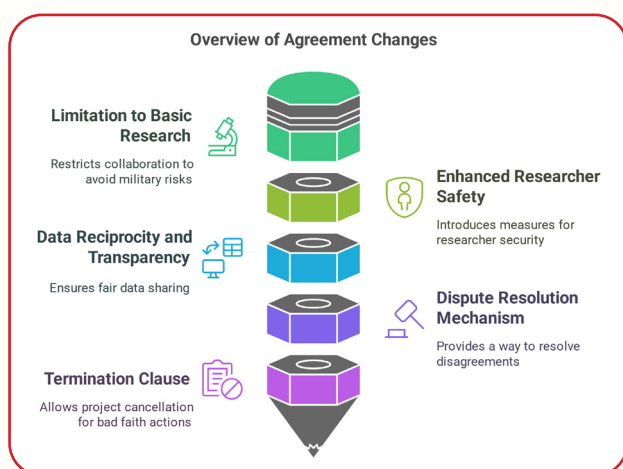
The amended agreement includes several key changes:

- Limitation to basic research:** The collaboration will now be restricted to basic research, excluding critical and emerging technologies to avoid the risk of sensitive technologies benefiting military or strategic interests.
- Enhanced provisions for researcher safety:** Measures have been introduced to ensure the safety and security of researchers engaged in cooperative projects.
- Data reciprocity and transparency:** New provisions have been added to ensure fair and transparent sharing of data between the two countries.
- Dispute resolution mechanism:** A mechanism for resolving disagreements or violations of the agreement has been included.
- Termination clause:** The agreement now includes provisions to cancel projects if one party acts in "bad faith."

- For China, the agreement has provided access to U.S. technology, significantly contributing to its rise as a global science and technology leader.
- It has also fostered educational exchanges and joint research ventures, which have expanded the global reach of both nations' scientific communities.

Implications for India:

- Increased Competition in R&D:**
 - China's growing strength in science and technology makes it a bigger competitor for India.
 - India will need to invest more in research and development to stay competitive and keep up with technological progress.
- Geopolitical Leverage:**
 - India's relationships with the U.S. and other countries may change as the U.S. deals with its ties to China.
 - This could affect India's role in global politics and its partnerships with other countries.
- Opportunity for Strategic Collaboration:**
 - India's growing research and strong agreements with other countries can make it a good partner for the U.S. and other nations that want to work with someone other than China.
 - This could help India improve its scientific reputation and provide access to new technologies and research opportunities.



How has the agreement benefited both the U.S. and China?

- The STA has been mutually beneficial, facilitating U.S. access to China's rapidly growing research ecosystem, fostering joint research in fields such as agriculture, health, and environmental science.

World's Largest Dam over Brahmaputra River

Why in News:

Recently, China has approved the construction of the world's largest hydropower dam on the Brahmaputra River, known as the Yarlung Zangbo River in Tibet. The project, with a total investment of USD 137 billion, is part of China's 14th Five-Year Plan (2021-2025) and is located near the Indian border.

Capacity and features of dam:

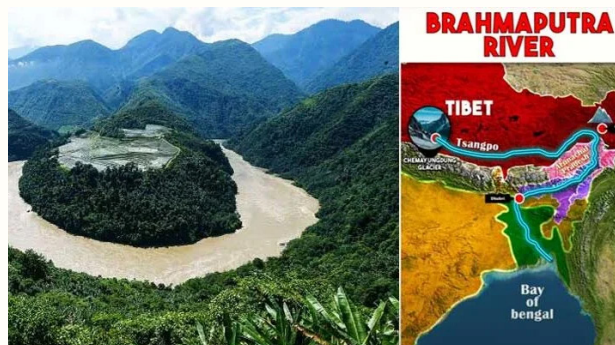
- The dam is expected to generate more than 300 billion kWh of electricity annually, which is enough to meet the needs of over 300 million people.
- The hydropower project is part of China's strategy for carbon peaking and carbon neutrality. It is considered a "green project" that promotes low-carbon development. In addition to hydropower,

it will encourage the development of solar and wind energy resources in the surrounding areas, contributing to clean energy production.

Key Concern for India and Bangladesh:

- The construction of the dam has sparked concerns in India and Bangladesh due to its location on the Brahmaputra River, which flows through both countries. There are fears that China could manipulate the water flow, potentially causing floods or water shortages, especially during periods of conflict. The size and scale of the dam could also increase China's control over the water resources.
- The location of the dam is in a seismically active region, which raises concerns about the safety of the project. However, China has stated that the project prioritizes ecological protection and has conducted extensive geological surveys to ensure its safety, focusing on minimizing the impact of earthquakes and environmental damage.

- The project is expected to contribute significantly to the economy, generating income for the Tibet Autonomous Region, estimated at 20 billion yuan (USD 3 billion) annually. It will also boost the growth of industries such as engineering, logistics, trade services, and create new job opportunities in the region.
- Once completed, the dam will stimulate the development of electricity, water conservancy, and transportation infrastructure in Tibet. It will also strengthen economic synergy between Tibet and other regions of China, enhancing the development of Tibet's economy.
- The project is seen as crucial for China's national security, including water resources management. It is also viewed as a way to improve relations with South Asian countries, especially in terms of energy cooperation. The hydropower station will also play a strategic role in supporting China's infrastructure development in Tibet.



About Brahmaputra River Overview:

- The Brahmaputra River, originating from the Kailash ranges, flows through Tibet, India, and Bangladesh. It plays a vital role in shaping the landscapes and livelihoods of millions across its path.

Basin and Catchment Area

- **Basin:** Spread across Arunachal Pradesh, Assam, West Bengal, Meghalaya, Nagaland, and Sikkim.
- **Catchment Area:** Tibet (2,93,000 sq. km), India & Bhutan (2,40,000 sq. km), Bangladesh (47,000 sq. km), total basin area 5,80,000 sq. km.
- **Delta:** Forms the world's largest and fastest-growing delta.

Impact of the dam:



Environment

India's Forest and Tree Cover Growth: A Model of Environmental Stewardship

Introduction

Forests are among Earth's most vital ecosystems, functioning as the planet's lungs by absorbing carbon dioxide and releasing oxygen. They play a critical role in combating climate change, sustaining biodiversity, and maintaining the balance of natural cycles. Forests provide clean air and water, prevent soil erosion, and offer a sanctuary for countless species. Despite their importance, forests face relentless pressure due to urbanization, industrialization, and population growth.

❖ In this challenging global scenario, India has emerged as a beacon of hope by adopting a balanced approach to economic development and environmental preservation. The India State of Forest Report (ISFR) 2023 is a testament to this commitment, showcasing the nation's successful efforts in expanding forest and tree cover while reducing environmental risks such as forest fires.

Forest Cover in India: A Decade of Progress

❖ The India State of Forest Report (ISFR) 2023, the 18th edition of the biennial report published by the Forest Survey of India (FSI), highlights significant achievements in forest and tree cover. Using advanced satellite imagery and field data, this report presents a comprehensive overview of the state of India's forests and their contribution to environmental health.

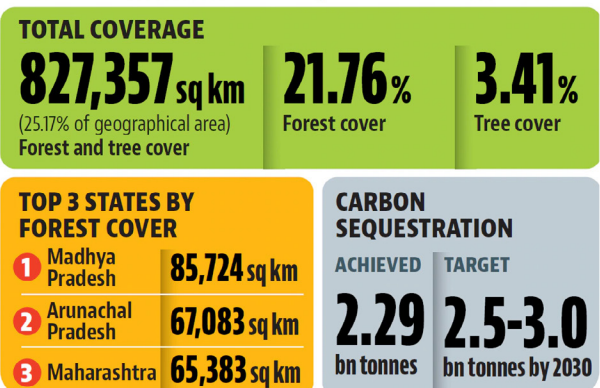
Key Highlights of ISFR 2023:

- ❖ **Forest and Tree Cover Expansion:** India's total green cover now spans 827,357 square kilometers, comprising 25.17% of the country's total geographical area. Forest cover accounts for 715,343 square kilometers (21.76%). Tree cover constitutes 112,014 square kilometers (3.41%).
- ❖ **Positive Growth in Forest Cover:** Over the past decade, India's forest cover has grown significantly, increasing from 698,712 square kilometers in 2013

to 715,343 square kilometers in 2023. This increase of 16,631 square kilometers demonstrates the success of afforestation programs, conservation policies, and community-driven initiatives.

- ❖ **Decline in Forest Fire Incidents:** Proactive forest fire management measures have led to a reduction in fire hotspots, which decreased from 223,333 in 2021-22 to 203,544 in 2023-24.
- ❖ **Achievement in Carbon Sequestration:** India has achieved a carbon sink of 30.43 billion tonnes of CO₂ equivalent, adding an impressive 2.29 billion tonnes since 2005. This marks significant progress toward India's Nationally Determined Contribution (NDC) target of creating an additional carbon sink of 2.5–3.0 billion tonnes by 2030. These achievements highlight India's dedication to balancing development with environmental conservation and its role as a global leader in sustainable forestry practices.

India's forest report 2023:



Government Schemes and Initiatives Driving Forest Conservation

India's success story in forest conservation is

underpinned by well-structured policies and groundbreaking initiatives that address ecological restoration, biodiversity conservation, and climate resilience.

- ❖ **National Mission for a Green India (GIM):** Launched in 2014, this mission is part of the National Action Plan on Climate Change (NAPCC). It emphasizes ecosystem restoration through afforestation and reforestation, with active participation from local communities via Joint Forest Management Committees (JFMCs). Funding: ₹944.48 crore has been released to 17 states and one union territory to support tree plantation and ecological restoration efforts.
- ❖ **Nagar Van Yojana (NVY):** Introduced in 2020, this initiative focuses on creating urban forests and green spaces in urban and peri-urban areas to improve air quality and mitigate the urban heat island effect.
 - » **Progress:** 546 projects have been approved across 31 states and UTs with an allocation of ₹431.77 crore.
- ❖ **School Nursery Yojana (SNY):** Designed to instill environmental awareness among students, this program encourages schools to create nurseries and promote tree planting.
 - » **Funding:** ₹4.80 crore has been allocated to 743 projects across 19 states and UTs.
- ❖ **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI):** Aimed at restoring mangrove ecosystems along India's vast coastlines, this program plays a critical role in enhancing biodiversity and providing climate resilience.
 - » **Funding:** ₹17.96 crore has been allocated to coastal states like Odisha, Gujarat, and Kerala.
- ❖ **Ek Ped Maa Ke Naam Campaign:** Launched in 2024 by Prime Minister Shri Narendra Modi, this initiative combines emotional resonance with ecological action, urging citizens to plant a tree in honor of their mothers.
- ❖ **Compensatory Afforestation Fund Management and Planning Authority (CAMPA):** This program addresses forest loss due to developmental activities by ensuring compensatory afforestation. It adheres to the Van Sanrakshan Evam Samvardhan Adhiniyam, 1980, which mandates ecological compensation.
- ❖ **National Action Plan on Forest Fire (2018):** This plan builds resilience against forest fires by enhancing community capacity, deploying

advanced monitoring systems, and using predictive tools for early warnings.

- ❖ **Joint Forest Management Committees (JFMCs):** A cornerstone of India's forest management strategy, JFMCs empower local communities to actively participate in conservation and sustainable use of forest resources.

Role of Technology in Forest Conservation

- ❖ Technology has revolutionized forest conservation in India, enabling precise monitoring, early intervention, and better resource management. Key advancements include:
 - » **Satellite Monitoring:** Real-time data on forest cover changes facilitates evidence-based decision-making.
 - » **Upgraded Forest Fire Alert System:** This system provides timely alerts, significantly reducing the damage caused by wildfires.
 - » **Digitization of Forest Boundaries:** Mapping and digitizing forest areas help resolve boundary disputes and prevent encroachments.
 - » **National Forest Inventory:** A scientific assessment providing critical data on forest growth, biodiversity, and carbon stock.

Legal Framework Supporting Conservation

- ❖ **Indian Forest Act, 1927:** Focuses on forest regulation and resource use.
- ❖ **Wildlife (Protection) Act, 1972:** Protects wildlife and habitats by establishing protected areas like sanctuaries and national parks.
- ❖ **Van Sanrakshan Evam Samvardhan Adhiniyam, 1980:** Balances ecological conservation with developmental needs.
- ❖ **State-Specific Forest and Tree Preservation Acts:** Ensure localized conservation strategies.

Inspiring Community Contributions:

- ❖ The legacy of Padma Shri Tulsi Gowda, often called the "Mother of Trees," exemplifies the transformative power of individual and collective action. Over six decades, she planted and nurtured lakhs of trees in Karnataka, converting barren land into lush green cover. Her dedication underscores the crucial role of individuals in complementing government-led initiatives.
- ❖ Similarly, programs like Joint Forest Management and awareness campaigns such as Van Mahotsav and Wildlife Week have mobilized local communities, making them active stakeholders in

forest conservation.

Challenges and Future Directions

- ❖ Despite remarkable progress, challenges such as deforestation due to urbanization, the impacts of climate change, and funding constraints remain.

Future Priorities:

- ❖ Strengthening policies and enforcement mechanisms.
- ❖ Expanding public awareness and engagement.
- ❖ Enhancing technological capabilities, such as using artificial intelligence for predictive forest management.
- ❖ Balancing developmental activities with ecological preservation.

Conclusion:

- ❖ The India State of Forest Report (ISFR) 2023 is a

powerful reminder of what can be achieved with visionary policies, innovative technology, and active community participation. India's growth in forest and tree cover, coupled with reduced fire incidents and significant carbon sequestration, sets a global benchmark for sustainable environmental management.

- ❖ As India moves closer to its 2030 carbon sink targets, the continued collaboration of policymakers, communities, and individuals will be vital in building a greener, healthier future. By fostering a culture of conservation and sustainability, India is not only protecting its natural heritage but also setting an example for the world to emulate.

Short Issues

Silica Mining and Health Risks: NGT Directs CPCB to Create Nationwide Guidelines

Why in News:

Silica mining, critical for industries like glass manufacturing and construction, poses significant health risks due to the release of silica dust. Prolonged exposure to this dust can lead to silicosis, a severe lung disease. To address these concerns, the National Green Tribunal (NGT) has directed the Central Pollution Control Board (CPCB) to create nationwide guidelines for silica sand mining and washing plants to mitigate health risks and environmental pollution.

Key Directives from NGT to CPCB

- **Development of Guidelines:** CPCB is tasked with creating operational standards for silica mining and washing plants to reduce health risks and pollution. The guidelines are expected within three months.
- **Health and Safety Measures:** The NGT emphasized regular health checks for workers, including monitoring for silicosis, and recommended the use of protective gear and improved ventilation.
- **Monitoring and Enforcement:** The NGT urged regulatory bodies to conduct regular inspections

and enforce compliance with the new guidelines.

- **Healthcare Infrastructure in Uttar Pradesh:** The UP Pollution Control Board is instructed to work with health authorities to establish healthcare services in silica mining areas for early detection and treatment of silicosis.
- **Penalties for Non-Compliance:** The NGT imposed penalties on companies involved in illegal mining practices, aiming to enforce stricter accountability.

What is Silica Mining?

- Silica mining involves extracting silica sand, mainly composed of quartz, from open-pit mines. This sand is then washed to remove impurities. Silica sand is essential for various industries but poses health risks when workers and nearby communities are exposed to fine silica dust.

Health Risks of Silica Dust

- Inhalation of silica dust can lead to silicosis, a chronic lung condition that causes breathing difficulties and lung scarring.
- Other respiratory diseases, including COPD and tuberculosis, are also linked to long-term exposure. Both workers in the mining industry and residents near mining sites are at risk due to dust contamination in the air and water.

Silicosis Prevention for Miners

Miners face serious risks from silica dust during activities like drilling and blasting. Inhaling this dust can cause silicosis, a deadly lung disease. Protecting miners with effective prevention measures is essential to ensure their safety and health.

1. Ventilation Systems

- Install and maintain effective ventilation systems to reduce dust levels in underground mines

Dust Suppression Techniques

- Use dust suppression techniques such as wet drilling, water sprays, and dust collectors on mining equipment

3. Personal Protective Equipment (PPE)

- Ensure miners wear appropriate PPE, including respirators, to protect against inhaling silica dust



4. Health Surveillance

- Implement regular health surveillance programs, including chest X-rays and lung function tests



Legal Framework for Silica Mining:

- **The Mines and Minerals (Development and Regulation) Act, 1957:** Regulates the mining sector, including silica extraction.
- **The Factories Act, 1948:** Ensures worker safety in mining operations, mandating ventilation and protective gear.
- **The Environment Protection Act, 1986:** Sets environmental standards for mining activities.
- **The Occupational Safety, Health, and Working Conditions Code, 2020:** Ensures health and safety for workers in hazardous occupations.
- **The Air (Prevention and Control of Pollution) Act, 1981:** Regulates air quality and silica dust emissions.

Land Degradation: A Growing Threat to Global Sustainability

Why in News:

Land degradation is increasingly compromising the Earth's capacity to support human life, posing a serious challenge for future generations. A recent United Nations (UN) report, *Stepping Back from the Precipice: Transforming Land Management to Stay Within Planetary Boundaries*, provides alarming insights into the extent of land degradation.

Key Findings of the Report

- **Annual Degradation:** A million square kilometers of land are being degraded each year.
- **Total Affected Area:** Approximately 15 million square kilometers have already been impacted by land degradation, which is more than the entire landmass of Antarctica.

What is Land Degradation?

- Land degradation refers to the decline in the biological or economic productivity and complexity of land. It affects various land types, including:
 - » Rainfed and Irrigated Croplands
 - » Rangelands and Pastures
 - » Forests and Woodlands

Consequences of Land Degradation:

- **Food Security:** Reduces the quality and quantity of food production, increasing the risk of malnutrition.
- **Health Risks:** Leads to the spread of water- and food-borne diseases due to inadequate sanitation and water scarcity.
- **Respiratory Issues:** Dust storms and soil erosion contribute to respiratory diseases.
- **Ecosystem Damage:** Eroded soil, along with chemicals like fertilizers and pesticides, washes into water bodies, harming aquatic life and communities dependent on these water sources.

Contribution to Climate Change:

- **Carbon Emissions:** Degraded soils release carbon dioxide and nitrous oxide into the atmosphere.
- **Reduced Carbon Sink Capacity:** The ability of land ecosystems, such as trees and soil, to absorb human-caused carbon dioxide has decreased by 20% in the last decade.

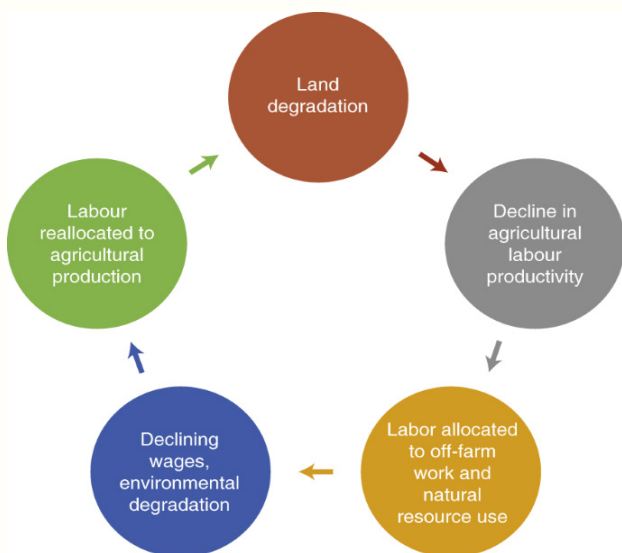
Causes of Land Degradation:

- **Unsustainable Agriculture:** Overuse of chemical fertilizers, pesticides, and poor irrigation practices leads to deforestation, soil erosion, and pollution.
- **Climate Change:** Increased frequency of extreme weather events, such as heavy rainfall and heat stress, worsens land degradation.
- **Urbanization:** Rapid urban expansion contributes to habitat destruction and pollution, accelerating land degradation.

Geographical Hotspots:

- **Dryland Areas:** South Asia, northern China, the High Plains of the U.S., and the Mediterranean are identified as hotspots.

- **Low-Income Countries:** These areas are disproportionately affected due to lower resilience to withstand the impacts of land degradation.



Conclusion:

- The UN’s report emphasizes the urgent need to address land degradation through transformative land management practices. Key strategies include:
 - » **Sustainable Agricultural Practices:** Reducing chemical inputs, improving irrigation methods, and preventing deforestation.
 - » **Climate Change Mitigation:** Enhancing resilience to extreme weather events.
 - » **Protection of Vulnerable Regions:** Focusing on areas in low-income countries that are most at risk.

Ratapani Wildlife Sanctuary Declared a Tiger Reserve

Why in News:

The Ratapani Wildlife Sanctuary in Madhya Pradesh has officially been declared a tiger reserve, following in-principle approval from the Ministry of Environment, Forest, and Climate Change (MoEFCC) through the National Tiger Conservation Authority (NTCA).

About Ratapani Tiger Reserve:

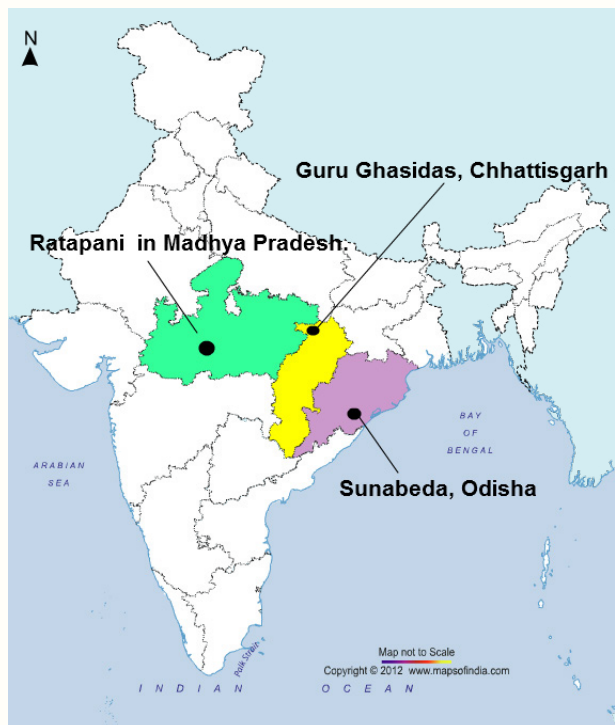
- Located in the Raisen district and situated in the Vindhya hills, the Ratapani Tiger Reserve encompasses a total area of 1,271.4 square

kilometers. This includes:

- » Core Area: 763.8 square kilometers
- » Buffer Area: 507.6 square kilometers
- The reserve is home to a variety of flora and fauna, with teak forests being a prominent feature.
- Additionally, it holds historical and cultural significance as it includes the Bhimbetka Rock Shelters, a UNESCO World Heritage Site, alongside several other historical and religious destinations.
- The reserve is located less than 50 kilometers from Bhopal, making it accessible and an attractive location for ecotourism.

Legislative Framework and Rights of Local Communities:

- The Ratapani Wildlife Sanctuary was officially declared a tiger reserve under Section 38V of the Wildlife (Protection) Act, 1972. This law identifies important tiger habitats and separates them into core and buffer zones to focus on conservation efforts.
- As part of this decision, nine villages, covering an area of 26.947 square kilometers, were added to the buffer zone. Importantly, the rights of the local villagers living in the sanctuary remain protected, ensuring a balance between wildlife conservation and the well-being of the community.



Implications for Conservation and Development:

- **Enhanced Conservation Efforts:** The NTCA's funding will facilitate better management and conservation of wildlife in the reserve.
- **Promotion of Ecotourism:** The new tiger reserve status is expected to attract tourists, creating economic opportunities and boosting employment for local communities.
- **Eco-Development Programs:** Initiatives aimed at improving livelihoods and fostering sustainable development in the region are set to receive additional support.

Madhya Pradesh: A Leader in Tiger Conservation

- Ratapani's designation as a tiger reserve makes it the eighth tiger reserve in Madhya Pradesh, a state already recognized for its leadership in tiger conservation.
- This development follows the approval of Madhav National Park to also become a tiger reserve, reflecting the state's commitment to expanding its tiger habitats and ensuring ecological balance.

Conclusion:

The declaration of Ratapani Wildlife Sanctuary as a tiger reserve is a significant step toward strengthening wildlife conservation efforts in India. Beyond preserving biodiversity, it integrates local community interests, economic development, and cultural heritage, setting an example of sustainable conservation practices.

ICJ Begins Hearing Landmark Climate Change Case

Why in News:

The International Court of Justice (ICJ) has started hearings on a crucial climate change case, initiated by Vanuatu, a small island nation facing existential threats from rising sea levels. This case, which seeks an advisory opinion on countries' legal obligations to protect the climate and the consequences for those responsible for climate harm, could significantly impact global climate action.

About the Case:

- **Vanuatu's Proposal:** The case was proposed through a UN General Assembly (UNGA) resolution, co-sponsored by 132 countries. Vanuatu, alongside other small island states, is directly threatened

by climate change and seeks to address the lack of legal clarity regarding countries' obligations to mitigate climate harm.

- **Key Questions raised:**
 - » What are the obligations of countries under international law to protect the climate system?
 - » What are the legal consequences for countries causing harm to the climate system?
- **Relevant Legal Frameworks:** This case draws on multiple international legal frameworks, including the UN Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, as well as other legal texts such as the UN Convention on the Law of the Sea and the Universal Declaration of Human Rights. It underscores that climate change is both an environmental and human rights issue.



Significance of the Case:

- While the ICJ's opinion is advisory, its impact could be far-reaching:
 - » **Reaffirming Climate Obligations:** The case could strengthen legal obligations for climate protection, particularly by holding developed nations more accountable for their historical emissions and failure to meet climate finance targets.
 - » **Establishing Legal Consequences for Climate Harm:** The ICJ may define legal consequences for countries causing climate harm, potentially paving the way for compensation mechanisms for vulnerable nations like small islands.
 - » **Influencing Global Climate Negotiations:** The advisory opinion could influence COP negotiations, urging developed countries to meet their Paris Agreement commitments and reinforcing the call for climate finance.
 - » **Precedent for Climate Litigation:** The ICJ's ruling could set a precedent for future climate lawsuits, providing legal clarity and

encouraging further climate-related litigation worldwide.

About ICJ's Advisory Opinion:

- The ICJ's authority to issue advisory opinions is derived from its Statute and the UN Charter:
 - » **Article 65 of the ICJ Statute:** Grants the ICJ the power to give advisory opinions at the request of authorized bodies or agencies under the UN Charter.
 - » **Article 96 of the UN Charter:** Specifies the process for requesting advisory opinions, allowing the General Assembly and Security Council to request opinions, and authorizing other UN organs and specialized agencies to do so with General Assembly approval.

Agroforestry and its Threat to Endemic Frogs: A Study on the Western Ghats

Why in News:

A new study by the Nature Conservation Foundation (NCF-India) and the Bombay Environmental Action Group (BEAG) found that agroforestry practices can harm certain species of endemic frogs, while some frogs are less affected by these changes in their habitats.

Key Findings:

- **Decline in Amphibian Diversity in Modified Habitats:** The study discovered that the diversity of amphibians, including frogs, was lowest in paddy fields. Frog populations were also smaller in orchards. Agricultural areas like orchards and paddy fields, with monoculture cropping, altered water sources, and less natural vegetation, were less suitable for frogs than undisturbed plateaus.
- **Impact on Endemic Species:** Endemic species such as the CEPF burrowing frog (*Minervarya cepfi*) and the Goan fejevarya (*Minervarya gomantaki*) were found to be significantly less abundant in modified habitats. Agroforestry practices, especially converting plateaus into orchards, destroy important habitats like rock pools that protect tadpoles and eggs during dry spells in the monsoon season.
- **Species Adaptation to Modified Habitats:** More generalist species like *Minervarya syhadrensis*,

which is common across South Asia, were found in higher numbers in paddy fields. However, this does not mean they are adapting to these areas. It likely reflects habitat loss in their natural habitats, forcing them to spread into modified areas.

- **Landscape Transformation:** Lateritic plateaus, formed by volcanic activity, are being converted into agricultural lands, especially mango and cashew orchards. This reduces the availability of vital water bodies for amphibians, threatening species that rely on clean water sources to survive.
- **Importance of Water Resources:** Water resources are crucial for amphibians' breeding and survival. When habitats are converted, it disrupts water systems and causes habitat degradation. Amphibians' presence is often a sign of the health of aquatic ecosystems, which are important for both wildlife and local communities.



Recommendations for Mitigating Habitat Loss:

- **Frog-Friendly Agroforestry Practices:** Agroforestry practices, especially in orchards, should be modified to be more frog-friendly. Retaining natural water bodies and adding artificial water sources in agricultural areas can help reduce habitat loss.
- **Sensitization of Landowners:** Awareness campaigns and incentives should encourage landowners to adopt sustainable agricultural practices that protect amphibian populations and biodiversity.
- **Conservation of Freshwater Habitats:** The study emphasizes the need to conserve and restore freshwater habitats to ensure the survival of amphibians and maintain ecological health.

Importance of Conservation Efforts:

- The study highlights the urgent need for conservation actions to address the transformation of the Western Ghats' lateritic plateaus. The Western Ghats are a biodiversity hotspot and provide ecological services that support local communities. Climate change also adds pressure on

these ecosystems, making targeted conservation efforts even more important to protect them.

Indian Star Tortoise

Why in News:

The Indian star tortoise is one of the most commonly smuggled tortoises in the world, and its conservation is a big worry. Scientists have found that there are two different genetic groups of these tortoises, one from northern India and another from the south. This means that simply releasing tortoises that were rescued from illegal trade into nearby forests isn't a good solution. It could cause problems, like mixing the two groups, which might harm their survival and future breeding.

Conservation Strategies that should be adopted:

- **Genetic Conservation and Smart Releases:** Release confiscated tortoises only in areas matching their genetic origin to preserve diversity and maintain healthy populations.
- **Habitat Protection:** Secure and restore natural habitats, improve habitat corridors, and promote sustainable land-use practices.
- **Combating Wildlife Trafficking:** Strengthen enforcement, improve border controls, and raise public awareness to reduce demand for tortoises as pets.
- **Captive Breeding and Rehabilitation:** Carefully manage breeding to avoid deformities and ensure captive tortoises are rehabilitated before release.
- **Research and Monitoring:** Conduct ongoing research on the tortoises' genetics, behavior, and ecology to inform conservation strategies and monitor wild populations.

About Indian Star Tortoise:

- The Indian star tortoise (*Geochelone elegans*) is a distinctive species found in the dry areas and scrub forests of India, Pakistan, and Sri Lanka. Recognized by its star-patterned shell, this species thrives in habitats that experience monsoon seasons and is well-adapted to semi-arid conditions.

Conservation Status

- IUCN Status: Vulnerable
- CITES: Appendix I
- Wildlife Protection Act 1972: Schedule IV

Habitat

- Indian star tortoises inhabit a wide range of environments, including semi-desert grasslands,

moist deciduous forests, sand dunes, scrub forests, and even human-altered habitats. They are adaptable to various conditions but remain vulnerable due to habitat loss and degradation.



Physical Characteristics

- Medium-sized head
- Hooked beak
- Short, thick legs with tubercles of varying sizes and shapes
- Males have long tails, while females have short, stubby tails

Behavior and Temperament

- **Diurnal:** Active mainly in the morning and late afternoon
- **Stress-sensitive:** They do not tolerate frequent handling and may become stressed or ill if handled too often.

Diet

- **Herbivorous:** Their diet consists primarily of fresh leafy greens and grasses, which are crucial for their health and well-being.

Cyclone Chido

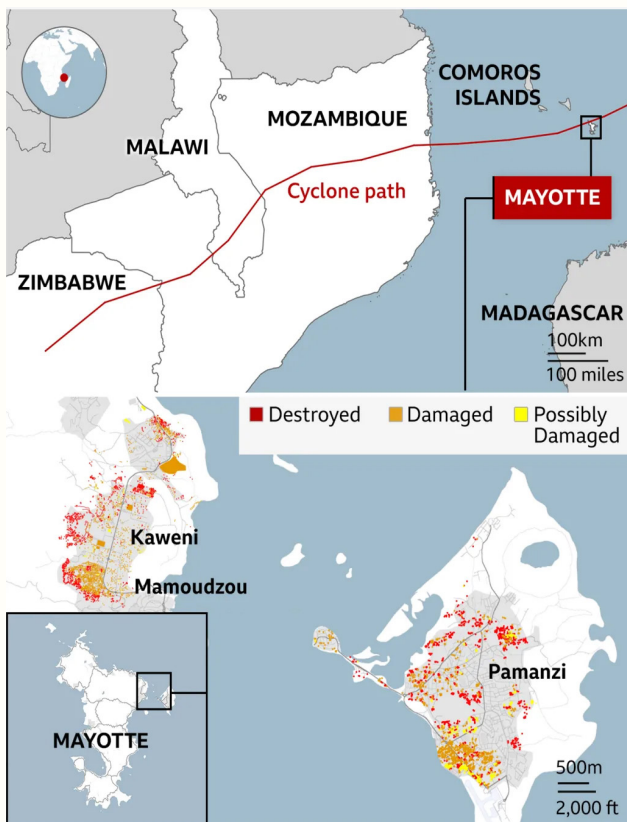
Why in News:

Cyclone Chido, which developed from a tropical depression and intensified into a powerful cyclone with winds exceeding 220 km/h (137 mph). The storm left extensive damage in Mayotte, a poor region of France, and caused devastation in neighboring areas like Madagascar, Mozambique, and Comoros.

- Scientists warn that cyclones like Chido are becoming more intense due to climate change, and better monitoring and infrastructure are needed to reduce future damage.

How climate change fuels cyclone growth:

- **Rising Ocean Temperatures:**
 - » Climate change leads to higher sea surface temperatures.
 - » Warmer oceans provide more energy for cyclones, making them more intense.
 - » Cyclones form over warm waters (above 26.5°C or 79.7°F), and as temperatures rise, they become stronger and more destructive.



- **More Moisture in the Atmosphere:**
 - » Warmer air holds more moisture.
 - » Rising moisture increases heat release when the moisture condenses, fueling the cyclone's growth.
 - » This can lead to heavier rainfall and more intense flooding during storms.
- **Longer Storm Seasons:**
 - » Warmer oceans extend the cyclone season.
 - » Cyclones can develop and last longer, increasing the frequency and duration of extreme weather events.
- **Stronger Winds:**
 - » Higher ocean temperatures lead to stronger winds.

- » Stronger winds are a key feature of intense cyclones and cause greater damage to infrastructure, trees, and power lines.

Conditions required for Tropical Cyclones:

- Warm sea surface temperature above 27°C.
- Continuous supply of warm, moist air releasing latent heat.
- Presence of strong Coriolis force to create a cyclonic vortex.
- Pre-existing low pressure area & low level cyclonic circulation.

Regional Names for Tropical Cyclones:

- **Indian Ocean:** Cyclones
- **Atlantic:** Hurricanes
- **Western Pacific and South China Sea:** Typhoons
- **Western Australia:** Willy-willies

How Cyclones are Named and Guidelines?

- In 2000, WMO/ESCAP (World Meteorological Organisation/United Nations Economic and Social Commission for Asia and the Pacific) decided to name cyclones in the Indian Ocean region. Initially involving 8 countries, it expanded in 2018 to include 5 more. Each country suggested 13 names, and a list of 169 names was finalized by IMD in 2020.

Guidelines for naming Cyclones:

- Names should be neutral regarding politics, religion, culture, and gender.
- They should not offend any group or be cruel in nature.
- Must be short, easy to pronounce, and under eight letters.
- Once used, a name cannot be reused for future cyclones.

Coastal Hardening

Why in News:

A recent study published in Nature has revealed a concerning trend—about 33% of the world's sandy beaches have undergone coastal hardening.

Areas Most Affected:

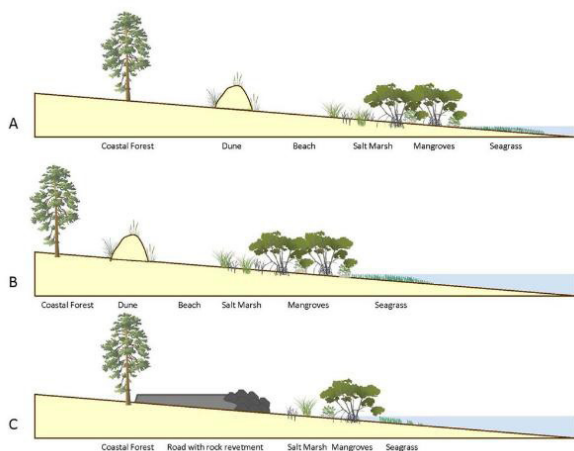
- The study highlights that the Bay of Bengal leads the world in coastal hardening, with a staggering 84% of its beaches hardened. Following closely behind is western and central Europe, which has seen 68% of its sandy beaches hardened, while the

Mediterranean region follows at 65%.

- Western North America and East Asia are also affected, with 61% and 50% of their beaches hardened, respectively.
- The findings point to significant geographic variation, with coastal regions in low and middle-income countries potentially facing even higher levels of beach degradation than previously understood.

About Coastal Hardening:

- Coastal hardening refers to the construction of rigid, semi-permeable human-made structures that alter the natural landscape and may obstruct the natural processes of shoreline retreat and landward movement of sandy beaches.
- This phenomenon is increasingly affecting beaches worldwide, with significant implications for coastal ecosystems.
- Coastal hardening involves the construction of various infrastructure projects that are designed to protect coastal areas from erosion, flooding, and other natural threats. These structures include seawalls, harbors, roads, highways, buildings, railway embankments, and other urban developments.
- While these constructions may offer immediate protection, they can have long-term environmental consequences, including disrupting natural processes and altering ecosystems.



Impacts of Coastal Hardening:

- **Disruption of Natural Processes:** One of the primary impacts of coastal hardening is the disruption of the natural movement of sand. Sandy beaches are dynamic, with sand constantly shifting due to the effects of wind, waves, and tides. When

rigid structures are introduced, they prevent the sand from moving, leading to increased erosion in other areas that may not be protected.

- **Loss of Habitats:** Coastal ecosystems, such as beaches, dunes, and wetlands, are vital habitats for many species of wildlife. Coastal hardening can destroy or degrade these environments, reducing biodiversity and affecting the animals and plants that rely on these areas for survival.
- **Long-Term Sustainability Issues:** As sea levels rise due to climate change, coastal hardening can "lock in" existing coastal conditions, making it more difficult to adapt to future changes. These structures can restrict the natural movement of the shoreline, leaving little room for beaches to migrate landward in response to rising seas. This can exacerbate the vulnerability of coastal areas to flooding and erosion.

Santa Ana wind

Why in News:

A wildfire, the Franklin Fire in Malibu, California, burnt over 4,000 acres of land and affecting about 22,000 people. The fire is expected to take several days to contain. Experts attribute its severity to the "Santa Ana" winds and climate change.

What are the 'Santa Ana' Winds?

- The Santa Ana winds are strong, dry downslope winds originating from cool, high-pressure air masses in the Great Basin, affecting coastal Southern California and northern Baja California. Santa Ana winds occur when high pressure builds over the Great Basin, creating a pressure difference with California's coast.
- This triggers strong winds from the inland deserts toward the Pacific Ocean. As the winds descend, they compress, heat up, and reduce humidity, making vegetation highly flammable. These winds typically occur from October to January. It is a local wind in the North America continent.

What is the Role of Climate Change?

- While Santa Ana-driven wildfires are natural, experts note that California's wildfire season has lengthened in recent years. A 2021 study showed that the state's burn season has shifted from August to July. Additionally, wildfires have grown more intense.

- A 2023 study found that the 10 largest wildfires in California's history occurred in the last 20 years, with five in 2020 alone. Climate change has caused warmer springs and summers, earlier snowmelt, and longer dry seasons, making vegetation more vulnerable to fires. With continued greenhouse gas emissions, the situation is expected to worsen, leading to more extreme climate impacts.



Other local winds from other parts of the world:

- **Mistral:** The Mistral is a cold, dry wind that blows from the north or northwest into the Mediterranean, especially in winter, significantly lowering temperatures. It is common in the Rhône Valley of southern France.
- **Foehn (Föhn):** The Foehn is a warm, dry wind descending from the Alps, particularly in Switzerland, Germany, Austria, and northern Italy. It causes sudden increases in temperature and dryness, often melting snow.
- **Sirocco:** The Sirocco is a hot, dry wind that originates from the Sahara Desert in North Africa, blowing across the Mediterranean. It is known for carrying sand and dust, which significantly reduces visibility and raises temperatures.
- **Bora:** The Bora is a cold, dry wind blowing from the northeast, particularly in the Adriatic Sea region, including Croatia and Italy. It is strong and gusty, often causing sharp temperature drops, especially in winter.
- **Harmattan:** The Harmattan is a dry, dusty trade wind from the Sahara, affecting West Africa, particularly the Sahel region and parts of Ghana, Nigeria and Senegal. It occurs mainly in winter and reduces visibility due to fine dust particles.

Arctic Report Card

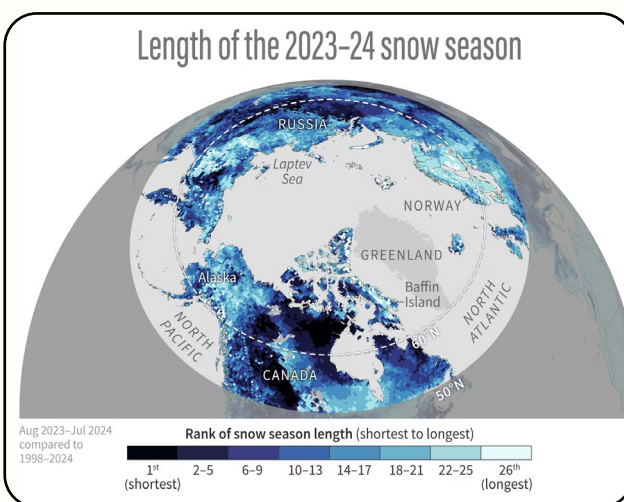
Why in News:

The National Oceanic and Atmospheric Administration (NOAA) has issued a stark warning in its latest "Arctic Report Card," highlighting a troubling shift in the Arctic tundra's role in climate dynamics. Once a significant carbon sink, the tundra is now contributing to global warming. As the region warms, permafrost thaws, releasing large amounts of CO₂ and methane—powerful greenhouse gases—into the atmosphere, amplifying climate change.

- This change not only accelerates Arctic warming but also has global consequences by trapping more heat and intensifying rising temperatures.

Key Factors Driving the Shift:

- **Rising Temperatures:** The Arctic is warming four times faster than the global average. This rapid warming causes permafrost to thaw, releasing carbon dioxide and methane as microorganisms break down organic matter that has been trapped for thousands of years.
- **Increased Wildfires:** Wildfires in the Arctic are becoming more frequent and intense. These fires add more carbon to the atmosphere by burning vegetation and further accelerate permafrost thawing, leaving behind scorched soil that speeds up the release of greenhouse gases.



How the Arctic Tundra Stores Carbon:

- The Arctic tundra has historically stored vast amounts of carbon through a slow decomposition process, where organic matter accumulates in

permafrost due to cold temperatures.

- This permafrost, which remains frozen for at least two years, has acted as a natural carbon storage system, preventing the release of carbon into the atmosphere.
- Over thousands of years, this process has resulted in Arctic soils holding more than 1.6 trillion metric tonnes of carbon—about double the amount in Earth's atmosphere, making the tundra one of the planet's largest carbon reserves.

About the Arctic Tundra:

- The tundra is a cold, treeless biome with a short growing season. It forms in two regions: Arctic tundra, found above the Arctic Circle, and alpine tundra, located in high mountain elevations.
- Both receive less than 25 cm of precipitation annually and have long, cold winters. The soil is mostly permafrost, and plant life is limited to low vegetation such as mosses and lichens.
- Animals like caribou, arctic foxes, and polar bears are adapted to extreme cold and limited resources, with some migrating or hibernating.

The Path Forward:

- The Arctic tundra is increasingly threatened by climate change and human activity. If global greenhouse gas emissions are reduced, the thawing of permafrost may slow, and the release of stored carbon could be mitigated.
- However, current emission levels remain high, making it harder to reverse the damage. Continued emissions from fossil fuels and deforestation are expected to increase in 2024, further accelerating permafrost thawing and exacerbating global warming.
- The future of the Arctic tundra depends on aggressive global efforts to reduce emissions and transition to renewable energy sources.

Wroughton's Free-Tailed Bat

Why in News:

Recently, Wroughton's free-tailed bat, a rare species, has been spotted at the Yamuna Biodiversity Park in Delhi. Typically found in the Western Ghats with a single known breeding colony, the species has also been recorded in Meghalaya and Cambodia. This sighting is significant for Delhi, where around 14 bat species exist, four of which were once considered locally extinct.

About Wroughton's Free-Tailed Bat:

- Wroughton's free-tailed bat is a rare species originally thought to be confined to the Western Ghats in India, with recent sightings in northeast India and Delhi. The bat has a forearm length of 63-67 mm and weighs 27-36 grams.
- It is characterized by large forward-pointing ears and a velvety dark brown coat with pale greyish white shoulders. Its tail extends beyond the membrane, giving it the "free-tailed" name.
- The species plays an important role in regulating insect populations and assisting in pollination. Initially considered critically endangered, the bat is now classified as data deficient by the IUCN Red List, following discoveries in three locations. The sighting highlights the success of ecological restoration efforts in Delhi, where the Aravali Biodiversity Park has become a key roosting site for other bat species.



Habitat:

- This species roosts in large natural caves near forests. It is nocturnal and likely feeds on insects like other Molossids.

About Yamuna Biodiversity Park:

- Yamuna Biodiversity Park is a 9,770-hectare area located along the Yamuna River in Delhi, India. Developed by the Delhi Development Authority (DDA) with technical support from the Centre for Environmental Management of Degraded Ecosystems (CEMDE), University of Delhi, the park aims to provide habitat for migratory and resident bird species, conserve genetic resources of agricultural crops, and improve groundwater recharge.

History & Restoration:

- The park's restoration began in 2005, focusing on barren floodplains with sodic soil. Phase-I restored 157 acres by developing wetlands, grasslands,

and forests, reintroducing native plant species to reduce soil salinity. Phase-II, started in 2015, focused on active floodplains.

Flora & Fauna:

- The park hosts around 1,500 species of plants and animals, including 200 bird species. It also attracts migratory birds from Siberia, Central Asia, and Europe.
- Other fauna includes 75 species of butterflies, 10 species of snakes, and mammals like porcupines, civets, and wild boars.

India State of Forest Report

Why in News:

The India State of Forest Report 2023 (ISFR 2023) was officially launched by Bhupender Yadav, Minister for Environment, Forest, and Climate Change, at the Forest Research Institute in Dehradun. Published by the Forest Survey of India (FSI), the report offers a comprehensive analysis of India's forest and tree resources, based on satellite data and field assessments.

Total Forest and Tree Cover in India:

- According to the ISFR 2023, the total forest and tree cover in India is 8,27,357 square kilometers, which is 25.17% of the country's geographical area. This includes 7,15,343 square kilometers of forest cover (21.76%) and 1,12,014 square kilometers of tree cover (3.41%). These areas are critical for maintaining ecological balance and supporting carbon sequestration efforts.

Changes in Forest and Tree Cover (2021-2023)

- The report highlights a positive trend, with an overall increase of 1,445 square kilometers in forest and tree cover compared to 2021. Of this, forest cover increased by 156 square kilometers, and tree cover expanded by 1,289 square kilometers. This suggests that afforestation and reforestation efforts are gaining momentum, contributing to improved forest health.

Maximum Increase in Forest and Tree Cover:

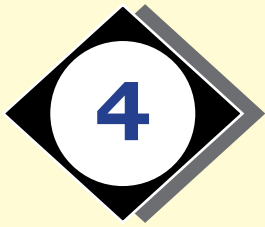
- The top four states showing the largest increases in forest and tree cover are:
 - » Chhattisgarh (684 sq km)
 - » Uttar Pradesh (559 sq km)
 - » Odisha (559 sq km)
 - » Rajasthan (394 sq km)

- For forest cover specifically, the leading states are:
 - » Mizoram (242 sq km)
 - » Gujarat (180 sq km)
 - » Odisha (152 sq km)
- The states with the largest forest and tree cover are:
 - » Madhya Pradesh: 85,724 sq km
 - » Arunachal Pradesh: 67,083 sq km
 - » Maharashtra: 65,383 sq km
- For forest cover alone, the top three states are:
 - » Madhya Pradesh: 77,073 sq km
 - » Arunachal Pradesh: 65,882 sq km
 - » Chhattisgarh: 55,812 sq km



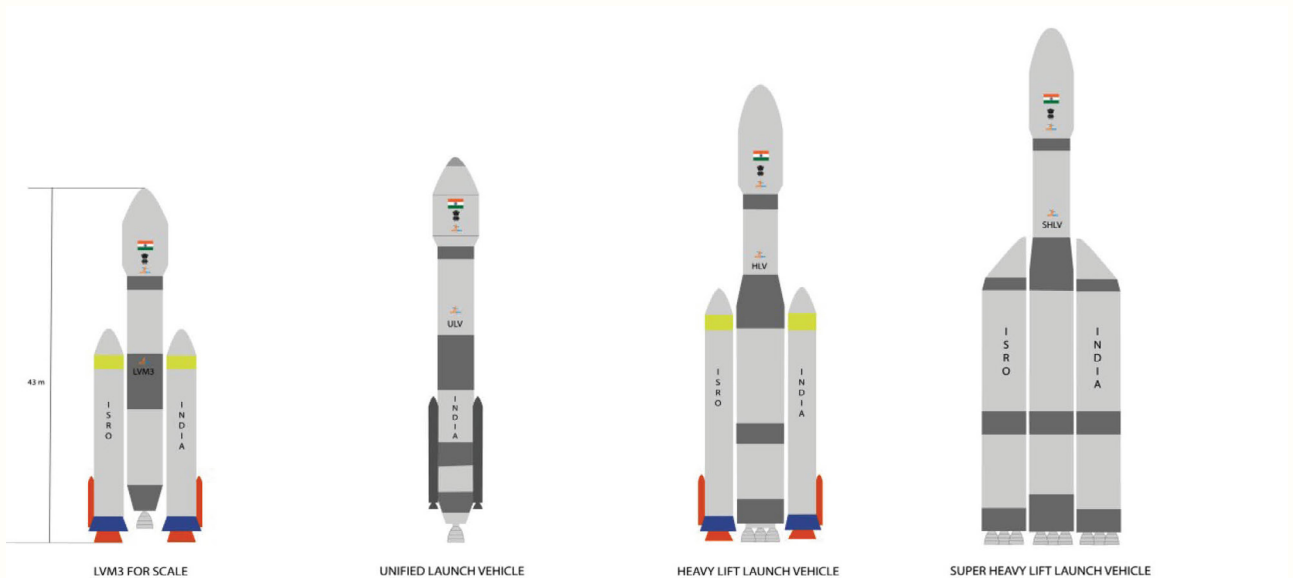
Other Key Findings:

- Lakshadweep has the highest percentage of forest cover (91.33%) among states and Union Territories, followed by Mizoram (85.34%) and Andaman & Nicobar Islands (81.62%).
- India's total mangrove cover is 4,992 sq km, and the bamboo-bearing area is estimated at 1,54,670 sq km, an increase of 5,227 sq km from 2021.
- India's total carbon stock in forests is estimated at 7,285.5 million tonnes, with a 81.5 million-tonne increase. Regarding status on achievement of target under NDC related to carbon sequestration, the current assessment shows that India's carbon stock has reached 30.43 billion tonnes of CO₂ equivalent; which indicates that as compared to the base year of 2005, India has already reached 2.29 billion tonnes of additional carbon sink as against the target of 2.5 to 3.0 billion tonnes by 2030.



Science & Technology

India's Space Exploration: The Role of ISRO's Next Generation Launch Vehicle



India's journey into space exploration, led by the Indian Space Research Organisation (ISRO), is a remarkable tale of innovation and ambition. From launching satellites to exploring interplanetary frontiers, ISRO has continuously pushed boundaries, cementing India's position as a global leader in space technology. The upcoming Next Generation Launch Vehicle (NGLV) is a game-changer, poised to redefine how India approaches space missions.

ISRO's Vision for Space Exploration:

- ❖ India's space program has grown from its initial focus on communication satellites to encompass ambitious missions aimed at deep space exploration. ISRO's vision includes:
 - » **Human Spaceflight Missions:** The Gaganyaan mission aims to send Indian astronauts into space, marking a historic milestone.
 - » **Lunar and Mars Exploration:** Successful missions like Chandrayaan-1 and Mars Orbiter Mission (MOM) have set the stage

for more complex lunar and interplanetary projects.

- » **Interplanetary Missions:** Future missions to Venus, Mars, and beyond highlight ISRO's growing expertise in interplanetary exploration.
- » **Space Station Development:** Plans for an Indian Space Station reflecting the nation's aspiration to achieve self-reliance in space-based research and technology.
- ❖ These initiatives demand advanced launch systems like the NGLV to support heavier payloads and cost-efficient operations.

What is the Next Generation Launch Vehicle (NGLV)?

- ❖ The Next Generation Launch Vehicle (NGLV) is ISRO's response to the evolving needs of space exploration and satellite deployment. Designed as a reusable, heavy-lift rocket, the NGLV will serve as a cornerstone for future missions.

Key Features of NGLV:

- ❖ **Reusable Design:** The NGLV will feature a reusable design, significantly reducing costs per mission.
- ❖ **Semi-Cryogenic Propulsion:** Using refined kerosene as fuel and liquid oxygen (LOX) as an oxidizer, the propulsion system enhances efficiency and performance.
- ❖ **Heavy Payload Capacity:** The rocket is capable of carrying up to 10 tonnes to Geostationary Transfer Orbit (GTO), making it suitable for diverse missions.
- ❖ **Modular Structure:** Its modular architecture enables bulk manufacturing and quicker turnaround between launches.

Applications of NGLV:

The versatility of the NGLV opens doors to:

- ❖ **Satellite Deployment:** Supporting global satellite launches for communication, navigation, and earth observation.
- ❖ **Deep Space Exploration:** Essential for missions to the Moon, Mars, and beyond.
- ❖ **Human Spaceflight:** A key enabler for India's manned missions, including Gaganyaan.
- ❖ **Space Cargo Transport:** Facilitating cargo supply to space stations and other orbital platforms.

ISRO's Evolution in Launch Vehicle Technology:

- ❖ **Satellite Launch Vehicle (SLV):** ISRO's first launch vehicle, the Satellite Launch Vehicle (SLV), carried small payloads into Low Earth Orbit (LEO). While basic in its capabilities, it was a significant milestone for India.
- ❖ **Augmented Satellite Launch Vehicle (ASLV):** The ASLV improved upon the SLV, capable of carrying payloads up to 150 kg. Its design laid the foundation for future advancements in launch vehicle technology.
- ❖ **Polar Satellite Launch Vehicle (PSLV):** The Polar Satellite Launch Vehicle (PSLV), first launched in 1994, became ISRO's workhorse. Key achievements include:
 - » Launching Chandrayaan-1 (India's first lunar probe) in 2008.
 - » Deploying the Mars Orbiter Mission (MOM) in 2013, making India the first country to reach Mars on its maiden attempt.
 - » Setting a global record by launching 104 satellites in a single mission.

Geosynchronous Satellite Launch Vehicle (GSLV):

- ❖ The GSLV is a more powerful rocket, designed for missions involving geostationary satellites. The Mk III variant, equipped with an indigenous Cryogenic Upper Stage (CUS), can carry heavier payloads, ensuring India's self-sufficiency in satellite launches.

ISRO's Next Generation Launch Vehicle (NGLV)

Creating cost effective & reusable solutions

Total budget **₹8,200 crore+**

- To support Government's vision of establishing **Bharatiya Antariksh Station** and **Indian Crewed Landing on Moon by 2040**
- **3 times the current payload capacity of LVM3**
- **Low-cost access to space & modular green propulsion systems**
- **3 development flights** planned with a completion target of **8 years**

Why India Needs the NGLV?

- ❖ The increasing demand for satellite launches, interplanetary exploration, and commercial space opportunities underscores the need for a versatile, heavy-lift launch vehicle. While the PSLV and GSLV Mk III have served well, their payload capacities are limited compared to the growing needs of modern space missions.
- ❖ The NGLV will not only enhance India's capability to launch heavier satellites but also reduce operational costs through its reusable design. Additionally, its capacity to support human and cargo missions will play a pivotal role in the Gaganyaan mission and the proposed Indian space station.

Private Sector Collaboration in Space Exploration:

- ❖ India's space ecosystem is witnessing a surge in private sector involvement. Startups like Skyroot Aerospace and Agnikul Cosmos are contributing innovative solutions for launch vehicles and space technology. ISRO's focus on public-private partnerships will accelerate the development of

reusable rockets like the NGLV.

- ❖ Government initiatives such as the creation of Indian National Space Promotion and Authorization Center (IN-SPACe) provide a platform for private companies to participate in building a robust space economy.

International Collaboration and Market Potential

- ❖ The NGLV's competitive pricing and reusable design will position India as a leader in the global satellite launch market. With the increasing demand for commercial satellite launches, ISRO's expertise in cost-effective solutions can attract international clients, boosting India's space economy.
- ❖ By partnering with space agencies worldwide, ISRO can also leverage international expertise in advancing reusable rocket technologies.

Future Missions Enabled by the NGLV

- ❖ The capabilities of the NGLV are aligned with India's long-term goals in space exploration, including:
 - » **Lunar Bases:** Supporting construction of habitats on the Moon.
 - » **Interplanetary Exploration:** Missions to Mars, Venus, and beyond.
 - » **Space Station Operations:** Transporting astronauts and cargo to India's future space station.

Challenges and the Way Forward

- ❖ **Technical Challenges**

- » Developing efficient reusable propulsion systems.
- » Ensuring reliability and safety for human spaceflight missions.

- ❖ **Financial Investments:** Space exploration is capital-intensive. Increased funding from both government and private sectors will be crucial for achieving long-term goals.
- ❖ **Global Competition:** With countries like the United States (SpaceX) and China advancing their reusable rocket technologies, India must innovate rapidly to stay competitive.

Conclusion:

The Next Generation Launch Vehicle (NGLV) represents a significant leap forward in India's space exploration capabilities. With its reusable design, heavy-lift capacity, and cost efficiency, the NGLV is set to transform India's role in global space exploration. As ISRO works towards ambitious goals like human spaceflight, interplanetary missions, and the establishment of a space station, the NGLV will be a cornerstone of these efforts. Coupled with increased private sector participation and global collaboration, India is well on its way to becoming a leading player in the next era of space exploration. By combining technological innovation, strategic partnerships, and efficient execution, the Next Generation Launch Vehicle will not only bolster India's space economy but also inspire the next generation of space scientists and enthusiasts.

Short Issues

ecDNA Role in Cancer

Why in News:

The eDyNAMiC team's groundbreaking research, published in Nature recently, sheds light on the mysterious world of extrachromosomal DNA (ecDNA) and its role in cancer progression and drug resistance.

What is ecDNA?

- In typical human cells, DNA resides within 23 pairs of chromosomes in the nucleus.
- During processes like chromothripsis or DNA replication errors, DNA fragments can break off

and form circular, extrachromosomal structures known as ecDNA.

- Previously considered unimportant (appearing in only 1.4% of tumors), modern genomic tools revealed that ecDNA is present in 40% of cancer cell lines and up to 90% of brain tumor samples.

ecDNA and Cancer Progression:

- ecDNA often contains multiple copies of oncogenes, genes responsible for cancer growth.
- Unlike chromosomal DNA, which is fixed, ecDNA is mobile and can interact with other ecDNA to form oncogene hubs.

- These hubs increase oncogene activity, with some being four times more abundant than in chromosomal DNA.
- This overexpression accelerates tumor growth and contributes to drug resistance.

ecDNA and Mendel's Laws:

- ecDNA challenges Mendel's third law of independent assortment, which states that genes located on different chromosomes are inherited independently.
- ecDNA clusters during cell division, allowing cancer cells to preserve advantageous genetic combinations over multiple generations.
- This is known as the "jackpot effect", enhancing tumor growth and survival.
- This discovery redefines genetic inheritance, showing that not all genes are inherited randomly.

ecDNA as a Target for Cancer Treatment:

- The structure of ecDNA creates a vulnerability in cancer cells.
- The interaction between ecDNA and cellular transcription machinery leads to DNA damage, prompting the use of the protein CHK1 for repair.
- BBI-2779, a drug that blocks CHK1, was tested and found to selectively kill cancer cells with ecDNA, reducing tumor size in mice with stomach cancer.
- This opens possibilities for targeted therapies for cancers driven by ecDNA, such as glioblastoma, ovarian cancer, and lung cancer, where traditional treatments often fall short.

The Implications of ecDNA:

- 17% of tumor samples contain ecDNA, with high concentrations in liposarcomas, brain tumors, and breast cancers.
- Prevalence increases after chemotherapy, and ecDNA correlates with metastasis and worse outcomes.
- These findings challenge current cancer biology and genetic principles, making ecDNA a central focus of cancer research and treatment development.

Antimatter's Cosmic Mystery

Why in News:

The matter-antimatter imbalance is a long-standing mystery in the universe. A groundbreaking paper published in August 2024 suggests a potential solution within the Standard Model of particle physics. While

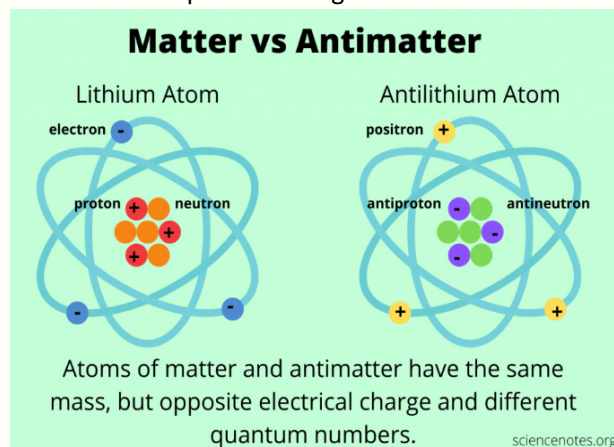
the Standard Model has successfully explained fundamental particles and forces, it struggles to explain this imbalance. The paper proposes that meson decays, which violate CP symmetry, could contribute to the imbalance.

About the Mesons:

- Mesons, composed of quark-antiquark pairs, when decaying, could create a new particle species that influenced the early universe's matter creation. Over time, the effect of these particles would diminish. If confirmed, this theory would provide a key explanation for the imbalance and demonstrate the Standard Model's broader potential.

About Antimatter:

- The concept of antimatter was theorized by Paul Dirac in 1928 and experimentally discovered by Carl Anderson in 1932.
- Antimatter consists of antiparticles that have the same mass as matter particles but opposite charges. For example, the antielectron (positron) is the antiparticle of the electron, with the same mass but a positive charge.



Antimatter's Scarcity:

- Despite being detected in cosmic rays and even within our bodies (producing one antielectron every 20 seconds), antimatter is incredibly scarce in the universe.
- This raises the critical question: Why is there so much more matter than antimatter?
- If the universe started with equal amounts of matter and antimatter, they should have annihilated each other, leaving only energy. Yet, matter dominates the universe.

About CP Violation:

- The answer likely lies in a phenomenon known

as CP violation — a violation of the combined symmetry of charge conjugation (C) and parity transformation (P).

- CP violation plays a crucial role in creating an imbalance between matter and antimatter.

Sakharov Conditions:

- Andrei Sakharov formulated three essential conditions that any theory explaining matter-antimatter asymmetry must satisfy:
 - » **Violation of CP symmetry:** Particles and antiparticles behave differently, or mirror reflection of a system results in a change in behavior.
 - » **Violation of baryon number:** Particles like protons and neutrons have a baryon number of +1, while antiparticles have -1.
 - » **Out-of-equilibrium conditions:** Particle processes must occur at different rates in the forward and backward directions, preventing thermal equilibrium.
- The Standard Model of particle physics doesn't fully meet these conditions.

Gene Therapy for Severe Hemophilia A

Why in News:

A recent breakthrough in India has shown promising results in using gene therapy to treat severe hemophilia A, a condition that has traditionally required lifelong treatment with frequent clotting factor infusions. Hemophilia A is a rare hereditary disorder that impairs blood clotting, leading to severe and spontaneous bleeding episodes. These episodes can be fatal if not treated promptly.

What is Hemophilia A?

- Hemophilia A is caused by the absence of Factor VIII, a protein essential for blood clotting. Without this clotting factor, individuals with hemophilia are at risk of prolonged bleeding from even minor injuries, and spontaneous internal bleeding can occur.
- Severe hemophilia A occurs when a person has less than 1% of the normal clotting factor, leading to frequent and dangerous bleeding episodes.
- Hemophilia A is relatively rare but prevalent in India, which has the second-largest population

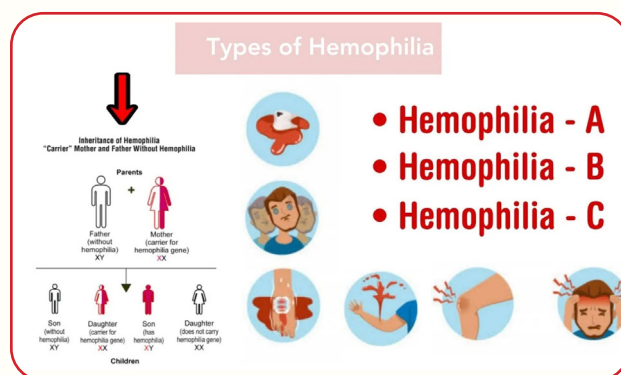
of hemophilia patients in the world, with an estimated 40,000 to 100,000 individuals affected.

Traditional Treatment for Hemophilia A:

- The standard treatment for hemophilia A involves regular injections of Factor VIII, a clotting factor that helps prevent bleeding. However, these infusions are typically required on a weekly basis, making treatment burdensome and expensive.
- A study in Heliyon (2024) estimates that treating one hemophilia patient in India can cost up to ₹2.54 crore (\$300,000) over a 10-year period.
- Treatment with Factor VIII replacements is life-long and can be difficult to manage, as patients frequently face the risk of bleeding episodes.

Gene Therapy as a Breakthrough:

- In response to these challenges, a recent study tested a new gene therapy treatment for severe hemophilia A. This therapy was trialed on five patients in Tamil Nadu.
- Gene therapy aims to offer a one-time solution by introducing a gene into the body that enables it to produce enough clotting factor to prevent bleeding episodes.
- Over an average follow-up period of 14 months, none of the five patients experienced any bleeding episodes, a significant improvement compared to the frequent bleeding episodes they would typically endure.



How Does Gene Therapy Work?

- Gene therapy for hemophilia A involves introducing a therapeutic gene into the patient's body to restore the production of Factor VIII, which is deficient in hemophilia A patients.
- Lentivirus vectors are used to deliver the gene, considered a safer method than using adenoviruses.

- The gene is fused with stem cells taken from the patients, making the process safer and potentially suitable for children.
- This novel approach eliminates the need for immunosuppressive drugs (required in other therapies) and reduces risks to liver health.

Global Context and Comparison to Roctavian:

- Currently, the only FDA-approved gene therapy for hemophilia A is Roctavian, which has shown positive results in trials with 112 patients. After receiving Roctavian treatment, the average number of bleeding episodes decreased from 5.4 per year to 2.6 per year.
- The Indian study differs by using lentivirus-based gene delivery, which may be safer and more affordable.
- Roctavian is associated with high costs, limiting access for patients, whereas the Indian gene therapy trial offers the potential for localized manufacturing in India, making it more accessible and affordable.

Expert Opinion on the Study:

- Experts have hailed this trial as a “ground-breaking” achievement, emphasizing that it demonstrates the feasibility of conducting gene therapy trials in resource-constrained settings like India.
- It also highlights the potential for localized gene therapy manufacturing, which could reduce costs and expand access to treatments beyond India.

Conclusion:

The development of gene therapy for severe hemophilia A represents a significant breakthrough in the treatment of the disorder. This approach could potentially offer a permanent solution to a lifelong condition, reducing the need for frequent, expensive treatments. With continued research and advancements, gene therapy could become a more affordable and accessible treatment, particularly in countries like India, where the burden of hemophilia is high. The success of this study could pave the way for improved global access to life-changing therapies, especially in resource-constrained regions.

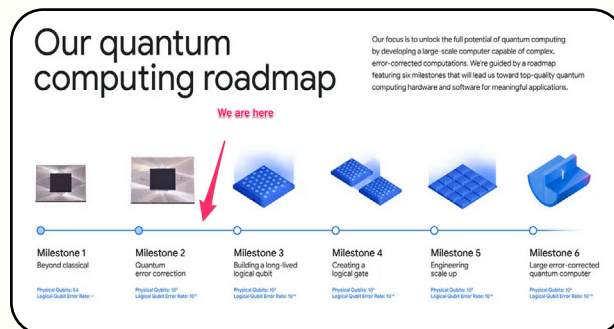
Google's Quantum Computing Breakthrough: The Willow Chip and Its Implications

Why in News:

In a significant breakthrough in quantum computing, Google has unveiled its Willow chip, marking a pivotal step towards making quantum technology more practical. The chip successfully solved a complex computation in under five minutes, a task that would have taken traditional supercomputers about 10 septillion years to complete.

What is Quantum Computing?

- Quantum computing is an emergent field of cutting-edge computer science harnessing the unique qualities of quantum mechanics to solve problems beyond the ability of even the most powerful classical computers.
- By taking advantage of quantum physics, fully realized quantum computers would be able to process massively complicated problems at orders of magnitude faster than modern machines. For a quantum computer, challenges that might take a classical computer thousands of years to complete might be reduced to a matter of minutes.



Google's Willow Chip: A Technological Leap:

- **Advanced Design:** The Willow chip is a quantum computing system that integrates advanced quantum error correction techniques to improve performance and reduce errors. Unlike previous systems, Willow reduces the error rate as more qubits are added, a significant challenge in quantum computing. Google's team was able to achieve real-time error correction, which ensures the accuracy of computations even as the complexity increases.
- **Performance Benchmarking:** In testing, the Willow chip surpassed some of the most powerful classical supercomputers in the world, including Frontier, using the Random Circuit Sampling (RCS) benchmark. This benchmark assesses the

quantum computer's ability to perform tasks that classical computers cannot, marking a significant achievement in quantum computing performance.

Implications for AI, Data Security and National Policies:

- **Impact on Artificial Intelligence:**
 - » Quantum computing could dramatically accelerate AI development, particularly in areas requiring vast data processing. Quantum computers can train AI models more efficiently, potentially revolutionizing industries such as healthcare, finance, and cybersecurity.
 - » As AI grows in importance, governments will need to adapt policies to account for the integration of quantum computing in AI systems and ensure that these technologies are developed responsibly.
- **Challenges to Encryption and Data Security:**
 - » One major concern surrounding quantum computing is its potential to break RSA encryption, a widely-used method for securing online data.
 - » Although Willow is not yet capable of breaching RSA encryption, as quantum technology advances, this could become a threat to current security protocols. Governments may need to update cybersecurity policies to protect against future vulnerabilities in the quantum era.

Conclusion:

Google's Willow chip represents a major milestone in the development of quantum computing, signaling the transition from theoretical to practical applications. As quantum technology continues to evolve, it will have profound implications for Artificial Intelligence, cybersecurity, and technological policy. Governments worldwide must prepare for the transformative impact of quantum computing on industries and global security.

Dark Matter

Why in News:

A recent study showed that dark matter particles might need to be heavier than previously thought, especially in the dense inner regions of dwarf galaxies like Leo II. For years, scientists believed the minimum mass of a dark matter particle was 10^{-31} times the

mass of a proton. However, in May 2024, physicists revised this estimate, increasing it to 2.3×10^{-30} proton masses, marking a significant advancement in the understanding of dark matter.

What is dark matter?

- Dark matter is an invisible, mysterious substance that makes up about 85% of the matter in the universe. It does not emit, absorb, or reflect light, making it undetectable through traditional telescopes.

The Mystery of Dark Matter:

- Dark matter doesn't emit or reflect light, making it invisible. Its existence was first suggested in the 1970s when astronomers observed unusual patterns in the way stars moved in galaxies. Stars at the outer edges were moving faster than expected, indicating an unseen mass—dark matter—that was influencing their motion.
- Dark matter is the primary substance in dwarf galaxies, making up about 99% of their mass. If dark matter particles were too light, their size would exceed that of a dwarf galaxy, preventing the formation of small macroscopic objects.



The Distribution of Dark Matter:

- Dark matter is not uniformly spread across the universe but tends to clump around galaxies and clusters. These clumps help explain the structure of the universe and the formation of galaxies.
- The mass of dark matter particles directly affects how it is distributed—lighter particles would form a "fluid" while heavier ones could form denser clumps called dark matter halos.

The Role of Dark Matter Particles' Mass:

- The mass of dark matter particles influences their distribution and behavior. For example, if dark matter particles were as light as 10^{-31} times a proton's mass, they would be widely dispersed, forming a cosmic fluid.
- On the other hand, heavier particles would form denser structures around galaxies. Research suggests that dark matter particles are likely to be heavier, with estimates ranging from 10^{-30} to 10^{-19} times the mass of a proton.

Why is this discovery significant?

- The revision of dark matter's mass requirement by an order of magnitude is a major update in physics. It highlights the evolving nature of our understanding, facilitated by advanced computer simulations rather than traditional methods.

Diamond Cooled Servers

Why in News:

Akash Systems has entered a \$27 million partnership with NxtGen Datacenter and Cloud Technologies, India's largest sovereign cloud provider, to supply Diamond Cooled servers for NxtGen's data centers across India. This collaboration aims to set a new benchmark for sustainable AI infrastructure, enhancing energy efficiency and computational performance in AI workloads.

Diamond Cooling Technology:

- Akash's Diamond Cooling technology integrates synthetic diamond, a material with exceptional thermal conductivity (2200 W/mK), into semiconductor chips. This innovation accelerates heat extraction from GPU chips, reducing thermal throttling and increasing performance.
- The cooling technology includes waterless liquid cooling, cutting GPU hotspot temperatures by 10° – 20° C and reducing GPU fan energy consumption by 90%.
- This ensures superior thermal management for intensive AI workloads, extending the lifespan of servers and supporting overclocking for demanding machine learning and deep learning tasks.

Advantages:

- Reduces energy use, promoting environmentally sustainable AI infrastructure.
- Enhances server performance while supporting

the extended lifespan of servers, crucial for long-term AI infrastructure viability.

- Initially developed for space applications, Diamond Cooling is now revolutionizing AI server performance.
- Provides a scalable solution for enterprises seeking efficient and reliable computing power.

Impact on AI Compute Sector:

- The partnership between Akash Systems and NxtGen will enable NxtGen to double the performance per watt, reducing AI compute service costs by over 50%.
- By addressing the energy consumption challenge, the collaboration ensures high-performance AI processing while minimizing environmental impact.
- This partnership aligns with the growing demand for energy-efficient AI solutions, driving advancements in automated data analytics, predictive modeling, and natural language processing.

NxtGen's Role in India's Cloud Landscape:

- As India's largest sovereign cloud provider, NxtGen is a key player in the country's digital infrastructure. The company operates multiple data centers, offering AI compute, disaster recovery, and managed security services to over 900 clients.
- By integrating Akash's Diamond Cooling technology, NxtGen expands its capabilities, offering sustainable AI solutions while reducing operational costs for enterprises in sectors like government, healthcare, and finance.

Global Impact and Future Outlook:

- The partnership positions NxtGen as a leader in global AI compute solutions, reinforcing its commitment to sustainability. Akash Systems' has \$68 million funding approval under the U.S.
- Department of Commerce's CHIPS and Science Act further strengthens its role in advancing sustainable AI technologies.
- This collaboration signals a new era in AI compute infrastructure, offering a cost-effective, energy-efficient, and environmentally sustainable solution to meet the growing demands of AI technologies.

Conclusion:

The Akash-NxtGen partnership sets a new standard in sustainable AI infrastructure, combining energy efficiency with high performance to drive the future of AI computing. This collaboration not only benefits

India's digital ecosystem but also positions both companies as global leaders in sustainable technology.

DNA Profiling and Privacy Concerns

Why in News:

The Centre for DNA Fingerprinting and Diagnostics (CDFD) recently uncovered a significant issue during a DNA analysis, revealing the practice of Levirate within a family. This raised concerns about the maintenance of genetic privacy, an issue that has gained attention as DNA profiling becomes more widespread.

Overview of DNA Profiling:

- DNA profiling involves analyzing specific regions of DNA, known as markers, to generate a unique genetic profile for an individual.
- The process typically includes isolation of DNA, fragmentation using enzymes, separation of DNA fragments by size through capillary electrophoresis, and comparison of these patterns across samples.
- Techniques such as Short Tandem Repeats (STR) analysis, Polymerase Chain Reaction (PCR), and Single Nucleotide Polymorphism (SNP) analysis play critical roles in generating these profiles.

Applications of DNA Profiling:

DNA profiling has broad applications:

- **Forensic Science:** It is used to link suspects to crime scenes, revolutionizing criminal investigations since its first application in 1986.
- **Genetic History:** DNA profiling helps establish biological relationships and trace ancestry.
- **Healthcare:** Understanding genetic predispositions allows for more personalized and effective treatment plans.
- **Wildlife Conservation:** It aids in tracking animal migration and maintaining genetic diversity in endangered species.

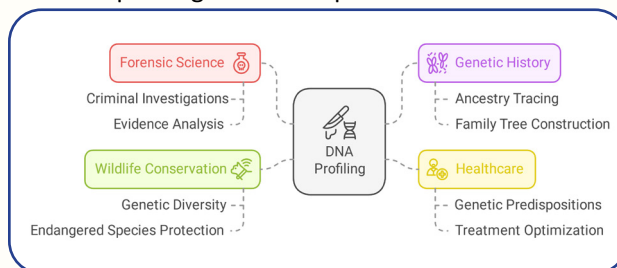
Privacy Risks of DNA Profiling:

While DNA profiling holds significant potential, it also raises privacy concerns:

- **Sensitive Information:** Genetic data can reveal personal information such as ancestry, medical conditions, and predispositions, potentially exposing individuals to discrimination or unwanted scrutiny.
- **Misuse of Data:** Without strict regulations, DNA profiles can be misused by third parties, including

government agencies and private companies, leading to privacy violations and surveillance.

- **Data Collection by Companies:** Direct-to-consumer genetic testing companies may collect and sell personal genetic data to data brokers, impacting insurance rates and other aspects of life.
- **Legal Concerns:** In forensic settings, DNA profiles might be retained by law enforcement agencies for identification purposes, raising concerns about their prolonged use and potential misuse.



Legal Provisions in India:

- India has some legal provisions concerning DNA profiling. The Code of Criminal Procedure (CrPC) allows DNA profiling in criminal investigations, particularly for rape suspects (Section 53A).
- Additionally, the DNA Technology (Use and Application) Regulation Bill, 2018, although withdrawn, aimed to regulate DNA profiling practices and create DNA data banks for criminal investigations.
- However, concerns regarding the potential for misuse and the impact on individual privacy remain unresolved.

Conclusion:

While DNA profiling offers invaluable benefits, such as advancing healthcare and solving crimes, it also poses significant challenges in terms of genetic privacy and data security. Striking a balance between the use of DNA profiling for societal benefits and protecting individual privacy is crucial as the technology continues to evolve. Legal frameworks and stringent regulations will be essential in safeguarding personal genetic information from misuse.

Nano Bubble Technology

Why in News:

The Delhi Zoo has initiated a trial of nano bubble technology, a cutting-edge and eco-friendly solution designed to improve water quality in its ponds.

This innovative method addresses issues like water pollution, algae growth, and poor visibility, benefiting both aquatic animals and visitors.

What is Nano Bubble Technology?

- Nano bubble technology utilizes ultrafine bubbles, called nanobubbles, which are less than 200 nanometers in diameter and invisible to the naked eye. Unlike regular bubbles that quickly rise and burst, nanobubbles remain suspended in water, interacting with pollutants and breaking them down effectively.

How it Works:

- **Pollutant Breakdown:** The strong negative charge of nanobubbles attracts and decomposes impurities like algae, organic waste, and oil.
- **Oxygenation:** Nanobubbles increase dissolved oxygen levels, promoting healthier aquatic ecosystems.
- **Longevity:** Their extended presence in water enhances their efficiency in maintaining water purity.

Benefits of Nano Bubble Technology:

- **Enhanced Aquatic Health:** By purifying water without chemicals, nanobubbles create a safe and healthy environment for gharials and marsh crocodiles.
- **Improved Visitor Experience:** Clearer water allows visitors to easily observe submerged animals, even when they do not surface.
- **Ecological Restoration:** Nanobubbles help prevent algae blooms, increase oxygen levels, and maintain balanced pond ecosystems.

Advantages over Traditional Methods:

- **Chemical-Free:** Offers an environmentally friendly alternative to chemical-based water purification.
- **Energy-Efficient:** Reduces operational costs while delivering effective results.
- **Versatile:** Applicable to lakes, ponds, aquariums, and wastewater treatment facilities.

Broader Applications of Nano Bubble Technology:

- **Agriculture:** Enhances oxygen delivery to plant roots, improving nutrient uptake and plant growth.
- **Healthcare:** Emerging applications include drug delivery, medical imaging, and cancer treatment.
- **Industry:** Used in cleaning equipment, optimizing fermentation, and enhancing oil recovery.

Conclusion:

The Delhi Zoo's trial of nano bubble technology represents a significant step toward sustainable water management. This eco-friendly innovation not only addresses challenges in pond ecosystems but also enhances the welfare of aquatic animals and enriches the visitor experience. With potential applications across various fields, nanobubbles are poised to revolutionize water purification and contribute to broader environmental and industrial advancements.

Using Light Echoes to Measure Black Holes

Why in News:

Astrophysicists from Princeton University have proposed a new method using light echoes to measure the mass and spin of black holes. This technique provides a more accurate way to study these enigmatic cosmic objects.

What Are Black Holes?

- A black hole is an object with gravity so intense that nothing, not even light, can escape. Black holes are formed when a massive star runs out of fuel and collapses, resulting in a singularity, a point where gravity becomes infinite and conventional physics breaks down. Black holes are classified into three categories:
 - » **Stellar-Mass Black Holes:** Around 20 times the mass of the Sun.
 - » **Supermassive Black Holes:** Ranging from millions to billions of times the mass of the Sun.
 - » **Middleweight Black Holes:** Hypothetical objects between stellar-mass and supermassive black holes.

The Light Echo Phenomenon:

- Light echoes occur when light from a distant astronomical source, like a star or supernova, passes near a massive object such as a black hole. The black hole bends the light's path, causing some light beams to take longer routes. When these beams reach Earth, they arrive at different times, creating an echo effect.
- This phenomenon offers vital information about black holes, including their mass, radius, and spin. For rotating black holes (Kerr black holes), the echo will also be influenced by their angular momentum.

- Light echoes are particularly valuable as they provide a better signal-to-noise ratio compared to traditional measurement methods, where hot gases and radiation complicate observations.

Measuring Light Echoes:

- To detect light echoes, the Princeton team proposed using long-baseline interferometry. By placing telescopes on Earth and in space at significant distances from each other, scientists can capture light signals arriving at different times due to their interaction with the black hole.
- The delayed signals will interfere with each other, creating a unique signal that can be analyzed to reveal information about the black hole's properties.
- The study focused on the supermassive black hole in the M87 galaxy, located 55 million light-years from Earth, using the bright light rings surrounding the black hole as an ideal target to study light echoes.

Significance of the Study:

- **Accurate Measurement:** Light echoes allow precise measurements of black holes, providing a clearer view of their characteristics.
- **Testing General Relativity:** The study also tests Einstein's theory of relativity, which predicts that light echoes will be achromatic, occurring across all frequencies. Detecting light echoes at multiple frequencies could confirm this prediction.
- **Understanding Black Holes' Role:** Analyzing light echoes helps scientists understand how black holes influence their galaxies and play a role in star formation.

Conclusion:

The use of light echoes offers a novel approach to studying black holes, providing more accurate methods for measuring their properties and testing general relativity. As this technique evolves, it holds the potential to significantly enhance our understanding of black holes and their influence on the universe.

WHO Scientists Endorse Weight Loss Drugs for Obesity

Why in News:

The World Health Organization (WHO) has endorsed a new class of drugs, GLP-1 receptor agonists (GLP-1 RAs), as a treatment for obesity. This endorsement

acknowledges the limitations of traditional approaches like diet and exercise in addressing the global obesity crisis. Drugs such as semaglutide and tirzepatide offer a promising alternative for effective weight management.

Why WHO Recognizes These Drugs:

- Despite the effectiveness of promoting healthy eating and exercise, these strategies have not been successful in curbing the obesity epidemic. WHO reports that the global prevalence of obesity has doubled in adults and quadrupled in adolescents since 1990.
- In India, obesity rates have risen sharply, with millions affected. GLP-1 RAs, which mimic hormones regulating appetite and blood sugar, offer a breakthrough in managing obesity, which is linked to various health risks, including non-communicable diseases and premature death.

About GLP-1 Receptor Agonists:

- GLP-1 receptor agonists (GLP-1 RAs) are a class of medications that mimic the action of the natural hormone Glucagon-Like Peptide-1 (GLP-1). This hormone plays a crucial role in regulating appetite, food intake, and blood sugar levels.

Uses:

- GLP-1 RAs are primarily used to treat obesity by reducing appetite and promoting weight loss.
- Initially developed for the management of type 2 diabetes, these drugs help control blood sugar levels.
- Medications such as semaglutide (marketed as Ozempic and Wegovy) and tirzepatide have demonstrated significant weight loss, with clinical trials showing up to a 25% reduction in body weight.

Significance:

- The GLP-1 RA class is seen as a breakthrough in addressing the global obesity pandemic, which affects nearly 1 in 8 people worldwide.
- These drugs help reduce the risk of obesity-related non-communicable diseases, including cardiovascular disease and diabetes.
- The widespread adoption of GLP-1 RAs could have transformative effects, not only on individual health but also on global healthcare costs, which are projected to reach \$3 trillion by 2030 due to obesity-related issues.



Economy



The Indian Rupee's Depreciation: Understanding the Exchange Rate Dynamics

The Indian rupee has recently breached the 85-mark against the US dollar, with one US dollar costing Rs 85. This represents a weakening of the Indian rupee, which stood at around 61 against the dollar a decade ago. The exchange rate of the rupee against the dollar has been in a long-term decline, a trend that can be attributed to various economic factors and market dynamics.

Understanding Exchange Rates

- An exchange rate refers to the value of one currency in terms of another currency. It determines how much of one currency is required to buy another currency, such as the rupee's value in terms of the US dollar or the euro.
- For example, if the exchange rate between the Indian rupee and the US dollar is Rs 85, then one would need 85 Indian rupees to purchase one US dollar.
- Exchange rates can fluctuate over time based on a variety of factors, including trade balances, investment flows, inflation rates, and government policies.
- In the case of India and the US, changes in the demand for each other's currencies in the foreign exchange market directly impact the rupee's exchange rate against the dollar.
- **Trade in Goods:** One of the primary factors that influence exchange rates is trade between countries. When a country like India imports more goods from another country, such as the United States, it needs to acquire foreign currency (in this case, US dollars) to pay for those imports. If India imports more from the US than it exports, the demand for US dollars will exceed the demand for Indian rupees, which causes the rupee to depreciate. In other words, more rupees are needed to purchase one US dollar.
- **Trade in Services:** Similar to goods, services such as tourism, education, and software outsourcing also play a role in the demand for currencies. If Indians purchase more services from the US than Americans purchase from India, the demand for the US dollar will rise, putting downward pressure on the value of the rupee. For instance, if more Indians travel to the US for vacation or education, the demand for the US dollar will increase, causing the rupee to weaken.
- **Foreign Investments:** Foreign investments also affect exchange rates. If foreign investors, particularly Americans, invest more in India than Indian investors do in the US, the demand for Indian rupees will rise, which will cause the rupee to appreciate. On the other hand, if American investments in India decrease or if Indian investments in the US increase, the demand for rupees will fall, leading to a depreciation of the

Determinants of Exchange Rates

- **Trade in Goods:** One of the primary factors

rupee against the dollar.

Factors Affecting Demand for the Rupee

- **Tariffs and Trade Barriers:** Government-imposed tariffs and trade barriers can significantly impact the demand for a currency. For instance, if the US imposes high tariffs on Indian goods, it would make Indian products more expensive and less attractive to American consumers. As a result, the demand for Indian goods would decrease, leading to a lower demand for the rupee. The reduced demand for rupees would weaken the currency, and the exchange rate of the rupee against the dollar would decline.
- **Inflation Rates and Economic Conditions:** Inflation is another critical factor that influences exchange rates. When a country experiences higher inflation than its trading partners, the value of its currency erodes faster. For example, if India has an inflation rate of 6% while the US experiences zero inflation, the real value of the Indian rupee would decrease relative to the US dollar. This disparity in inflation rates affects investment decisions. Foreign investors might find it less attractive to invest in India if the inflation rate is high, as their returns would be eroded by inflation. As a result, the demand for the rupee would decrease, causing it to weaken against the dollar.
 - » In contrast, if the US experiences a lower inflation rate than India, American investments might become more attractive. Investors could seek higher returns in the US, causing a capital outflow from India. This would reduce the demand for rupees and increase the demand for US dollars, leading to a further depreciation of the rupee.
- **Capital Flows and Investor Confidence:** In addition to inflation, investor confidence plays a significant role in determining the demand for a currency. If investors believe that India's economic conditions are deteriorating or that there are risks associated with investing in the country, they may pull their investments out of India. This could lead to a reduction in the demand for the rupee, causing it to lose value against the dollar. Conversely, if India's economy is perceived to be growing and investment-friendly, the demand for the rupee would increase, strengthening the currency.
- **Global Strengthening of the US Dollar:** The US Federal Reserve has raised interest rates in recent years, making the dollar more attractive to investors. Higher rates provide better returns on US-denominated assets, increasing the demand for the dollar. The US economy has shown robust growth, further driving the demand for the dollar. As the dollar strengthens, more rupees are required to purchase a single dollar, leading to the rupee's depreciation.
- **India's Trade Imbalance:** India imports more goods than it exports, leading to a higher demand for foreign currencies, particularly the US dollar. To pay for these imports, India needs to acquire dollars, putting pressure on the rupee.
 - » India is a major importer of oil, which requires payments in US dollars. As global crude oil prices rise, India's demand for dollars to pay for these imports increases, exacerbating the rupee's depreciation.
- **Inflationary Pressures in India:** India's inflation rate has been higher than that of many developed countries. When inflation is higher in India, the real value of the rupee erodes faster compared to other currencies, making the rupee less attractive to foreign investors.
 - » Higher inflation means lower purchasing power for consumers and businesses in India. For foreign investors, this erodes potential returns, leading to reduced investments in the Indian economy. As a result, there is less demand for the rupee, putting additional pressure on its value.
- **Capital Outflows:** As inflation increases and the investment environment becomes less attractive, foreign investors may seek higher returns elsewhere, particularly in economies with lower inflation or more favorable conditions.
 - » When foreign investors pull their investments out of India and move them to other markets, the demand for the rupee decreases, while the demand for other currencies (such as the US dollar) increases. This shift in capital flows further weakens the rupee.

Reserve Management by the Reserve Bank of India (RBI)

- **Foreign Exchange Reserves:** The RBI uses its foreign exchange reserves to intervene in the market and prevent excessive depreciation of

the rupee. However, if the rupee continues to weaken despite interventions, the central bank may deplete its reserves, which can affect India's overall economic stability.

- **Interest Rate Differentials:** The RBI's monetary

policy, including interest rate changes, can impact the demand for the rupee. If Indian interest rates are lower compared to global rates, it may lead to capital outflows, putting downward pressure on the rupee.

"Food Inflation: The Need for Reforms in Agricultural and Climate Policy"



Food inflation, marked by a sustained increase in the prices of food items, is one of India's most pressing economic challenges. With food and beverages comprising nearly 45.86% of the Consumer Price Index (CPI) basket, the rise in food prices directly influences headline inflation, impacting households, businesses, and government policies. In a country like India, where a significant proportion of the population spends a large share of income on food, inflation erodes purchasing power, worsens inequality, and threatens food security.

- India's retail food inflation has recently shown some signs of moderation, easing to 9.04% in November from 10.87% in October. However, concerns remain around specific commodities such as wheat and edible oils, which continue to contribute significantly to rising food costs.

Causes of Food Inflation in India:

- India's food inflation is driven by a combination of structural, cyclical, and external factors. While supply-side disruptions remain the primary drivers, demand-side factors also play a crucial role in shaping inflationary trends.

- **Climate Change and Weather Volatility:** India's agriculture is heavily dependent on monsoons, which have become erratic due to climate change. Extreme weather events like heatwaves, floods, droughts, and unseasonal rains significantly affect crop cycles, reduce yields, and disrupt supply chains.

- » **Heatwaves:** In 2022-23, heatwaves in northern India led to shrivelled wheat grains and reduced yields. Milk and poultry production also declined as livestock were affected by soaring temperatures.
- » **Unseasonal Rains:** Crops like onions, tomatoes, and wheat were damaged during harvesting due to unexpected rainfall in 2023.
- » **El Niño Effect:** The 2023 El Niño phenomenon led to the driest August on record, impacting rice, pulses, and vegetable yields.

- These disruptions create localized shortages that escalate into national-level price increases.
- **Weak Agricultural Infrastructure:** India's agricultural supply chain suffers from significant inefficiencies, particularly in handling perishable

commodities like fruits, vegetables, and dairy. Inadequate cold storage facilities, poor transportation networks, and post-harvest losses contribute to price volatility.

- » It is estimated that India loses 16-18% of its fruits and vegetables due to spoilage, amounting to ₹44,000 crore annually.
- » Commodities like tomatoes, onions, and potatoes (TOP) are especially vulnerable, with their prices experiencing sharp spikes due to supply chain bottlenecks. For instance, in 2024, vegetable inflation contributed 63% to overall food inflation, with onion prices surging by 66.2%.
- **Global Supply Chain Disruptions:** India's reliance on imports for key commodities, such as edible oils and pulses, exposes it to global price volatility. Factors like geopolitical conflicts, trade restrictions, and currency fluctuations amplify domestic inflation.
 - » **Russia-Ukraine Conflict:** This disrupted the supply of wheat and edible oils, significantly increasing their prices.
 - » **Edible Oil Crisis:** India imports over 60% of its edible oil needs, making it highly susceptible to international price shocks. Import restrictions or higher customs duties further exacerbate domestic shortages.
- **Policy Factors:** Government policies on minimum support prices (MSP), buffer stock management, and import-export restrictions also influence food inflation.
 - » **Minimum Support Price (MSP):** While MSP ensures better returns for farmers, it often leads to higher procurement costs, which are passed on to consumers.
 - » **Export Restrictions:** During high global prices, exporting commodities like sugar, rice, and wheat becomes more lucrative for traders, reducing domestic supply.
 - » **Buffer Stock Management:** Delayed or inadequate release of food stocks from the Food Corporation of India (FCI) creates artificial shortages, driving up prices.
- **Rising Input Costs:** Increased costs of inputs like fertilizers, pesticides, and diesel (used for irrigation and transportation) are passed on to consumers in the form of higher food prices. For instance:
 - » The Russia-Ukraine war disrupted global fertilizer supplies, causing a spike in prices and

shortages in India.

- » Rising fuel prices also escalate transportation costs, further increasing food inflation.
- **Shifts in Consumption Patterns:** The growing middle class in India is shifting towards protein-rich foods such as eggs, milk, meat, and pulses. This rising demand, coupled with stagnant production growth, contributes to inflation in these categories.

Implications of Food Inflation:

- **Erosion of Purchasing Power:** Food inflation disproportionately impacts low-income households, where food constitutes a large share of total expenditure.
 - » High inflation forces families to cut back on essential expenses like healthcare and education, exacerbating poverty.
 - » Persistent inflation also reduces real wages, leading to a decline in living standards.
- **Spillover Effects on Overall Inflation:** Food inflation significantly contributes to overall inflation in India due to its large weight in the CPI. This creates a vicious cycle:
 - » Higher food prices increase expectations of future inflation, influencing wage demands and non-food prices.
 - » Rising inflationary expectations also force the Reserve Bank of India (RBI) to tighten monetary policy, which can stifle economic growth.
- **Food Security Concerns:** Sustained high food prices undermine access to nutritious food, especially for vulnerable populations. This adversely affects health outcomes, particularly for children and pregnant women, leading to higher rates of malnutrition and stunting.
- **Political and Social Unrest:** Sharp increases in food prices often lead to public dissatisfaction and protests. Governments face pressure to implement populist measures like subsidies and price caps, which can strain public finances.

Government Measures to Control Food Inflation:

The government has adopted several strategies to manage food inflation, focusing on both short-term interventions and long-term reforms:

- **Short-Term Measures:**
 - » **Price Stabilization Fund (PSF):** To manage volatility in the prices of essential commodities

like onions, tomatoes, and pulses.

- » **Stocking Limits:** Enforcing limits under the Essential Commodities Act to curb hoarding and black marketing.
- » **Export Bans and Import Subsidies:** Temporarily banning exports of essential items like rice and sugar, and reducing import duties on edible oils and pulses to stabilize domestic prices.
- **Long-Term Reforms:**
 - » **Investment in Agricultural Infrastructure:** Improving irrigation facilities, cold storage, and transportation networks to reduce post-harvest losses.
 - » **Boosting Domestic Production:** Promoting self-sufficiency in oilseeds, pulses, and horticulture through schemes like the National Food Security Mission (NFSM).
 - » **Encouraging Crop Diversification:** Supporting farmers to grow high-value crops and adopt sustainable practices to reduce dependency on monsoon-sensitive staples.

Global Best Practices in Managing Food Inflation:

India can draw lessons from global experiences in managing food inflation:

- **Precision Agriculture (Israel):** Use of technology to optimize water and fertilizer usage can improve productivity and reduce waste.
- **Buffer Stock Mechanisms (China):** Maintaining large strategic reserves to stabilize prices during supply shocks.
- **Crop Insurance (USA):** Comprehensive insurance schemes to protect farmers against climate risks and ensure stable production.

Way Forward: Tackling Food Inflation Holistically

To address food inflation effectively, India needs a multi-pronged strategy that includes both immediate interventions and systemic reforms:

- **Building Climate Resilience**
 - » Develop drought-resistant and heat-tolerant crop varieties through agricultural research.
 - » Promote efficient irrigation techniques like drip and sprinkler systems to reduce water dependency.
- **Strengthening Supply Chains**
 - » Expand cold storage and warehousing infrastructure to minimize post-harvest losses.
 - » Improve rural roads and transportation networks to facilitate quicker and cheaper movement of goods.
- **Enhancing Domestic Production**
 - » Focus on increasing the production of pulses and oilseeds to reduce import dependence.
 - » Encourage organic and sustainable farming practices to improve soil health and productivity.
- **Policy Reforms**
 - » Rationalize MSP policies to balance farmer incentives with consumer affordability.
 - » Streamline the Public Distribution System (PDS) to ensure timely availability of essential commodities.
- **Promoting Dietary Diversification**
 - » Raise awareness about locally available and less expensive nutritious foods to reduce overdependence on staples like wheat and rice.

Short Issues

Surge in UPI Fraud Cases

Why in News:

In FY24, UPI (Unified Payments Interface) fraud cases surged by 85%, with the number of incidents rising from 7.25 lakh in FY23 to 13.42 lakh in FY24. The total value of these fraudulent transactions also saw a significant increase, reaching ₹1,087 crore compared to ₹573 crore the previous year. The Ministry of

Finance revealed these figures in a reply to Parliament, highlighting the growing challenges in securing the country's booming digital payments ecosystem.

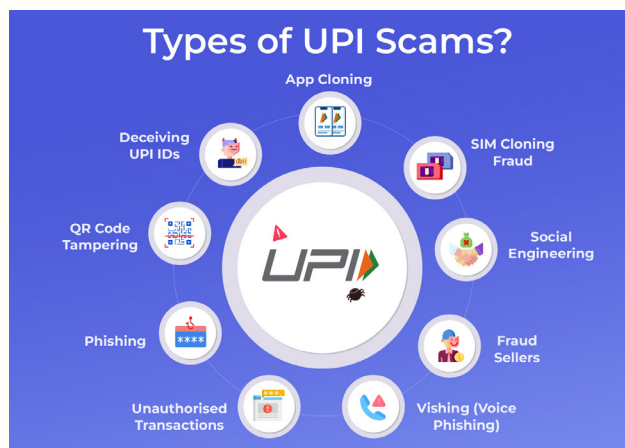
About Unified Payments Interface (UPI):

- Unified Payments Interface (UPI) is a real-time payment system developed by the National Payments Corporation of India (NPCI) to facilitate instant money transfers between banks. It enables seamless, secure and instantaneous digital

transactions through mobile devices.

Types of UPI Frauds:

- **Phishing Attacks:** These are the most common forms of fraud where attackers use deceptive emails or messages to trick users into revealing sensitive information such as UPI PINs or bank account details.
- **Malware Attacks:** Malicious software targeting smartphones that can compromise UPI apps and steal sensitive data. Such malware can allow attackers to remotely access a user's device and initiate fraudulent transactions.
- **Social Engineering Fraud:** Fraudsters manipulate victims by creating a sense of urgency or fear (e.g., pretending to be bank officials or police) to extract sensitive information or initiate transactions under duress.



Key Highlights:

- **Increase in Fraud Cases:** UPI fraud incidents rose from 7.25 lakh in FY23 to 13.42 lakh in FY24, with the total value nearly doubling, indicating a significant rise in cybercrime-related financial losses.
- **Growing UPI Adoption:** UPI transactions increased by 57%, reaching 13,113 crore in FY24. While this growth is positive, it also leads to more opportunities for fraudsters.
- **Fraud Incidents in FY24-25:** In the first months of FY24-25, 6.32 lakh fraud incidents were reported, involving ₹485 crore, nearly half of the previous year's total, highlighting an alarming trend.
- **Increased Vulnerability with Growth:** As UPI adoption grows, especially in rural areas, lack of digital literacy makes users more vulnerable to scams, with fraudsters using deceptive methods

like fake calls and messages.

Initiatives for Preventing Cyber Frauds in India

- **Indian Cybercrime Coordination Centre (14C):** Launched by MHA to combat cybercrime at national and state levels.
- **CERT-In:** The national agency responding to computer security incidents and providing cybersecurity guidance.
- **PMGDISHA:** A digital literacy program aimed at educating rural India on secure digital practices.
- **Cyber Swachhta Kendra:** Detects botnet infections and helps secure devices and networks from cyber threats.
- **Security Measures:** The government and RBI introduced measures like the CPFIR, device binding, PIN-based authentication, and transaction limits, but their long-term effectiveness remains to be seen.
- **Public Awareness and Reporting:** Initiatives like the National Cybercrime Reporting Portal and awareness campaigns aim to empower citizens and reduce fraud, though fraudsters' evolving tactics may require more advanced solutions.

Package for Boosting Tourism Infrastructure

Why in News:

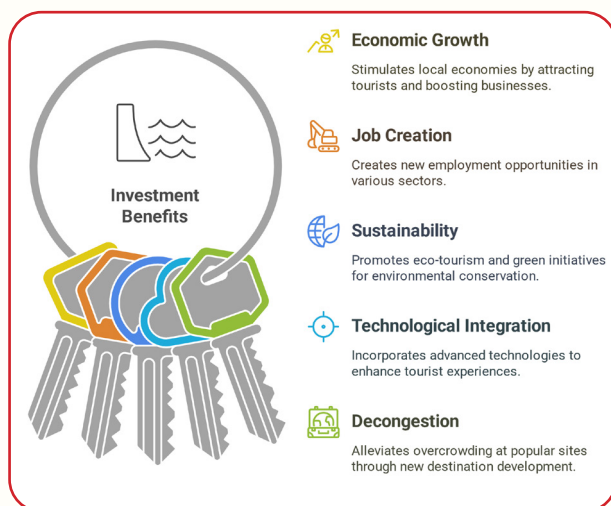
The Indian government has approved a Rs 3,295.76 crore investment for 40 major tourism projects across 23 states. This initiative aims to enhance India's tourism infrastructure, turning key destinations into global attractions, promoting sustainable tourism, and creating job opportunities.

Key Features of the Investment:

- **Scope:** The investment under the Special Assistance to States/Union Territories for Capital Investment (SASCI) scheme will modernize and upgrade tourist destinations across 23 states.
- **Projects:** Notable projects include Gandikota Fort, Pushkaram Ghat (Andhra Pradesh), Siang Adventure and Eco-Tourism (Arunachal Pradesh), Assam Zoo & Botanical Garden, Roerich Estate (Bengaluru), Umiam Lake (Shillong), Nathula Pass (Sikkim), Rishikesh Rafting Station, and Sindhurg Underwater Tourism (Maharashtra).

Benefits of the Investment:

- **Economic Growth:** The projects will stimulate local economies by attracting tourists, boosting businesses in hospitality, transportation, and retail.
- **Job Creation:** New employment opportunities will emerge in construction, tourism services, and infrastructure management.
- **Sustainability:** Several projects focus on eco-tourism and green initiatives to promote responsible travel and environmental conservation.
- **Technological Integration:** The government plans to incorporate advanced technologies such as digital ticketing and visitor tracking to improve management and enhance the tourist experience.
- **Decongestion:** By developing new destinations, the government aims to alleviate overcrowding at popular sites, offering a more balanced tourism distribution.



About Tourism sectors in India:

- India, with its diverse landscapes and rich cultural heritage, offers vast potential for tourism. The government has focused on developing spiritual tourism, with states like Uttar Pradesh, Uttarakhand, and West Bengal enhancing infrastructure for pilgrims.
- The tourism and hospitality industry is a key driver of India's economy, contributing significantly to foreign exchange. Tourism not only showcases India's history and culture but also fuels socioeconomic growth.

Key initiatives for tourism sector:

- In the 2024 interim Budget, Finance Minister Ms.

Nirmala Sitharaman allocated Rs. 2,449.62 crore (US\$ 294.8 million) to the tourism sector, marking a 44.7% increase from the previous fiscal year.

Key Initiatives:

- **Swadesh Darshan Scheme (SD 2.0):** The scheme, aimed at developing theme-based tourist circuits, has sanctioned 76 projects across India. The upgraded version, SD 2.0, focuses on comprehensive development and infrastructure enhancement.
- **Destination-Based Skill Development:** To boost local employment, the Ministry has trained 12,187 candidates at 145 destinations to improve tourism services and empower local communities.

Global Wage Report 2024-25

Why in News:

The International Labour Organization (ILO) released its Global Wage Report 2024-25, providing insights into global wage trends, wage inequality, and real wage growth. The report, which has been published annually since 2008, analyzes changes in wages and their distribution worldwide.

Major Highlights of the Report:

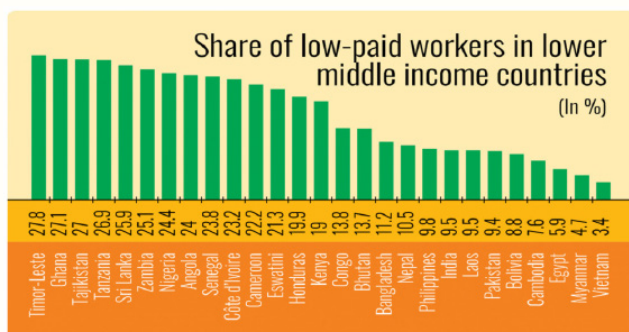
- **Decrease in Wage Inequality:**
 - » Wage inequality has decreased globally at an average rate of 11.1% per annum in about two-thirds of all countries since 2000.
 - » This trend indicates a positive shift towards reducing wage disparities across different nations.
- **Global Wage Growth:**
 - » Global wages have been growing faster than inflation in recent years.
 - » The real global wages grew by 1.8% in 2023, and projections suggest a 2.7% growth in 2024, marking the highest increase in over 15 years.
- **Regional Disparities:**
 - » Africa, Northern America, and parts of Europe have experienced stagnant or negative real wage growth.
 - » Meanwhile, emerging economies, particularly in Asia, have seen stronger wage growth compared to advanced economies.
- **Persistent Wage Inequality:**
 - » Despite the global decrease in wage inequality,

significant disparities remain.

- » Low-income countries continue to face much higher wage inequality, with 22% of workers in these regions earning less than half the median hourly wage.
- **Decoupling of Productivity and Wages:**
 - » In high-income countries, productivity increased by 29% from 1999 to 2024, yet real wages rose by only 15%, highlighting an inequitable distribution of productivity gains.
- **Gender Wage Gap:**
 - » Women, particularly in lower-middle-income countries, continue to face disproportionate wage inequality due to their overrepresentation in informal, precarious, and low-paid work.

Indian Scenario:

- Between 2008 and 2018, the share of low-paid wage workers (those earning less than 50% of the median hourly wage) in India decreased by 6.3% annually.
- Low-paid non-wage workers saw a decline of 12.7% annually over the same period.
- The combined rate of decline for both categories of workers in India was 11.1% per year.
- As of the latest data, 9.5% of wage workers in India earn less than 50% of the median wage, which is relatively low compared to its neighbors: Pakistan (9.4%), Nepal (10.5%), Bangladesh (11.2%), Bhutan (13.7%), and Sri Lanka (25.9%).



Recommendations:

- **Minimum Wage Adjustments:** These need to be more responsive to inflation, particularly to protect low-wage earners.
- **Worker Protections:** Strengthening regulations and policies to address precarious and insecure work is essential.
- **Gender Wage Gap:** Efforts must be made to close the gender wage gap by ensuring equal pay for

equal work.

About the ILO:

- The International Labour Organization (ILO) was established in 1919 as part of the Treaty of Versailles and became the first specialized UN agency in 1946.
- It currently has 187 member states and works to set labor standards, develop policies, and promote decent work for both men and women.
- The ILO is the only tripartite UN agency, bringing together governments, employers, and workers.
- Its headquarters are in Geneva, Switzerland.

Key Reports by ILO:

- World Employment and Social Outlook (WESO)
- Global Wage Report
- World Social Protection Report
- World Employment and Social Outlook for Youth
- World of Work Report

ASSOCHAM-EGROW study on MSME

Why in News:

The ASSOCHAM-EGROW study was conducted recently on MSME of India highlighting the challenges faced by Indian MSMEs (Micro, Small, and Medium Enterprises). The study suggests solutions to support their growth of MSMEs and enhance their role in India's development, particularly in the context of the nation's goal to become a developed country by 2047.

Challenges Faced by MSMEs:

- **Financial Challenges:** MSMEs struggle with access to transparent loan approval processes and face challenges due to high-interest rates and unused credit charges.
- **Compliance Challenges:** The complexity of GST and the burden of Tax Deducted at Source (TDS) make compliance difficult for many MSMEs.

Proposed Solutions:

- **Simplified GST:** A more streamlined GST system is recommended to ease the compliance burden for MSMEs.
- **Reduced TDS:** The study suggests reducing the TDS burden by limiting deductions to essential payments and introducing a unified tax system based on turnover for certain MSMEs.
- **Corporate Tax Reduction:** The corporate income

tax rate for MSMEs should be reduced from 25% to 15% to encourage business growth.

- **Financial Solutions:** Introduction of MSME-specific bonds and mutual funds, as well as the expansion of small finance banks to better serve rural and semi-urban areas, could improve financial liquidity.

Focus on MSME Development:

- **MSME-Specific Institutions:** The study advocates for the creation of MSME Universities in each state to provide comprehensive support, including R&D, finance, marketing, and training. This would help address the needs of MSMEs and boost innovation.
- **Skill Development:** The Skill India Mission should be upgraded with state-specific training programs. Enhanced linkages between MSMEs and higher education institutions are recommended to build a skilled workforce that can support MSME growth.
- **Infrastructure:** The development of integrated infrastructure townships with testing centers, financial institutions, and training hubs can support MSME clusters across India.

Defining MSMEs

- Micro, Small, and Medium Enterprises (MSMEs) are vital to India's economy, contributing significantly to employment, GDP, and exports.
- The classification of MSMEs is based on their investment in plant and machinery or equipment:
 - » **Micro Enterprises:** Investment up to ₹1 crore and turnover up to ₹5 crore.
 - » **Small Enterprises:** Investment between ₹1 crore and ₹10 crore and turnover up to ₹50 crore.
 - » **Medium Enterprises:** Investment between ₹10 crore and ₹50 crore and turnover up to ₹250 crore.

Importance of MSMEs in India's Economic Growth:

- MSMEs contribute about 30% of India's GDP, 45% of manufacturing output, and 46% of exports (as of FY 2024).
- With India's projected GDP growth from \$3.5 trillion to \$22.8 trillion by 2047, MSMEs are expected to play a significant role in this economic transformation, particularly by addressing the growing labor force and providing productive employment.

India's Trade Landscape Amidst Geopolitical Changes

Why in News:

A recent report by NITI Aayog, Trade Watch, highlights India's struggle to fully utilize the "China Plus One" strategy. This approach, adopted by many multinational companies, aims to reduce reliance on China by diversifying supply chains. The report also points to new opportunities for India due to global trade shifts, especially amid rising tensions between the United States and China.

Geopolitical Context:

- **US-China Trade Tensions**
 - » **US Restrictions:** The US has placed export bans on critical technologies like chip-making equipment and high-bandwidth memory chips to reduce China's technological growth.
 - » **China's Response:** China has retaliated by restricting the export of key materials like gallium and germanium, essential for high-tech manufacturing.
- **India's Economic Opportunity:** India is in a strong position to benefit from global trade diversions caused by these tensions. However, it needs to address its internal issues and improve its competitiveness to make the most of these opportunities. Currently, India's market share in many global sectors is less than 1%, leaving significant room for growth.

Challenges in the "China Plus One" Strategy

- **Competition from Other Countries:** Countries like Vietnam, Thailand, Malaysia, and Cambodia have been more successful in attracting global supply chains due to:
 - » **Lower Costs:** Cheaper labor and easier regulatory processes.
 - » **Proactive Free Trade Agreements (FTAs):** Signing more FTAs has helped these countries expand their trade reach.
- **India's Domestic Issues**
 - » India's labor and production costs are relatively high.
 - » Complex regulations make it harder for businesses to operate and attract investments.
- **Sector-Specific Challenges (Iron and Steel Industry)** India's iron and steel sector, which accounts for 23.5% of its exports to the EU, is

under pressure due to new EU policies:

- » **Carbon Border Adjustment Mechanism (CBAM):** The EU plans to impose 20–35% tariffs on imports like iron, steel, and aluminum based on their carbon emissions. This will increase costs and reduce demand for Indian exports.
- » **Compliance Costs:** Indian companies will need to invest in detailed carbon emission reports, further raising expenses.
- » **Declining Exports:** Indian iron and steel exports fell by 33% in Q1 FY25 due to weak domestic demand and oversupply from China.

Strategic Recommendations:

- **Improve Export Competitiveness**
 - » Diversify products and explore new international markets.
 - » Simplify regulations to reduce costs for exporters.
- **Revisit Tariff Policies**
 - » Avoid excessively high tariffs that can harm downstream industries and reduce global competitiveness.
- **Leverage Global Tensions**
 - » Use the ongoing US-China trade conflict to promote Indian industries, especially in sectors where the US imposes restrictions on China.
- **Focus on Free Trade Agreements**
 - » Actively pursue FTAs with major trade partners to increase market access.

Conclusion:

India is at a crucial point in its trade journey. While geopolitical changes offer opportunities to grow, India needs to address its domestic challenges to fully capitalize on them. By improving its competitiveness, simplifying policies, and engaging more actively in global trade, India can position itself as a strong player in the global economy.

FCNR(B) Deposits: Boosting Foreign Capital Inflows

Why in News:

To strengthen India's financial system and attract foreign capital inflows, the Reserve Bank of India (RBI) has increased the interest rate ceilings on Foreign Currency Non-Resident (Bank) [FCNR(B)] deposits.

About FCNR(B) Deposits:

- FCNR(B) deposits are foreign currency term deposits designed for Non-Resident Indians (NRIs) to open with Indian banks.
- The RBI has revised the interest rate ceilings for FCNR(B) deposits to enhance India's attractiveness as an investment destination.
- These changes are effective until March 31, 2025.

Features:

- Enable NRIs to deposit savings in foreign currencies, avoiding exchange rate risks.
- Tenure ranges from 1 year to 5 years.

Revised Interest Rate Ceilings:

Deposit Tenure	Previous Ceiling	New Ceiling
1 Year to Less Than 3 Years	Overnight ARR + 250 basis points (bps)	Overnight ARR + 400 bps
3 Years to 5 Years	Overnight ARR + 350 bps	Overnight ARR + 500 bps

Significance:

- The rate hike is aimed at increasing NRI investments in India through the following objectives:
 - » **Boost Foreign Capital Inflows:** Higher interest rates make FCNR(B) deposits more attractive for NRIs, encouraging increased foreign investments.
 - » **Strengthen the Indian Rupee:** Capital inflows help stabilize the rupee and enhance India's balance of payments.

Impact on Foreign Portfolio Investments (FPI)

- India has experienced robust Foreign Portfolio Investment (FPI) inflows:
- **2024-25 (April-December):**
 - » Net FPI inflows stood at US\$ 9.3 billion, primarily in the debt segment.
 - » Increased inflows from external commercial borrowings and non-resident deposits reflect rising investor confidence in India.

About Alternative Reference Rate (ARR)

- ARR is a benchmark interest rate used as a substitute for traditional rates like LIBOR (London Interbank Offered Rate).

In India it is:

- Based on overnight market repo rates, reflecting the short-term borrowing cost.

- Ensures deposit rates for FCNR(B) align with prevailing market conditions.

Conclusion:

The RBI's decision to raise interest rate ceilings on FCNR(B) deposits aligns with its broader strategy to attract foreign capital, stabilize the rupee, and bolster economic growth. By encouraging NRI participation, the move strengthens India's financial stability and supports long-term economic objectives.

Foreign Direct Investment in India

Why in News:

India has achieved a significant milestone with foreign direct investment (FDI) inflows crossing the \$1 trillion mark from April 2000 to September 2024. This milestone highlights India's growing appeal as a global investment hub and reflects its attractiveness to foreign investors, despite global challenges.

Key Trends in FDI Inflows

- FDI through Key Routes:**
 - » Mauritius and Singapore are the largest contributors, accounting for 49% of the total FDI. The U.S. follows with 10%. Other countries such as Netherlands, Japan, U.K., and UAE also contribute significantly.
- Sectoral Focus of FDI:**
 - » Services remains the largest sector for FDI, driven by industries like telecommunications, computer software, and trading.
 - » Manufacturing has seen a 69% increase in FDI over the last decade, particularly in automobiles, chemicals, and pharmaceuticals.
 - » Government initiatives like Production Linked Incentive (PLI) schemes have boosted manufacturing and attracted more FDI.

Growth in the Last Decade:

- India saw a 119% increase in FDI inflows between 2014 and 2024, amounting to \$667.4 billion, reflecting the country's sustained economic growth and attractive investment policies.

Government's Role in FDI Policy:

- The Indian government regularly reviews and adjusts FDI policies to ensure the country remains investor-friendly. Reforms in areas like mergers and acquisitions (M&A) are aimed at improving

the investment climate.



Challenges and Potential Risks:

- Geopolitical Risks:** Geopolitical tensions and shifting global trade policies can impact FDI inflows. For instance, changes in U.S. and Chinese economic policies may lead to fluctuations in investor confidence.
- Policy Changes in Key Markets:** Policy shifts in major FDI source countries could slow down inflows. However, India's continuous structural reforms are expected to mitigate such risks.
- Regulatory Environment:** While India has liberalized FDI policies, challenges like bureaucratic delays and complex regulations still hinder ease of doing business. Further reforms are needed to improve India's competitiveness.

Strategic Measures for Continued Growth

- Strengthening Structural Reforms:** India should continue implementing reforms in areas like taxation, labor laws, and M&A processes to simplify the investment environment and attract more FDI.
- Enhancing Infrastructure and Connectivity:** Focused investments in infrastructure, especially through public-private partnerships (PPPs), will further incentivize foreign investors and enhance the ease of doing business.
- Skilling the Workforce:** Developing a skilled workforce through government-backed initiatives and training programs will ensure that India remains competitive in global markets, particularly in the high-tech and manufacturing sectors.
- Fostering Digital Innovation:** Encouraging digital transformation through investments in technology and research will help create long-term value and maintain India's position as an attractive investment destination.

Key Terms:

- Foreign Direct Investment (FDI):** Foreign

Direct Investment (FDI) is a type of investment where a company or individual from one country establishes or acquires a business operation in another country. FDI promotes job creation, infrastructure development, and technological advancements.

- **Automatic and Government Approval Routes:** In India, most sectors allow FDI under the automatic route, where foreign investors only need to notify the Reserve Bank of India (RBI) after making an investment. In contrast, sectors like telecommunications and media require government approval before investment.

ILO's Social Dialogue Report

Why in News:

The International Labour Organisation (ILO) released its Social Dialogue Report on December 11, 2024, urging governments to uphold fundamental labor rights, especially freedom of association and the right to collective bargaining. The report emphasizes peak-level social dialogue (PLSD) as a key process for fostering fair and inclusive economic development.

Key Findings on Labour Rights and Social Dialogue:

- A major finding in the report was the decline in compliance with freedom of association and collective bargaining, dropping by 7% from 2015 to 2022. This decline was driven by violations of the fundamental rights of both employers and workers.
- Social dialogue, the report argues, is crucial for promoting economic development while ensuring social progress and creating inclusive transitions in low-carbon and digital economies. By strengthening social dialogue, countries can tackle economic challenges and promote social justice.

Importance of Peak-Level Social Dialogue (PLSD):

- PLSD brings together government representatives, employers' organizations, and workers' organizations to foster negotiation, consultation, and information exchange on labor, economic, and social policies. It includes:
 - » **Bipartite processes:** Involving only employers and workers' organizations for negotiations.
 - » **Tripartite processes:** Where the government

joins employers and workers in decision-making on policies.

- The report highlights that PLSD is crucial for effective participation in policy-making, particularly for underrepresented groups, ensuring that labor policies are inclusive and fair.

Recommendations for Strengthening Social Dialogue:

- **Uphold Fundamental Rights:** Governments must ensure respect for freedom of association and collective bargaining.
- **Equip Labour Administrations:** Governments should provide resources and technical capacities to labor administrations and social partners for effective PLSD participation.
- **Broaden Outreach:** National social dialogue institutions (NSDIs) should extend their reach to underrepresented groups, including gig workers.
- **Evaluate Social Dialogue Processes:** Regular, evidence-based evaluations should assess the effectiveness of PLSD in socio-economic decision-making.

Case Study: Rajasthan's Platform-Based Gig Workers Welfare Board

- The report highlights Rajasthan's introduction of the Platform-Based Gig Workers (Registration and Welfare) Bill, establishing the Rajasthan Platform-Based Gig Workers Welfare Board. The board consists of 12 members, including government representatives, gig workers, aggregators, and civil society, aimed at improving gig workers' welfare and rights.

About International Labour Organisation (ILO):

- The International Labour Organisation (ILO), established in 1919, is a UN agency that promotes social justice and fair labor practices. It sets international labor standards and advocates for workers' rights.
- The ILO brings together governments, employers, and workers to develop policies for decent work and economic progress. Its efforts focus on labor rights, social protection, and sustainable employment to foster a fairer, more inclusive global economy.

Conclusion:

The ILO Social Dialogue Report urges governments, employers, and workers to collaborate through

social dialogue to address global labor challenges. By respecting labor rights and ensuring inclusive, participatory decision-making, countries can achieve fair economic and social outcomes, making social dialogue a critical tool for promoting social justice and sustainable development.

Gross Non-Performing Assets (GNPA) ratio

Why in News:

The Reserve Bank of India (RBI) reported that the Gross NPA ratio of scheduled commercial banks (SCBs) declined to 2.5% at the end of September 2024, the lowest in over 13 years. This is an improvement compared to 2.7% at the end of March 2024.

What is the Gross NPA ratio and Net NPAs (NNPAs) ?

- The Gross Non-Performing Assets (GNPA) ratio refers to the percentage of total loans given by banks that are not being repaid as per the agreed terms. These loans are classified as non-performing because the borrowers are unable to repay the principal or interest for a specific period, usually 90 days or more.
- Net Non-Performing Assets (NNPAs) refer to the portion of non-performing assets after accounting for the provisions (reserves) that banks have set aside for bad loans. The NNPA ratio has decreased to 0.62% at the end of March 2024 and improved further to 0.57% by September 2024.

Reason behind improvement of Gross NPA ratio:

- The decline in the GNPA ratio is attributed to better asset quality, improved recoveries, and upgrades of loans that were previously classified as non-performing. Additionally, the overall balance sheet of commercial banks remained strong with sustained credit and deposit expansion.

Which sectors have the highest and lowest Gross NPA ratios?

- At the end of September 2024, the agricultural sector had the highest GNPA ratio at 6.2%, while the retail loan sector had the lowest at 1.2%. Education loans saw a significant reduction in their GNPA ratio from 5.8% in March 2023 to 2.7% by September 2024.



What is the Slippage Ratio?

- The slippage ratio measures new accretions to NPAs as a share of standard advances at the beginning of the year. It indicates how many loans are turning bad during a given period. The RBI report highlights an improvement in the slippage ratio during 2023-24.

How has the asset quality of banks improved?

- The asset quality of banks has improved as reflected in the decrease in GNPA and NNPA (Net NPA) ratios. The share of standard assets in total advances has increased, and the decline in non-standard advances (sub-standard, doubtful, and loss advances) indicates better asset management.
- Improvement in GNPA ratios was observed across various loan categories, especially in education loans, where the ratio fell significantly from 5.8% in March 2023 to 2.7% by September 2024. Similarly, retail loans like credit card receivables and consumer durables saw a reduction in NPAs.

Significance of the decline in NPAs:

- The decline in NPAs signifies that the banking sector's financial health is improving, leading to better profitability and stability. This also boosts the confidence of depositors and investors in the banking system.
- A lower GNPA ratio generally indicates better asset quality and more efficient banking operations. It suggests that banks are managing their credit risk well, leading to fewer defaults and reduced provisioning needs, which improves their financial strength.

Comparison of Gross NPA ratio over the years:

- Here's a comparison of the Gross NPA ratio for the last few years:

- » 2010-11: 2.35%
- » 2015-16: 7.48%
- » 2020-21: 7.33%
- » 2023-24: 2.7%
- » 2024-25 (Sep 2024): 2.5%

Household Consumption Expenditure Survey 2023-24

Why in News:

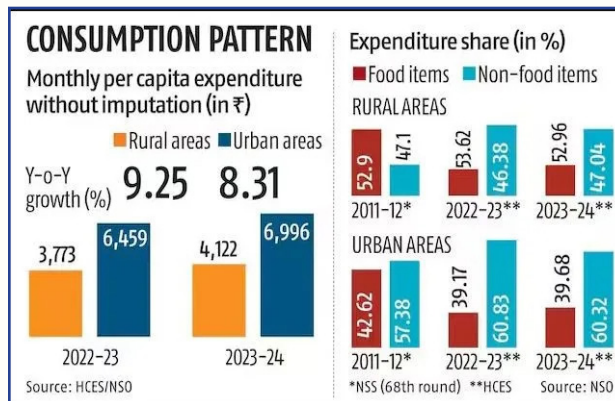
The Household Consumption Expenditure Survey (HCES) 2023-24 reveals significant trends in food expenditure and consumption patterns across India. After more than a decade of decline, food expenditure in Indian households has increased. In 2023-24, rural households allocated 47.04% of their expenditure to food, a rise from 46.38% the previous year, while urban households saw a similar uptick to 39.68% from 39.17%. This rise in food spending is attributed to the surge in food prices, which has impacted consumption across the country.

Impact of Rising Food Prices on Consumption:

- The increase in food expenditure suggests that higher food prices have significantly influenced household budgets. Rural areas, in particular, have seen a notable rise in consumption spending, which has helped narrow the gap with urban consumption patterns.
- This change reflects a shift in consumption behavior, which is crucial for policymakers and economists seeking to understand how rising prices affect different demographic segments across India.

Recent Trends in Rural and Urban Consumption Spending:

- In 2023-24, the average monthly per capita expenditure (MPCE) for rural households was Rs 4,122, marking a 9.3% increase from the previous year. Urban households, by contrast, had an average MPCE of Rs 6,996, reflecting a more modest increase of 8.3%.
- Interestingly, the growth rate in rural consumption spending outpaced urban areas, further closing the gap between rural and urban consumption levels.



Declining Consumption Inequality:

- Consumption inequality between rural and urban households has declined, as seen in the Gini coefficients for both areas. In 2023-24, the rural Gini coefficient dropped from 0.266 to 0.237, while the urban Gini coefficient decreased from 0.314 to 0.284.
- This decline indicates a reduction in inequality, suggesting that the economic divide between rural and urban households is narrowing, with rural consumption rising faster than urban consumption.

Changes in Food Expenditure Patterns:

- The share of expenditure on specific food items also shifted slightly in 2023-24. Both rural and urban households increased spending on cereals, eggs, fish, and meat.
- Notably, beverages, refreshments, and processed foods remained the highest expenditure categories, with rural households spending 9.84% and urban households spending 11.09% of their total consumption on these items. This reflects changing dietary patterns and preferences across both rural and urban populations.

Regional and Income Group Variations:

- Consumption spending varied significantly across income groups and regions. The bottom 5% in both rural and urban areas experienced substantial increases in spending (19.2% in rural, 18% in urban areas), while the top 5% saw decreases. Regionally, states like Maharashtra, Punjab, and Kerala exhibited higher-than-average spending, while states such as West Bengal, Bihar, and Uttar Pradesh had lower-than-average consumption spending. These regional disparities highlight the economic differences within the country.



Miscellaneous

Understanding India's 'One Nation, One Subscription' (ONOS) Scheme: Opportunities, Challenges and the Way Forward

One Nation, One Subscription (ONOS) scheme was recently launched by the Government of India on November 25, 2024. It is a significant initiative aimed at providing equitable access to scholarly journals across public institutions in India. With an allocation of ₹6,000 crore over three years (2025-2027), ONOS seeks to address the financial challenges faced by academic and research institutions in accessing international journals. While the scheme has the potential to enhance access to knowledge, it also raises questions about the sustainability of the subscription model and the need for a transition to more open systems of scholarly publishing.

Overview of ONOS:

The ONOS scheme was first proposed around 2018-2019 and gained traction due to the high subscription costs of scholarly journals. Under ONOS, the Indian government plans to negotiate collective access to scholarly resources, eliminating financial barriers to vital research access.

- ❖ **Objective:** ONOS aims to provide journal access to all public institutions, including universities and research bodies, regardless of financial capacity. This will make scholarly literature more accessible, democratizing knowledge for students, faculty, and researchers.
- ❖ **Budget:** A total of ₹6,000 crore has been earmarked for ONOS over three years (2025-2027). These funds will cover subscription fees for 30 major international journal publishers, covering fields like medicine, engineering, social sciences, and natural sciences.
- ❖ **Target Institutions:** The scheme targets public universities, research institutions, and government-funded academic bodies that often struggle to afford journal subscriptions. ONOS

aims to level the playing field, ensuring that quality research is accessible to all institutions.

**शिक्षा मंत्रालय
MINISTRY OF
EDUCATION**

एक नए एक सबस्क्रिप्शन

**ONE NATION
ONE SUBSCRIPTION**

- **Cabinet Approval:** Central Sector Scheme to provide nationwide access to scholarly research and journals
- **Budget:** ₹6,000 crore allocated for 2025, 2026, and 2027
- **Digital Access:** Fully digital process managed via a unified "One Nation One Subscription" portal
- **Target Beneficiaries:** Nearly 1.8 crore students, faculty, and researchers in 6,300 institutions, including HEIs and central R&D institutions
- **Coordination:** Managed by INFLIBNET, an autonomous UGC centre

The Global Shift Towards Open Access (OA):

The traditional subscription-based model of academic publishing has increasingly been challenged by Open Access (OA) publishing, which allows research articles to be freely accessible without subscription fees. ONOS must be evaluated within this global shift.

- ❖ **Growth of Open Access:** Over 53% of scientific research papers are now published via OA, according to Web of Science. This figure has risen significantly since 2018-2019, when ONOS was first conceptualized. OA models, prioritizing free access to research, have gained considerable support. This trend raises doubts about the continued financial viability of subscription-based models like ONOS.
- ❖ **Global Mandates for Open Access:** Research

funding bodies, such as the U.S. Office of Science and Technology Policy and Horizon Europe, now require publicly funded research to be openly accessible. These developments suggest that research worldwide will increasingly be freely available, challenging the necessity of investing in subscription-based systems like ONOS.

Challenges of the Subscription Model:

While ONOS promises to provide affordable access to academic resources, the subscription-based model comes with several challenges. These challenges complicate the scheme's long-term sustainability and effectiveness.

- ❖ **High Subscription Costs:** One concern is the high cost of journal subscriptions. Public institutions in India collectively spend approximately ₹1,500 crore annually on subscriptions, a figure that could increase under ONOS. If funds are directed toward subscription fees for international publishers, the financial burden on taxpayers will grow significantly, especially as many journals are transitioning to Open Access.
- ❖ **Exploitation of Researchers:** The subscription model exploits researchers, who contribute manuscripts, conduct peer reviews, and engage in editorial work without compensation. Publishers charge substantial fees for access to these works, generating profits from publicly funded research, raising ethical concerns about the fairness of the subscription system.
- ❖ **Copyright Concerns:** The subscription model also involves authors transferring copyright to publishers. This means authors relinquish control over their work, allowing publishers to profit from publicly funded research. Recent controversies, such as the deal between Taylor & Francis and Microsoft, which used journal content to train AI models without compensating authors, further highlight the ethical issues with this system.

The Case for Self-Reliant Publishing:

ONOS presents an opportunity for India to foster a more self-reliant publishing ecosystem. While the scheme can improve access to international journals, it should also encourage India to build its own publishing infrastructure, reducing dependency on external publishers.

- ❖ **Developing Indigenous Platforms:** India's large and growing research community can build indigenous publishing platforms. Reducing reliance

on international publishers will not only save costs but also provide Indian researchers with a global platform to showcase their work.

- ❖ **Affordable and Open Models:** The Indian government could invest in creating open-access repositories and platforms for Indian research. These platforms would make research more affordable and accessible while positioning India as a leader in OA publishing.
- ❖ **Elevating Indian Journals:** By investing in infrastructure, editorial processes, and global visibility for Indian journals, India can elevate its academic output. This would foster a thriving ecosystem of high-quality research and publications within India.

Addressing Copyright and Open Access:

ONOS could have a greater impact if it also addresses copyright issues, which plague the current scholarly publishing system. Protecting intellectual property and promoting OA publishing models should be integral to any initiative aiming to improve access to scholarly research.

- ❖ **Copyright Retention:** Researchers must retain the copyright to their work. Policies should ensure that researchers maintain control over their research, empowering the academic community and promoting equitable knowledge dissemination.
- ❖ **Green Open Access:** A model known as green OA, where authors self-archive their work in institutional repositories, could be encouraged within ONOS. This would allow researchers to share their work openly while protecting their intellectual property.

Digital Preservation and Long-Term Access:

As journals shift to digital publishing, ensuring long-term preservation of research is critical. The discontinuation of journals like *Heterocycles* highlights the risks of relying on commercial publishers for preserving scientific knowledge.

- ❖ **Challenges in Preservation:** Studies show that 28% of articles with Digital Object Identifiers (DOIs) are not preserved, risking the loss of valuable research. This underscores the need for strategies to ensure the long-term preservation of research.
- ❖ **Self-Archiving:** Encouraging authors to archive their work in institutional repositories can help mitigate the risks of losing important research. Such systems should be promoted alongside subscription models to ensure access to research

in the future.

The Way Forward

- ❖ **Prioritize Open Access:** India should move towards an open publishing model, such as green OA, where research is freely accessible as soon as it is published.
- ❖ **Support Indigenous Publishing:** India must build robust indigenous publishing systems to promote local research and reduce reliance on international publishers.
- ❖ **Protect Intellectual Property:** Policies should ensure that researchers retain control over their work, protecting their intellectual property while

promoting open access.

Conclusion:

The ONOS scheme represents a significant investment in academic publishing in India. However, to ensure long-term benefits, India must consider the broader shift towards open access and develop an independent, self-reliant publishing ecosystem. By addressing challenges related to copyright, digital preservation, and long-term sustainability, India can build a more equitable and efficient academic research system that benefits researchers and society.

Short Issues

PRAGATI Platform

Why in News:

India's PRAGATI (Pro-Active Governance and Timely Implementation) platform has been lauded by Oxford University as a transformative example of digital governance. The report, "From Gridlock to Growth: How Leadership Enables India's PRAGATI Ecosystem to Power Progress," emphasizes its success in driving infrastructure and social development while enhancing accountability and efficiency in governance.

About PRAGATI:

- Initiated in 2015, PRAGATI integrates advanced technology with governance to address bottlenecks, accelerate projects, and foster better coordination between central and state governments.
- It uses tools like video conferencing, real-time data, and drone feeds to facilitate timely decision-making and effective monitoring.

Objectives:

- Speed up project implementation.
- Encourage inter-agency collaboration.
- Strengthen accountability and governance.

Key Features:

- **Technology-Driven:** Utilizes real-time data and monitoring.
- **Direct Oversight:** Enables direct engagement between the Prime Minister and senior officials.
- **Streamlined Processes:** Removes administrative barriers for better coordination.



PM launched **PRAGATI** platform
Pro-Active Governance & Timely Implementation

- PM Modi **reviews & monitors** various schemes, grievances, state & central projects
- Directly interacts with Secretaries** of Centre & States through Video conferencing
- Resolves issues to **fast-track implementation and completion**

Economic Impact:

- PRAGATI has been instrumental in bolstering India's economic growth and resilience:
 - » **Multiplier Effect:** Every rupee spent on infrastructure projects under PRAGATI has resulted in GDP gains of 2.5 to 3.5 rupees, showcasing its crucial role in stimulating economic activity.
 - » **Economic Resilience:** Timely execution of projects has strengthened India's economic stability during global challenges.
 - » **Infrastructure Development:** Tackled issues such as land acquisition and inter-

ministerial coordination. Facilitated rapid progress in transportation, energy, and urban infrastructure projects.

Social and Environmental Impact:

- Beyond economic benefits, PRAGATI has made significant contributions to social development and environmental sustainability:
 - » **Social Development:** Improved access to essential services like roads, electricity, water, and railways. Focused on reducing regional disparities by prioritizing projects in underdeveloped areas.
 - » **Environmental Sustainability:** Advanced the adoption of green technologies and sustainable practices. Streamlined environmental clearances and incorporated eco-friendly measures in project planning.

A Model for Global Adoption:

- PRAGATI serves as a scalable and replicable framework for emerging economies, offering valuable insights into governance innovation:
 - » **Governance Innovation:** Combines technology and leadership to enhance efficiency, collaboration, and decision-making. Demonstrates how strategic investments in infrastructure can drive sustained growth.
 - » **Addressing Developmental Challenges:** Helps countries overcome bureaucratic inefficiencies and achieve sustainable development. Offers practical solutions to transition from middle-income to high-income status.

Conclusion:

PRAGATI exemplifies the potential of combining technology with governance to drive progress. Its success in expediting projects, fostering collaboration, and delivering results has made it a global model for effective governance. Recognized by Oxford University, PRAGATI continues to inspire nations seeking innovative approaches to sustainable development and inclusive growth.

Boilers Bill, 2024

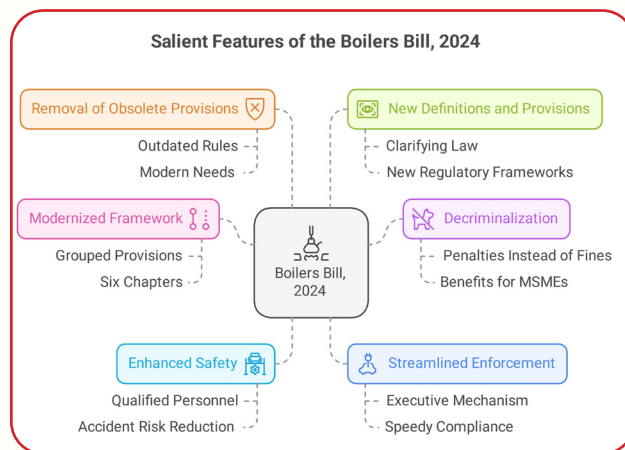
Why in News:

The Boilers Bill, 2024 was recently introduced in the Rajya Sabha by Shri Piyush Goyal, the Union Minister of Commerce and Industry. After detailed discussions,

the Bill was passed by the Rajya Sabha and is now set for consideration and passing in the Lok Sabha. The Bill aims to amend and update the Boilers Act, 1923, ensuring better boiler safety, modernizing the regulatory framework, and decriminalizing certain offenses.

Background of the Bill:

- The Boilers Act, 1923, regulates the safety of boilers and their operation. The Act was amended in 2007, but further reforms were considered necessary.
- The Boilers Bill, 2024 aims to align the law with modern safety practices and incorporates provisions from the Jan Vishwas (Amendment of Provisions) Act, 2023.



Salient Features of the Boilers Bill, 2024:

- **Modernized Framework:** The Bill is drafted using modern practices, making its provisions clearer. Similar provisions from the old Act are grouped into six chapters for easier understanding.
- **Decriminalization:** Three out of seven offenses have been decriminalized, converting fines for non-criminal offenses into penalties. This reduces legal burdens, benefiting industries, particularly MSMEs.
- **Enhanced Safety:** The Bill emphasizes safety by ensuring that only qualified and competent individuals carry out repairs, reducing the risk of accidents.
- **Streamlined Enforcement:** Enforcement is simplified by allowing penalties to be levied through an executive mechanism instead of through court proceedings, speeding up compliance.
- **Removal of Obsolete Provisions:** Outdated

provisions from the old Act have been removed, making the Bill more relevant and effective for modern needs.

- **New Definitions and Provisions:** The Bill introduces new definitions and provisions, clarifying the law. It also includes provisions for the repeal of outdated rules and the integration of new regulatory frameworks.

Benefits and Implications:

- **Ease of Doing Business (EoDB):** The Bill streamlines regulations, particularly benefiting MSMEs, by reducing bureaucratic delays and simplifying boiler safety compliance.
- **Enhanced Safety:** By ensuring that only qualified personnel handle repairs, the Bill prioritizes safety, minimizing risks.
- **Impact on Industry:** The Bill fosters a business-friendly environment, especially for industries using boilers. Shifting from court proceedings to executive penalties simplifies compliance and reduces delays.
- **Modernization and Clarity:** The Bill reorganizes provisions and introduces clearer definitions, helping all stakeholders understand and implement the law more effectively.

In conclusion, the Boilers Bill, 2024 updates boiler safety regulations, reduces bureaucratic hurdles, and creates a more business-friendly environment while ensuring enhanced safety standards.

80-Pillar Assembly Hall of the Mauryan Empire

Why in News:

The Archaeological Survey of India (ASI) has started uncovering part of the "80-pillared assembly hall" in Kumhrar, Patna. This is an important site connected to the Mauryan Empire's architectural legacy and is a major step in uncovering the remains of the ancient city of Pataliputra, the capital of the Mauryan rulers.

Historical Significance of Kumhrar:

- Kumhrar was part of Pataliputra, the capital of the Mauryan Empire during Emperor Ashoka's rule.
- The 80-pillared assembly hall is believed to have been a place where Emperor Ashoka held the third Buddhist council.
- The site reflects the architectural and cultural richness of the Mauryan Empire, which thrived

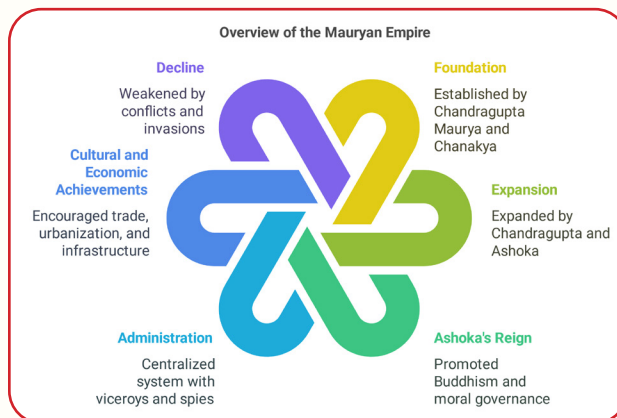
between 321 and 185 BCE.

Excavation History:

- Excavations began in the early 20th century.
- **First Excavation (1912-1915):** American archaeologist David Brainard Spooner uncovered one complete pillar and 80 pits that marked where other pillars stood.
- **Second Excavation (1961-1965):** The K.P. Jayaswal Research Institute found four more pillars.
- The largest pillar discovered is 4.6 meters long, showcasing the original grandeur of the hall.

Current Excavation Plans:

- ASI, led by Patna Circle Superintending Archaeologist Sujit Nayan, plans to uncover six or seven more pillars over the upcoming months.
- The excavation will carefully monitor the humidity and water levels with help from the Central Ground Water Board.
- The process will be gradual, and exposing all 80 pillars depends on the preservation of the site.



About the Mauryan Empire:

- **Foundation:** The Mauryan Empire was founded by Chandragupta Maurya in 321 BCE after overthrowing the Nanda Dynasty with his mentor Chanakya's help.
- **Expansion:** It was one of the largest empires in ancient India. Chandragupta expanded it across northern and central India, and his grandson Ashoka extended it to the Deccan and beyond.
- **Ashoka's Reign:** Ashoka (268–232 BCE) converted to Buddhism after the Kalinga War and promoted peace, non-violence, and moral governance.
- **Administration:** The empire had a centralized administration with provinces governed by viceroys and a network of spies.

- **Cultural and Economic Achievements:** The empire promoted trade, urbanization, and infrastructure, such as roads. Ashoka's Edicts emphasized moral teachings and religious tolerance.
- **Decline:** After Ashoka's death, the empire weakened due to internal conflicts, weak successors, and external invasions, collapsing by 185 BCE.



About the Third Buddhist Council:

- **Historical Context:** The Third Buddhist Council took place around 250 BCE in Pataliputra under Ashoka's support to resolve disputes within the Buddhist community.
- **Purpose:** It aimed to settle differences in the Buddhist sangha (community) and standardize the Buddhist scriptures (Tripitaka).
- **Preservation of Teachings:** This council helped form the Theravada and Mahayana schools and made the teachings of Buddhism more uniform.
- **Ashoka's Role:** Ashoka supported the spread of Buddhism throughout India, Southeast Asia, and Central Asia, sending monks on missionary journeys.
- **Outcome:** The council led to the formalization of Buddhist teachings and the spreading of Buddhism worldwide.

Revisiting Liquor Prohibition in Nagaland: The Hornbill Festival

Why in News:

The 25th edition of Nagaland's Hornbill Festival was recently celebrated. This festival is celebrated annually from December 1 to 10. However the festival

has reignited debates about its 35-year-old liquor prohibition law.

About The Hornbill Festival

- First organized in 2000, the festival aims to preserve and showcase the rich cultural heritage of Nagaland's 14 recognized tribes while promoting tourism.
- Named after the revered Hornbill bird, the festival acts as a unifying platform for the tribes and introduces their traditions to the world.

Key Highlights:

- **Cultural Performances:** Traditional dances, music, and parades.
- **Exhibitions:** Craft displays, herbal medicine stalls, and Naga Morungs.
- **Activities:** Wrestling competitions, food fairs, and other cultural performances.

The Great Hornbill:

- Hornbills (Bucerotidae) are tropical and subtropical birds found in Africa, Asia, and Melanesia. India is home to nine hornbill species, with the northeast boasting the highest diversity.



- **Key Features of the Great Hornbill:**
 - » Native to the Indian subcontinent and Southeast Asia.
 - » Known for its vibrant plumage and long, curved beak, often adorned with a casque.
 - » The state bird of Arunachal Pradesh and Kerala.
- **Conservation Concerns:**
 - » **Threats:** Habitat loss due to deforestation, and hunting for meat, fat, and ornamental body parts.
 - » **Status:** Listed as Vulnerable on the IUCN Red List.

Alcohol and the Hornbill Festival

- The Hornbill Festival features the sale of local rice

beer (Thutse) and, more recently, Indian-made Foreign Liquor (IMFL).

- » **Government's Decision:** IMFL was permitted at festival venues this year to enhance tourist experiences.
- » **Opposition:** The Nagaland Baptist Church Council (NBCC) opposed the move, emphasizing that tourists are drawn to Naga culture, not alcohol.

The Nagaland Liquor Total Prohibition (NLTP) Act, 1989

- Introduced with the Church's support, the NLTP Act bans the sale and consumption of alcohol but has faced significant challenges:
 - » **Ineffectiveness:** Rampant smuggling from Assam and widespread bootlegging.
 - » **Health Risks:** Spurious alcohol causes severe health issues.
 - » **Revenue Loss:** The ban results in significant excise revenue losses.
 - » **Narcotics Use:** Restrictions often push people toward drug abuse.

Conclusion:

The Hornbill Festival is not just a celebration of Naga heritage but also a reminder of the region's ecological and cultural treasures. Addressing the challenges posed by the NLTP Act and fostering dialogue between the government and stakeholders can help balance cultural preservation with modern reforms. By safeguarding its traditions and wildlife, Nagaland can continue to shine as a beacon of heritage and resilience.

Study on Nicobarese People

Why in News:

A new genetic study has been conducted by scientists from the CSIR-Centre for Cellular and Molecular Biology (CCMB) and other institutions on Nicobarese population of the Nicobar Islands. The study reveals that the Nicobarese population of the Nicobar Islands has significant ancestral ties to Austroasiatic populations across South and Southeast Asia.

Key Findings of the Study

- **Genetic Relationship:** The study confirmed that the Nicobarese share notable genetic similarities with other Austroasiatic-speaking populations, particularly the 'Htin Mal' community from

mainland Southeast Asia.

- **Settlement Timeline:** The study revised the timeline of the Nicobarese settlement in the Nicobar Islands. It suggests that their ancestors arrived around 5,000 years ago, a much more recent timeline than the previously believed period of around 11,700 years ago during the early Holocene. This suggests that the Nicobarese settled in the islands later, but their ancestors still had deep ancestral connections to Southeast Asian populations.

Implications of the Study

- **Migration Patterns:** The study provides insights into the migration and distribution of ancient populations across South and Southeast Asia. It shows the long-standing connections between the Nicobarese and other Austroasiatic-speaking populations in the region.
- **Shared Genetic Regions:** The common genetic affinities between the Nicobarese and other Southeast Asian linguistic groups reveal the complex history of human migration and settlement in the region.
- **Revised Understanding of Isolation:** The study challenges the notion that the Nicobarese are an isolated indigenous group. Instead, it places them within a broader genetic and linguistic framework shared with South and Southeast Asia.

WHAT CCMB-BHU STUDY UNVEILS

- Researchers made genetic analysis using DNA markers from mothers & fathers

- Study indicates Nicobarese share significant ancestral link with Austroasiatic people



- Findings suggest Nicobar islanders settled about 5k years ago, not 11,700 years ago

- Study highlights genetic affinity between Htin Mal community in Southeast Asia & Nicobarese people

Andaman and Nicobar Tribes

- The Andaman and Nicobar Islands are home to six indigenous tribes: the Andamanese, Onges, Jarawas, Sentinelese, Nicobarese, and Shompens. Of these, the Andamanese, Jarawas, Onges, and Sentinelese are classified as Particularly Vulnerable Tribal Groups (PVTGs), while the Nicobarese are not. These tribes belong to two different racial groups:

- » **Negrito Group:** The Andamanese, Jarawas, Onges, and Sentinelese, living in the Andaman Islands.
- » **Mongoloid Group:** The Nicobarese and Shompens, living in the Nicobar Islands.

Nicobarese Population and Location:

- **Population:** The Nicobarese community consists of approximately 25,000 people.
- **Location:** They reside in the Nicobar Islands, which lie south of the Andaman Islands in the eastern Indian Ocean. The Nicobar archipelago comprises seven large islands, including Car Nicobar and Great Nicobar, along with several smaller islands.

Conclusion:

This research enhances our understanding of the Nicobarese's migration history and their connections to wider Southeast Asia. By tracing these genetic links, we gain deeper insights into the complex history of human settlement in the region, and the Nicobarese are recognized as part of this broader genetic and linguistic continuum.

India Skills Report 2025

Why in News:

The India Skills Report 2025 reveals a significant improvement in employability among Indian graduates, with the rate rising to 54.81%, up from 51.25% the previous year. This reflects India's growing ability to equip its youth with the necessary skills for the global workforce.

Key findings from the Report:

- **Improved Employability:** Employability among Indian graduates has increased by 17% over the past decade, from 33% in 2014 to over 50% in 2025. This indicates India's commitment to developing a workforce that can thrive in a globalized economy.
- **Global Talent Mobility:** It was highlighted that India's growing capacity to supply skilled talent gives it a significant advantage in global talent mobility. The importance of enhancing skill training quality was a to further improve India's competitive edge in the international job market.
- **Certified Skill Programs:** It was emphasized that long-term, certified skill programs, especially those that integrate language training, will be key to improving employability and providing early work opportunities for India's youth.

- The report is based on data from over 6.5 lakh candidates who participated in the 2024 Global Employability Test and insights from more than 1,000 corporations across 15 industries.

Factors Driving Employability Growth:

- **Emerging Technologies:** The rise of Artificial Intelligence (AI), cloud computing, and automation is reshaping job roles and creating new employment opportunities. As businesses integrate these technologies, there is an increasing demand for skilled professionals.
- **Digital Nomadism and Hybrid Work:** The report highlights how digital nomadism and hybrid work models have enabled Indian talent to work globally, expanding employment opportunities for skilled professionals in international markets.

Economic Potential:

- **Contribution to Global Economy:** The rise in digital nomadism and India's increasing global participation could contribute \$500 billion to the global economy by 2030, positioning India at the heart of this transformation.
- **Sector-Specific Demand:** The report points to growing demand in sectors like construction and finance. The \$2.5 trillion construction industry needs engineers and planners, while the financial sector will require 400,000 professionals for roles in fintech and green finance by 2030.

About the Report:

- The India Skills Report 2025, is published by the talent assessment agency Wheebox in collaboration with the All India Council for Technical Education (AICTE), the Confederation of Indian Industry (CII), and the Association of Indian Universities (AIU).

World Malaria Report

Why in News:

According to the World Health Organization (WHO)'s latest World Malaria Report (2024), the battle against malaria has made notable advances, but challenges persist. Malaria remains a significant global health issue, particularly in tropical regions. Despite considerable progress, especially in the WHO South-East Asia Region, the disease still impacts millions, with the majority of cases and deaths occurring in the African Region.

Understanding Malaria:

- Malaria is caused by Plasmodium parasites, transmitted to humans through the bites of infected female Anopheles mosquitoes.
- It is not contagious and cannot spread from person to person. The most dangerous species are Plasmodium falciparum and Plasmodium vivax.
- The disease leads to symptoms like fever, chills, fatigue, and in severe cases, death.

Progress in the WHO South-East Asia Region:

- The South-East Asia Region accounts for 1.5% of the global malaria burden. In 2023, India reported around half of all malaria cases, followed by Indonesia, with nearly one-third of cases. Despite this, the region has made remarkable progress:
 - » Malaria deaths in the region have fallen by 82.9%, from 35,000 in 2000 to 6,000 in 2023.
 - » The region reduced malaria cases by 82.4%, from 22.8 million in 2000 to 4 million in 2023.
 - » India accounted for significant progress, with 93% fewer malaria cases and 17.7 million fewer cases reported in 2023 compared to 2000.
- **In the period 2022-2023, several countries achieved reductions in malaria cases:**
 - » Bangladesh (-9.2%), India (-9.6%), Indonesia (-5.7%), and Nepal (-58.3%) reported decreases, while Myanmar (+45.1%) and Thailand (+46.4%) saw increases.
 - » Timor-Leste and Bhutan reported zero indigenous malaria cases in 2023.

Global Malaria Situation:

- Globally, there were an estimated 263 million malaria cases and 597,000 deaths in 2023. This marks a rise of 11 million cases from 2022, but the death toll remained steady. Around 95% of deaths occurred in the WHO African Region, which faces severe challenges in providing essential healthcare services to prevent, detect, and treat malaria.
- Since 2000, 2.2 billion cases and 12.7 million deaths have been prevented. Despite this progress, malaria remains a serious global health threat, particularly for vulnerable populations, such as children and pregnant women.

Malaria-Free Certification and Challenges:

- As of November 2024, 44 countries and one territory have been certified malaria-free by WHO, with 25 malaria-endemic countries now reporting fewer than 10 cases annually—a significant

improvement from just 4 countries in 2000.

- However, funding remains a critical challenge. In 2023, total funding for malaria control was US\$ 4 billion, falling short of the US\$ 8.3 billion target. This shortfall has resulted in gaps in the availability of life-saving tools like insecticide-treated nets and medications.
- Challenges such as fragile health systems, drug resistance, and climate change also threaten malaria control efforts.

Supreme Court's initiative for the conservation of sacred groves

Why in News:

The Supreme Court has recently directed the Central Government to formulate a comprehensive policy for the conservation and management of sacred groves. This decision has underlined the importance of environmental sustainability and has taken an important step towards promoting environmental awareness in the society.

Importance of sacred groves:

- Sacred groves are forest areas that are given special importance religiously, culturally or traditionally. Their environmental importance is immense, because they:
 - » Preserve biodiversity.
 - » Prevent soil erosion and desertification.
 - » Balance the local climate.

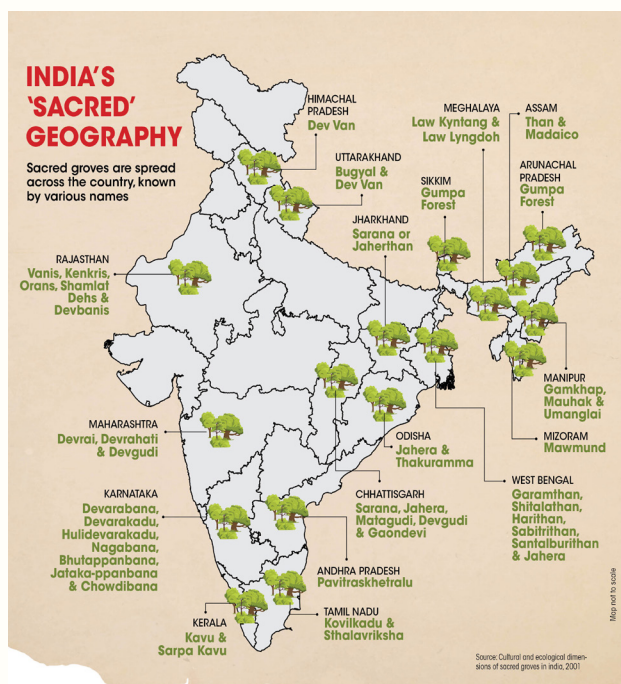
Supreme Court's decision:

- A bench of Justices B.R. Gavai, S.V. Bhatti and Sandeep Mehta said in its decision that the Central Government should:
 - » **Conduct a national survey:** Identify sacred groves, determine their location, area, and boundaries.
 - » **Ensure flexible boundaries:** So that these forests can grow and expand naturally.
 - » **Provide strict protection:** Their size should not be reduced due to activities like agriculture, human settlements and deforestation.

Reference to Bhagavad Gita

- In this decision, the Supreme Court underlined the importance of nature and consciousness by referring to the 20th verse of the 13th chapter of

the Bhagavad Gita. The verse states that nature is the source of all material things and consciousness makes us experience all happiness and sorrow.



Piplantri Model: An Inspiring Example

- The Supreme Court praised the Piplantri village in Rajasthan's Rajsamand district, where the tradition of planting 111 trees started on the birth of every daughter. The main benefits of this model are:
 - » **Environmental impact:** Planting of more than 40 lakh trees increased the water level by 800-900 feet and reduced the temperature by 3-4 degrees Celsius.
 - » **Economic improvement:** Trees like amla, aloe vera and bamboo created employment. Aloe vera processing and furniture manufacturing provided self-reliance to women.
 - » **Social change:** Female foeticide ended and education of girl child was ensured.

Way forward:

- **Policy support:** Central and state governments should provide financial assistance, technical guidance and policy support for models like Piplantri.
- **Public participation:** Local communities should be involved in the conservation of sacred groves.
- **Education and awareness:** Campaigns should be run to emphasize on environmental conservation

and gender equality.

- **Sustainable development:** Such models should be implemented across the country to encourage the overall development of society and environment.

Conclusion:

This decision of the Supreme Court is not only a milestone in the direction of environmental conservation, but it is also an effort to sensitize the society towards nature and gender equality. Implementation of efforts like the Piplantri model at the national level is extremely important for the overall development of society and environment.

Image of Active Hydrothermal Vent

Why in News:

In a groundbreaking achievement, Indian oceanographers have captured the first-ever image of an active hydrothermal vent located 4,500 meters below the surface of the Indian Ocean. This discovery is not only a significant scientific breakthrough but also has great potential for future mineral exploration, playing a key role in India's ambitious Rs 4,000-crore Deep Ocean Mission under the Ministry of Earth Sciences.

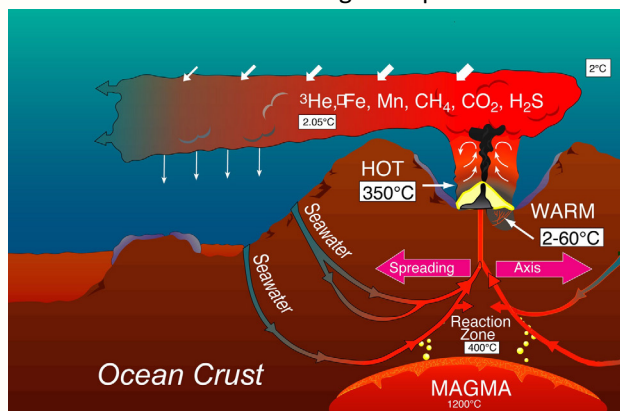
What is a hydrothermal vent and why is it important?

- A hydrothermal vent is an underwater spring where cold seawater meets hot magma beneath the ocean floor. This interaction results in superheated water that releases rich minerals and gases, forming plumes.
- These vents are important because they host unique ecosystems and are potential sources of economically valuable minerals. Their study could provide insights into sustainable mining practices and unique microbial life.

What is the significance?

- Imaging underwater hot springs, or hydrothermal vents, is crucial for India's Deep Ocean Mission as it enhances the understanding of mineral-rich deposits that can aid in economic development.
- These vents, which are rich in valuable minerals such as copper, zinc, and gold, could become a source of minerals for future exploration.
- The discovery of active hydrothermal vents

also supports scientific research into unique ecosystems that depend on these vents, helping both economic and biological exploration.



Role of hydrothermal vents in India's mineral exploration:

- Hydrothermal vents are believed to contain rich deposits of minerals and metals such as gold, silver, iron, cobalt, and nickel. These materials are crucial for industrial and technological advancements.
- The discovery and imaging of active hydrothermal vents enhance India's capacity to explore and potentially harness these resources, contributing to the success of the Deep Ocean Mission, which aims to focus on oceanic mineral exploration.

National Centre for Polar and Ocean Research (NCPOR) role:

- NCPOR, in collaboration with the National Institute of Ocean Technology (NIOT), led the high-resolution imaging campaign to identify and study active hydrothermal vents.
- Their research, conducted using an Automatic Underwater Vehicle (AUV), captured the first-ever image of an active hydrothermal vent, marking a milestone in India's ocean exploration efforts.

Potential biological implications:

- Hydrothermal vents host unique microbial life that relies on chemical processes, rather than sunlight, to survive. These organisms are essential for understanding life in extreme environments and could have broader implications for the study of biochemistry and potential life forms on other planets. The discovery of these ecosystems enhances India's research into the biology of deep-sea organisms.

Telecommunications Rules, 2024

Why in News:

On December 6, 2024, the Union Government notified the Telecommunications (Procedures and Safeguards for Lawful Interception of Messages) Rules, 2024. These rules, which replace Rule 419A of the Indian Telegraph Rules, 1951, empower certain enforcement and security agencies to intercept phone messages under specific conditions.

Key Provisions of the New Rules:

- The new rules allow specific agencies, including the Union Home Secretary and the Secretary to the State Government (Home Department), to issue orders for intercepting messages. Additionally, officers not below the rank of Joint Secretary can issue interception orders in "unavoidable circumstances," although these circumstances are not clearly defined.
- Interceptions can be authorized when deemed necessary under Section 20(2) of the Telecommunications Act, 2023. This includes situations where it is difficult for the competent authority to issue an order, particularly in remote areas or under operational constraints.

Key Differences from Previous Regulations:

- The new rules represent a shift from the previous regime. One of the major changes is the relaxation of the requirement that interceptions could only occur in "emergent cases." The updated rules now allow for more flexibility in issuing interception orders, especially in cases where the competent authority cannot issue the order directly.
- Another significant change is that only the head of the agency and the second senior-most officer at the State level are authorized to issue such orders, limiting the number of officers who can do so.
- Additionally, the new rules stipulate that intercepted messages cannot be used as evidence in court unless the order is confirmed within seven days. If the competent authority does not confirm the order within that timeframe, the interception will cease, and the data will be rendered unusable.

Retention period and Accountability Concerns:

- Under the new rules, records of intercepted messages must be destroyed every six months unless required for operational reasons or under

court orders. However, the rules have raised concerns about accountability.

- There are no provisions for punishing agencies that misuse interception powers, particularly during the seven-day window before confirmation by the competent authority.

Historical Context and Criticism of the rules:

- Before the introduction of these new rules, Rule 419A governed interceptions. In 1996, the Supreme Court in the People's Union for Civil Liberties (PUCL) vs Union of India case emphasized the importance of protecting privacy and required safeguards for any interception of messages.
- Critics of the new rules argue that they provide broader powers for interception, particularly by relaxing the "emergent case" condition, and raise concerns about the lack of checks to prevent misuse by authorized agencies.

Women-Led Startups in India

Why in News:

India has made remarkable progress in promoting women's participation in the startup ecosystem. According to the Ministry of Commerce and Industry, over 73,000 startups in India have at least one woman director, accounting for nearly half of the 157,000 startups officially recognized under the Startup India initiative. This milestone highlights the growing influence of women entrepreneurs who are driving innovation and contributing to the country's economic growth.

Key Government Initiatives Supporting Women Entrepreneurs:

- The Indian government has implemented several initiatives to support women-led startups, ensuring that women entrepreneurs have the resources to succeed. Here are some key programs:
 - » **Startup India Seed Fund Scheme (SISFS):** Launched in April 2021, the SISFS has approved ₹227.12 crore in funding for 1,278 women-led startups. This initiative is crucial for providing early-stage capital to women entrepreneurs, enabling them to scale their businesses and create innovative solutions.
 - » **Credit Guarantee Scheme for Startups (CGSS):** The CGSS, launched in April 2023, has guaranteed ₹24.6 crore in loans for women-

led startups. This program makes it easier for women entrepreneurs to access financing by providing credit guarantees to lenders, ensuring that women-led ventures can secure the necessary capital to grow.

- » **Fund of Funds for Startups (FFS):** The FFS reserves 10% of its total allocation for women-led startups. This initiative is designed to promote growth and innovation in startups, particularly those led by women, by providing financial backing to promising ventures.
- Additionally, the Startup India Programme, launched in 2016, offers several benefits to women entrepreneurs, including tax exemptions, streamlined processes, and funding support. The SAMRIDH scheme, introduced in 2021, further bolsters support by allocating ₹99 crore to assist 300 software product startups over four years.



Factors Driving the Growth of Startups in India

- **Technological Advancements:** Innovations in AI, blockchain, and IoT are being harnessed by startups to solve local and global challenges.
- **Government Support:** The Startup India initiative provides tax benefits, sector-specific policies, and streamlined processes, helping startups thrive.
- **Demographic Advantage:** With a youthful workforce and widespread access to affordable internet, cities like Bengaluru, Hyderabad, and Delhi-NCR have become innovation hubs.

Impact on the Economy:

Indian startups, including those led by women, have significantly impacted the economy:

- **Job Creation:** Startups have created 1.6 million jobs nationwide.
- **GDP Growth:** They contribute to economic growth through innovation and business activities.
- **Attracting Investments:** Indian startups continue to attract international VC and PE investments.
- **Rural Development:** Many startups, particularly social enterprises, have driven rural development, creating positive social change across India.

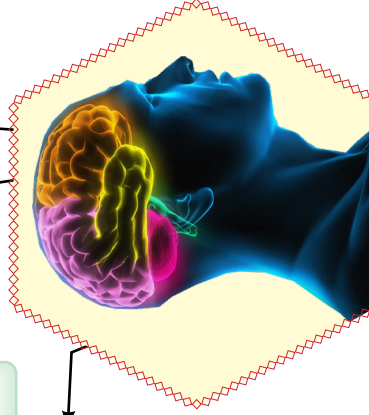
Context

Recently, Pankaj Chaudhary, the Minister of State for Finance, highlighted the Bharatmala Pariyojana's progress:

- Over 18,000 km of national highways constructed in Phase 1.
- India's national highway network expanded by 1.6 times since 2014, from 91,287 km to 1,46,195 km by November 2024.

Project Overview

- Launched:** Under the Ministry of Road Transport and Highways
- Phase 1 Announced:** 2017, with completion initially set for 2022 (delayed due to slow implementation and financial constraints)
- Integration with PM Gati-Shakti Plan:** Incorporates projects like Bharatmala, Sagarmala, dry/land ports to enhance connectivity and logistics efficiency
- Aim:** Improve road connectivity, freight and passenger movement, modernize ports, and promote coastal shipping



Bharatmala Pariyojana

Focus Areas

- Economic and National Corridors**
 - 26,000 km of economic corridors (including Golden Quadrilateral, North-South, East-West Corridors)
 - Improve freight traffic on roads
- Inter-State and Feeder Routes**
 - 8,000 km of inter-state corridors
 - 7,500 km of feeder routes to ensure first and last mile connectivity
- Border and International Connectivity**
 - Improve infrastructure at border roads, boosting trade with neighboring countries
- Coastal and Port Connectivity Roads**
 - Improve road links to coastal areas, encouraging tourism and industrial development
- Green-Field Expressways**
 - Develop expressways with high traffic capacity to alleviate choke points

Objectives

- Improve transportation infrastructure
- Enhance connectivity across India
- Promote economic growth
- Modernize ports and promote maritime trade

Phase 1 Milestone

- Completed: 18,000 km of national highways
- Target: 34,800 km in Phase 1
- National Highway Network Growth: Increased by 1.6 times (91,287 km to 1,46,195 km by Nov 2024)

Job Creation & Economic Growth

- Man-Days Employment in Phase 1:** Up to 10 crore
- Permanent Jobs Created:** Nearly 22 million
- Economic Growth:** Boosts trade, commerce, livelihoods

Key Features & Benefits

- Improved Connectivity:** Links 550 districts, increases connectivity to remote areas
- Boost to Freight Movement:** Focus on economic corridors, reduced logistics costs, improved supply chain
- Passenger Convenience:** Faster, more comfortable travel for commuters

Context

On December 21, 2024, the GST Council convened for a meeting where key decisions, particularly on health and life insurance taxation were on table. The meeting was chaired by Union Finance Minister Nirmala Sitharaman.

Key Decision on Insurance Taxation

- **Postponement:**
 - Decision on reducing taxes on health and life insurance deferred.
 - Need for further discussions cited.
 - Next meeting scheduled for January 2025.

GoM Recommendations:

- **Exemptions Proposed:**
 - » Term life insurance premiums.
 - » Health insurance premiums for senior citizens.
 - » Individual health insurance policies up to 5 lakh.
- **Taxation Retained:**
 - » Policies exceeding Rs. 5 lakh coverage (18% GST).

Other Major Proposals

- **"Sin Goods" Tax Hike:** Proposed increase from 28% to 35% on:
 - » Aerated beverages.
 - » Tobacco and cigarettes.
- **Luxury Goods:** Higher GST rates for apparel, footwear, and wristwatches.
- **GST Reductions:** Packaged drinking water and bicycles under certain conditions.
- **Final Decision Pending:** To be addressed in January 2025 GST Council meeting.

What is GST?

Definition:

- Indirect tax on goods and services consumed domestically.
- Based on the Value Added Tax (VAT) principle.
- Collected by businesses, remitted to the government.

Purpose:

- Replace multiple indirect taxes levied by central and state governments.

History and Evolution of GST in India

Initial Proposal:

- **2003:** Kelkar Task Force recommendation.
- **2006-07:** Proposed in the national budget.

Legislative Journey:

- **2014:** Constitution (122nd Amendment) Bill introduced.
- **2016:** Passed as Constitution (101st Amendment) Act.
- **2017:** GST implemented on July 1.

GST Council

Constitutional Framework for GST

Key Articles Introduced by 101st Amendment:

- **Article 246A:** Dual legislative powers (Parliament and States) on GST.
- **Article 269A:** Revenue distribution for inter-state trade.
- **Article 279A:** Formation of GST Council by Presidential order.

Components of GST

Types:

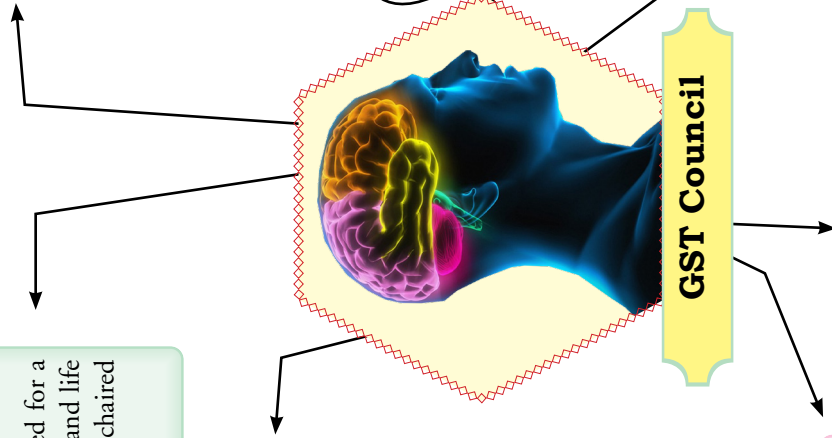
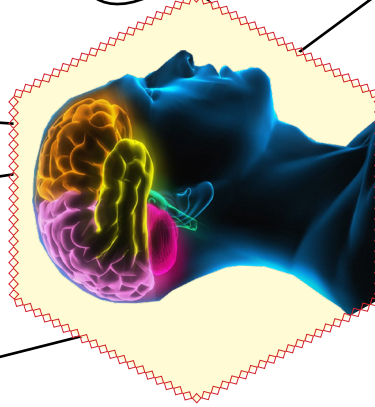
- **CGST:** Central Goods and Services Tax.
- **SGST:** State Goods and Services Tax.
- **UTGST:** Union Territories Goods and Services Tax.
- **IGST:** Integrated Goods and Services Tax.

Applicability:

- Intra-state transactions: CGST + SGST/UTGST.
- Inter-state transactions: IGST.

Rate Decisions:

- Mutually decided by the Centre and States.



Context

Renowned tabla maestro Zakir Hussain passed away due to Idiopathic Pulmonary Fibrosis (IPF), highlighting the severity of the disease.

What is IPF?

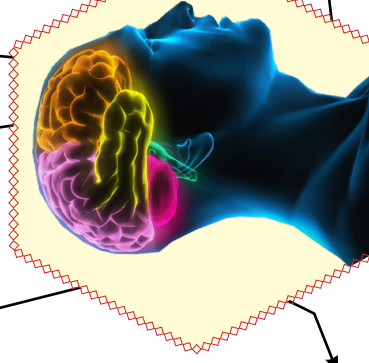
- A progressive lung disease causing scarring (fibrosis) of lung tissue.
- Affects the interstitium (tissue around air sacs).
- Leads to irreversible loss of lung function with symptoms like breathlessness and fatigue.

Causes

- **Idiopathic:** Exact cause remains unknown.
- **Possible Triggers:**
 - **Environmental Factors:** Dust, smoke, infections.
 - **Autoimmune Responses:** Abnormal tissue repair mechanisms.
 - **Abnormal Healing:** Overproduction of collagen causing scarring instead of tissue regeneration.

Other Factors:

- Genetic Predisposition.
- Long-term exposure to irritants (e.g., wood or metal particles).



Symptoms

Primary Symptoms:

- Persistent shortness of breath (dyspnea).
- Chronic dry cough.
- Fatigue and unintentional weight loss.

Complications:

- Pulmonary hypertension.
- Heart failure.
- Respiratory failure.

Treatment and Management

- **Medications:**
 - **Antifibrotic Drugs:** Pirfenidone and Nintedanib slow scarring progression.
 - **Oxygen Therapy:** Maintains oxygen levels.
 - **Pulmonary Rehabilitation:** Includes lung exercises.
- **Lung Transplantation:** For advanced cases.
- **Early Diagnosis:** A multidisciplinary approach is critical for better outcomes.

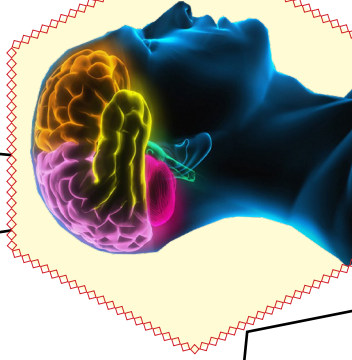
Idiopathic Pulmonary Fibrosis (IPF)

Significance

- IPF remains a life-altering condition with no cure. Raising awareness about its symptoms, causes, and available treatments is vital for improving patient outcomes and quality of life.

Context

Union Minister Nitin Gadkari inaugurated India's first bio-bitumen-based National Highway stretch on NH-44 in Mansar, Nagpur, Maharashtra. This project marks a significant milestone in sustainable infrastructure, utilizing lignin-based bio-bitumen technology developed by Praj Industries in collaboration with CSIR-CRRI, NHAI, and Oriental.



India's First Bio-Bitumen National Highway

About Lignin-Based Bio-Bitumen Technology

- **Key Material:** Lignin (by-product from plant biomass)
- **Environmental Impact:**
 - » Cuts greenhouse gas emissions by 70%
 - » Addresses agricultural waste management (e.g., stubble burning).
- **Economic Impact:** Reduces reliance on bitumen imports.

Other Key Technologies in Road Construction

- **Rejuvenate Technology**
 - Developed by CSIR-CRRI; uses a bio-based asphalt modifier
 - Designed for cold and high-altitude regions
 - Lowers production temperatures by 30°C to 40°C
 - Improves road durability and reduces emissions
- **Steel Slag Road Technology**
 - **Material Used:** Steel slag (by-product of steel production)
 - Improves:
 - » Road strength
 - » Drainage
 - Provides eco-friendly recycling of industrial waste

Benefits of the Highway

- **Environmental Benefits**
 - 70% Reduction in greenhouse gas emissions compared to fossil-based bitumen
 - Addresses bitumen scarcity
 - Reduces import dependency
- **Economic Benefits**
 - Utilizes agricultural waste (e.g., rice straw)
 - Creates revenue for bio-refineries and farmers
 - Saves Rs. 4,000-4,500 crore in foreign exchange
- **Infrastructure Benefits**
 - **40% Stronger Roads:** Better durability, reduced maintenance
 - Mitigates stubble-burning pollution
- **Sustainability and Self-Reliance**
 - Supports Aatmanirbhar Bharat
 - Promotes sustainable growth

About National Highway 44 (NH 44)

- **Length:** 4,112 km (India's longest north-south highway)
- **Route:** Srinagar (J&K) to Kanyakumari (Tamil Nadu)
- **States Covered:** Jammu & Kashmir, Punjab, Delhi, Uttar Pradesh, Madhya Pradesh, Maharashtra, Tamil Nadu
- **Sections Include:** Jammu–Srinagar Highway, Agra–Bombay Road
- **Recent Upgrades:** Delhi–Panipat section (2023)
- **Importance:** Critical for inter-state and national transportation

Context

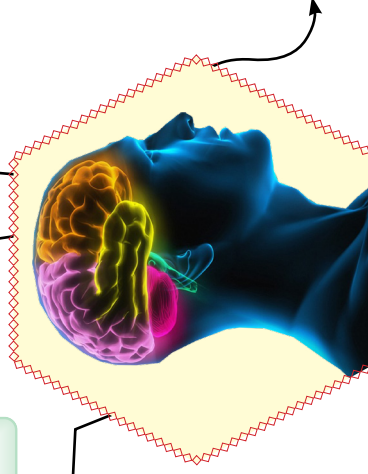
- **Launch:** The Union Government introduced the Jalvahak Scheme to promote the use of inland waterways for cargo transport.
- **Objective:** Reduce logistics costs, decongest road and rail networks, and unlock India's inland waterways' trade potential.

About Jalvahak Scheme

- **Inception:** Inaugurated for cargo movement on National Waterways Rs. 1 (Ganga), 2 (Brahmaputra), and 16 (Barak River).
- **Incentives:** Reimbursement: Up to 35% of operating costs for cargo owners transporting goods over 300 km.
 - » Validity: 3 years.
- **Pilot Implementation:**
 - » Three cargo vessels flagged off, carrying cement, gypsum, and coal.
 - » Fixed routes: Kolkata-Patna-Varanasi and Kolkata-Pandu (Guwahati).
- **Projected Impact:**
 - » Modal shift of 800 million tonnes-kilometres by 2027.
 - » Estimated Investment: 95.4 crore.

Significance

- The Jalvahak Scheme represents a paradigm shift in India's logistics, enhancing the potential of inland waterways to become a reliable, eco-friendly, and cost-effective mode of transport.



Jalvahak Scheme

Benefits

- **Trade Efficiency:** Offers a cost-effective alternative to road and rail transport, especially for long distances.
- **Cargo Volume Growth:** Increased from 18.07 million tonnes (2013-14) to 132.89 million tonnes (2023-24).
 - » **Targets:**
 - » 200 million tonnes by 2030.
 - » 500 million tonnes by 2047.
- **Environmental Sustainability:** Waterways reduce carbon emissions, providing a greener transport option.

Challenges

- **Underutilization:** Despite a 20,236 km network, freight potential remains underutilized compared to the US and China.
- **Infrastructure Deficiency:** Lack of adequate infrastructure to support large-scale operations.
- **Reliability Issues:** Ensuring reliable schedules for consistent cargo movement.

Inland Waterways Authority of India (IWAI)

- **Overview:** Established in 1986 under the Ministry of Ports, Shipping, and Waterways.
- **Functions:**
 - » Promoting Inland Water Transport (IWT): Encourages sustainable and cost-effective transport solutions.
 - » Regulation and Safety: Sets operational standards and ensures vessel safety.
 - » Collaboration: Partners with stakeholders like the Shipping Corporation of India to develop IWT.

Context

A murder convict serving a life sentence escaped from Yerawada open prison, Pune.

- **Concerns Raised:** Effectiveness, selection process, and security measures in open prisons.

What Are Open Prisons?

Definition:

- Minimal-security facilities focused on rehabilitation through self-discipline, trust, and community engagement.

History:

- Concept emerged in the 1950s.
- Maharashtra's first open prison: Yerawada (1956); Paithan (1968).

Current Status:

- Maharashtra: 19 open prisons.
- Rajasthan: Highest, with 31 open prisons.

Types (Model Prison Manual):

- Semi-Open Training Institutions.
- Open Training Institutions/Work Camps.
- Open Colonies.

Inmate Selection Process

- **Eligibility Criteria:** Good conduct during at least 5 years in central jail.
- **Committee Review:** Case histories reviewed and a list of eligible candidates prepared.
- **Selection Authority:** Finalized by a committee including the Inspector General of Prisons and senior officials.

Purpose and Role

- **Rehabilitation Goals:** Inmates work in agricultural or vocational settings.
 - » Promote responsibility, work skills, and social integration.
- **Trust and Reformation:** Designed to reduce re-offending by fostering trustworthiness.
- **Post-Incarceration Preparation:** Help inmates reintegrate into society.

Challenges and Criticisms

- **Security Risks:** Escapes highlight weaknesses in supervision.
- **Reliance on Self-Discipline:** Critics argue this may fail without adequate oversight.
- **Enforcement Gaps:** Lack of stringent rule enforcement poses risks.

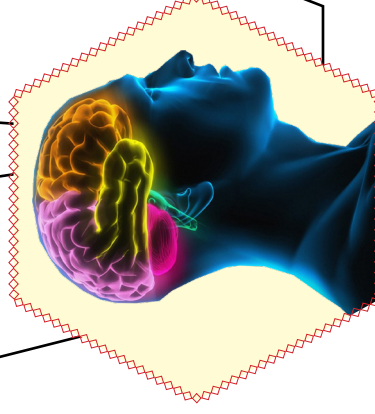
Open Prison

Legal Framework

- **Governance:** Under Prisons Act, 1894 and Prisoners Act, 1900.
- **State-Specific Rules:** Each state has its own guidelines for managing open prisons.

Significance

- Open prisons represent a rehabilitative approach to incarceration, balancing reduced security with trust-building. However, their effectiveness depends on careful inmate selection, robust oversight, and addressing security challenges.



Context

Madhya Pradesh is reintroducing cheetahs to the 2,500 sq. km Gandhi Sagar Wildlife Sanctuary. 6-8 cheetahs will be released into a 64 sq. km predator-proof enclosure, with 70 leopards relocated for their safety.

- » This is part of a broader effort to restore the cheetah population in India, where the species was declared extinct in 1952.

Project Cheetah Overview

Phase 1 (2022)

- **Goal:** Restore cheetah populations in India.
- **Location:** Kuno National Park, Madhya Pradesh.
- **Management:** National Tiger Conservation Authority (NTCA), Madhya Pradesh Forest Department, Wildlife Institute of India (WII).
- **Action:** Translocation of cheetahs from South Africa and Namibia to India.

Phase 2

- **Location:** Gandhi Sagar Wildlife Sanctuary (Madhya Pradesh).
- **Enhancement:** Expanding India's cheetah conservation efforts.

Gandhi Sagar Wildlife Sanctuary

- **Established:** 1974.
- **Location:** Spans Mandasaur and Neemuch districts, bordering Rajasthan.
- **Division:** Divided by the Chambal River with Gandhi Sagar Dam located within.

Ideal Habitat for Cheetahs

- **Similarity:** Resemblance to Kenya's Maasai Mara, home to large cheetah populations.
- **Suitability:** Ideal for reintroducing cheetahs.

African Cheetah (*Acinonyx jubatus jubatus*)

- **Location:** Found across sub-Saharan Africa, including Kenya, Tanzania, South Africa.
- **Population:** Around 10,000 individuals, classified as Vulnerable by IUCN.
- **Threats:** Habitat loss, poaching, human-wildlife conflict.

Physical Characteristics

- **Size:** Up to 84 inches in length, weighing 120-159 lbs.
- **Appearance:** Golden-brown coat with black spots.

Behavior and Speed

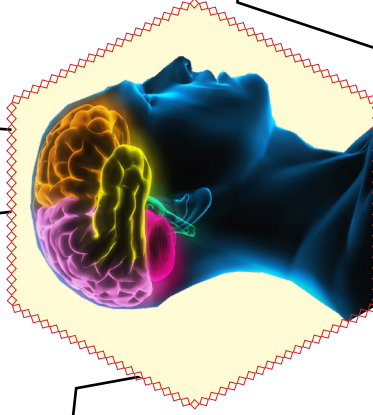
- **Renowned for speed:** Can reach 60-70 mph.
- Preys on herbivores like gazelles and antelope.

National Tiger Conservation Authority (NTCA)

- Statutory body under the Ministry of Environment, Forest, and Climate Change (MoEFCC).
- Established in 2005 following the Tiger Task Force's recommendations.
- Statutory authority status granted under Section 38L of the Wild Life (Protection) Amendment Act, 2006.

Composition:

- **Chairperson:** Minister in charge of MoEFCC.
- **Vice-Chairperson:** Minister of State in MoEFCC.
- **Members:**
 - » Three members of Parliament.
 - » Secretary (MoEFCC).
 - » Other designated members.



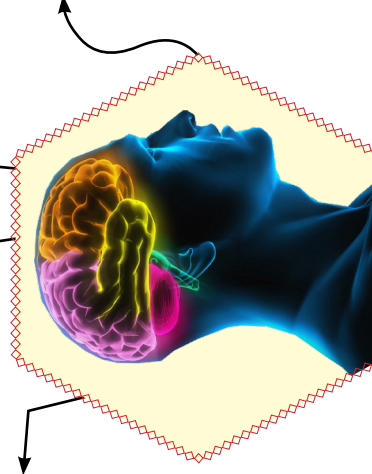
Project Cheetah

Context

- Broadband penetration in India is 48% short even after 25 years of terrestrial mobile services.
- Satellite Internet offers an alternative to bridge the connectivity gap, particularly in remote and underserved areas.

Satellite Internet: An Overview

- Definition:**
- Wireless internet beamed from satellites orbiting Earth.
 - Alternative to optical fiber or mobile networks.
- Key Features**
- Data aggregation occurs in space via satellites.
 - Requires a direct line of sight to satellites through an antenna.
 - Higher latency due to signal travel time between Earth and space.
 - More suitable for remote areas compared to urban regions with established infrastructure.



Satellite Internet and Broadband Connectivity in India

Benefits of Satellite Internet

- **Access in Remote Areas:** Connects inaccessible terrains (Himalayas, oceans).
- **High Scalability:** Rapid expansion compared to optical fiber infrastructure.
- **Disaster Resilience:** Connectivity during disasters disrupting terrestrial networks.

Challenges of Satellite Internet

- **Limited Coverage:** Requires clear line-of-sight to satellites, difficult in urban or obstructive terrains.
- **Latency Issues:** GEO satellites have higher latency, impacting real-time applications.
- **Affordability:** High equipment and operational costs limit adoption.
- **Space Debris:** Thousands of satellites raise debris concerns.

Legal Framework for Internet in India

Constitutional Provisions:

- **Article 19(2):** Freedom of speech and expression can be reasonably restricted for:
 - » Security of the state.
 - » Public order.

Statutory Provisions:

- **Telegraph Act, 1885:** Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017.
- **CrPC Section 144:** Preventive orders for public safety.
- **Anuradha Bhasin Case (2020):** Internet restrictions must be temporary, lawful, necessary, and proportionate.

Availability of Satellite Internet in India

- Limited use for disaster management, defense, scientific applications.
- **Improvements:**
 - » ISRO's high-throughput GEO satellites (14 Gbps speeds).
 - » Deployment of LEO constellations for reduced latency.
- **Global Players:**
 - » Starlink (Elon Musk)
 - » OneWeb (Airtel-backed)
 - » Project Kuiper (Amazon)
 - » JioSpaceFiber
 - » Telesat

Places in News

Lesotho

- India recently sent 1,000 metric tonnes of rice to Lesotho as part of its humanitarian assistance, highlighting its support for countries in need.
- Lesotho is a small, landlocked country completely surrounded by South Africa. It is located in both the Southern and Eastern Hemispheres. Known as the "Mountain Kingdom," it was originally inhabited by Khoisan-speaking hunter-gatherers.
- Lesotho became fully independent on October 4, 1966, with King Moshoeshoe II as the ruler.
- Lesotho is the only country in the world that lies entirely above 1,400 meters in elevation, with the highest point being Thabana Ntlenyana.
- The Orange River, which is one of Africa's longest rivers, flows through the country. It begins in the Lesotho Highlands as the Sinqu River. The capital of Lesotho is Maseru, and the country plays an important role in Southern Africa's social and political scene.



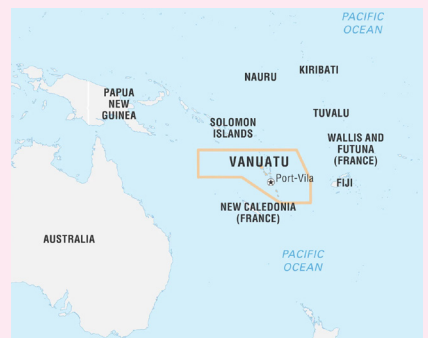
Moldova

- Moldova has recently signed the International Solar Alliance (ISA) Framework Agreement, reaffirming its commitment to advancing renewable energy. This move aligns with Moldova's broader efforts to transition to cleaner energy sources.
- Moldova, formerly known as Bessarabia, is a landlocked country situated in the northeastern part of the Balkan Peninsula, bordered by Ukraine to the east and Romania to the west.
- The Balkan Peninsula, located in southeastern Europe, derives its name from the Balkan mountain range. Moldova is primarily located between the Prut and Dniester rivers, with the Dniester River marking its eastern boundary.
- Geographically, Moldova lies to the east of the Carpathian Mountains, a significant range in southeastern Europe.
- A notable region within Moldova is Transnistria, a breakaway area located to the east of the Dniester River. This region is controlled by pro-Russian separatists and is home to Russian troops and a large arms depot.



Vanuatu

- Vanuatu, a small island nation in the South Pacific, recently experienced a powerful earthquake with a magnitude of 7.3, causing widespread damage and potential casualties.
- Located east of Australia, west of Fiji, and southeast of the Solomon Islands, Vanuatu comprises 13 principal volcanic islands and numerous smaller ones.
- The nation's capital, Port Vila, is situated on the island of Efate. Vanuatu is known for its dramatic geography, which includes active volcanoes such as Yasur, Manaro, and Garet.
- Historically, Vanuatu was inhabited by Melanesian peoples and later

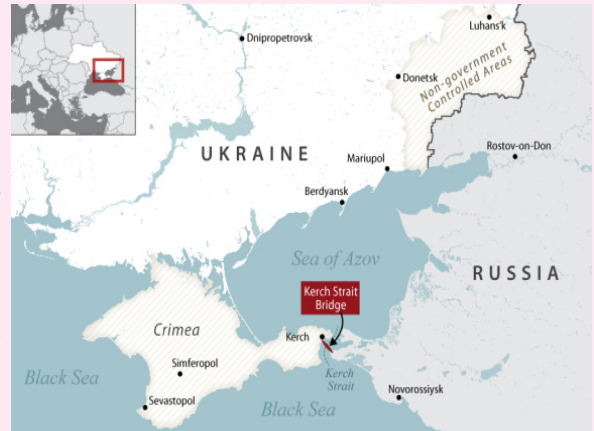


became a joint Anglo-French colony called the New Hebrides. The country gained independence in 1980, marking a significant moment in its history.

- Vanuatu is also highly vulnerable to the impacts of climate change, particularly rising sea levels, which are occurring at twice the global average rate. This makes Vanuatu the most at-risk country in the world according to the UN's World Risk Index, highlighting the urgent need for global climate action to protect its future.

Kerch Strait

- A Russian oil tanker recently split apart during a heavy storm, spilling thousands of tonnes of oil products into the Kerch Strait, a critical waterway in Eastern Europe.
- The strait, about 3 km long, 15 km wide, and 18 meters deep, connects the Black Sea to the Sea of Azov. It has historically been known as the Strait of Cimmerian Bosphorus by the Romans and the Cimmerian Strait by the Greeks.
- Geographically, the Kerch Strait separates the Kerch Peninsula (part of the Russian-occupied Crimean Peninsula) to the west and the Taman Peninsula in Russia to the east.
- The city of Kerch, located near the center of the strait on the Crimean side, is a major port and shipping hub. The Kerch Strait serves as an important global shipping route, allowing passage between the Sea of Azov and the Black Sea.
- The Kerch Strait Bridge, also known as the Crimean Bridge, connects mainland Russia with Crimea. Completed in 2018, it is the longest bridge in Europe, measuring 19 km, and has become a symbol of Russia's controversial annexation of Crimea in 2014.



Slovenia

- In a recent development, India and Slovenia announced a five-year plan to strengthen their cooperation in science and technology. This partnership aims to boost collaboration in various fields and reflects Slovenia's growing role in global innovation and development.
- Slovenia, with its capital in Ljubljana, is a small country in central Europe. It is bordered by Austria to the north, Hungary to the northeast, Croatia to the east, southeast, and south, and Italy to the west and southwest.
- Slovenia also has a coastline along the Gulf of Venice, which connects it to the Adriatic Sea.
- The geography of Slovenia is known for its beautiful landscapes, including karstic plateaus, steep ridges, and the stunning Alpine peaks.
- The highest point in Slovenia is Mount Triglav, which is a symbol of the country. Major rivers like the Sava, Drava, and Mura flow through Slovenia, contributing to its natural beauty and economy.



Power Packed News

AGNI WARRIOR (XAW-2024)

- The 13th edition of Joint Military Exercise AGNI WARRIOR (XAW-2024), a bilateral exercise between the Indian Army and the Singapore Armed Forces (SAF), concluded on 30th November 2024 at the Field Firing Ranges, Devlali, Maharashtra.
- The three-day exercise, held from 28th to 30th November, witnessed active participation by 182 personnel from the Singapore Artillery and 114 personnel from the Indian Army's Regiment of Artillery.
- The primary aim of XAW-2024 was to enhance mutual understanding of drills and procedures, fostering jointness as a multinational force under the United Nations Charter.
- The exercise focused on joint firepower planning, execution, and the application of advanced-generation artillery equipment.
- The exercise emphasized joint preparation, coordination, and the evolution of a shared interface between artillery procedures of the two nations.
- Both sides utilized niche technologies, exchanged best practices, and conducted extensive training on firepower planning, showcasing interoperability and deepening bilateral defense cooperation.

India Re-Elected to UN Peacebuilding Commission for 2025-2026

- India has been re-elected to the United Nations Peacebuilding Commission (PBC) for the 2025-2026 term. Since the PBC was established in December 2005, India has been an active member, contributing to global peace efforts.
- The PBC is an intergovernmental advisory body that supports countries affected by conflicts. It focuses on strengthening peace initiatives and providing advice to the UN General Assembly and Security Council on maintaining peace.
- Formed in 2005, the Commission promotes a unified and integrated approach to peacebuilding. Its goal is to ensure long-term stability by addressing the root causes of conflicts and preventing them from recurring.
- India's re-election highlights its commitment to international peacebuilding and multilateral cooperation. As a member, India will continue to work towards promoting sustainable peace and development in conflict-affected regions.

CINBAX

- The first edition of the Joint Table Top Exercise, CINBAX, between the Indian Army and the Cambodian Army commenced on December 1, 2024, at the Foreign Training Node, Pune.
- CINBAX focuses on establishing a Joint Training Task Force for Intelligence, Surveillance, and Reconnaissance and planning CT operations. This exercise, scheduled from December 1 to December 8, involves 20 personnel from each side and is aimed at planning joint counter-terrorism (CT) operations under Chapter VII of the United Nations Charter.
- Key aspects include discussions on hybrid warfare, cyber warfare, logistics, casualty management, and Humanitarian Assistance And Disaster Relief (HADR).
- Conducted in three phases, the exercise begins with participant orientation, followed by table-top discussions, and concludes with finalizing plans and summarizing outcomes.
- The exercise also promotes indigenous defence production by showcasing Indian-origin weapons and equipment, aligning with the 'Atmanirbharta' initiative.
- CINBAX aims to enhance trust, camaraderie, and operational interoperability between the Indian and Cambodian armies, strengthening their joint capabilities for UN peacekeeping missions.

Gujarat's Gharchola Receives Geographical Indication Tag

- The traditional wedding sari, Gharchola, from Gujarat has recently been granted a Geographical Indication (GI) tag by the Union government. The GI tag was officially presented to the Gharchola handicrafts during the "GI

and Beyond – Virasat Se Vikas Tak" programme in New Delhi.

- The Gharchola is a handwoven sari, typically worn during weddings, and is known for its intricate designs and vibrant colors.
- Gujarat has seen a notable surge in the recognition of its traditional products, with 27 products receiving GI tags in recent years, 23 of which are in the handicrafts sector.
- The GI recognition not only affirms the authenticity and uniqueness of Gharchola but also helps safeguard the cultural legacy of Gujarat.
- It is expected to enhance the global recognition of this traditional craft, providing a platform for its promotion and ensuring its continued preservation. The GI tag serves as a valuable tool in maintaining the craftsmanship and identity of Gujarat's artistic heritage.

Exercise HARIMAU SHAKTI

- The 4th edition of Exercise HARIMAU SHAKTI commenced at the Bentong camp in Pahang, Malaysia, marking an important step in strengthening India-Malaysia military ties.
- This joint military exercise, held annually on a rotational basis between India and Malaysia, aims to enhance the joint military capabilities of both nations in counter-insurgency operations within jungle terrain, in line with Chapter VII of the United Nations Mandate.
- This year, the Indian contingent, represented by a Battalion of the MAHAR Regiment, will engage in two phases of training. The first phase will focus on cross-training, with lectures, demonstrations, and jungle terrain drills.
- The second phase will involve simulated exercises, where both armies will practice operations like Anti-MT Ambush, Recce Patrols, and counter-terrorist attacks.
- The exercise, which alternates between India and Malaysia, provides a platform for both sides to exchange best practices, improve interoperability, and foster camaraderie. The last edition, conducted in November 2023 at Umroi Cantonment in India, contributed to deepening military cooperation, building mutual trust, and enhancing operational readiness in counter-insurgency scenarios.

Netumbo Nandi-Ndaitwah: First Female President of Namibia

- Netumbo Nandi-Ndaitwah has made history by becoming the first female president of Namibia. She won the 8th presidential election with over 57% of the vote, defeating her closest opponent, Panduleni Itula, who received 26%.
- Nandi-Ndaitwah, who is a member of the South West Africa People's Organization (SWAPO), has been a key figure in Namibian politics since the country's independence in 1990.
- SWAPO also won a majority in the National Assembly, securing 51 out of 96 seats. Nandi-Ndaitwah's election is an important milestone for women's political representation in Africa.
- As president, she will work on continuing Namibia's development and addressing key challenges like economic growth and social issues.

Uber Shikara: Asia's First Water Transport Service on Dal Lake

- Uber has launched Asia's first water transport service, Uber Shikara, in Dal Lake, Jammu and Kashmir. This new service allows tourists to book pre-arranged shikara rides through the Uber app.
- The service, which started with seven local shikara operators, offers a convenient and scenic way for visitors to explore the lake. The shikaras are based at Nehru Park, a popular island in the middle of Dal Lake, and can carry up to four passengers.
- Uber Shikara is similar to services the company has launched in other European cities like Venice, Italy. The service is expected to boost local tourism and provide a digital solution for a traditional form of transportation.

West Bengal Declared as a Top Heritage Tourism Destination by UNESCO

- UNESCO recently recognized West Bengal as a top destination for heritage tourism. This honor highlights the state's rich cultural and historical heritage. The recognition also acknowledges the growth of heritage tourism in the state, which has created jobs for thousands of young people.
- In response, the Chief Minister of West Bengal, Mamata Banerjee, noted that 2,489 homestays had been established in the state, with 65% of them located in North Bengal.
- The government is also focusing on infrastructure projects, including the construction of the Jagannath temple in Digha and a bridge over the Muriganga River at Ganga Sagar Island.
- The UNESCO recognition of West Bengal as a heritage tourism destination will help attract more international visitors and promote sustainable tourism that supports local communities.

Indian-Origin Artist Jasleen Kaur Wins Turner Prize 2024

- Indian-origin Scottish artist Jasleen Kaur has been awarded the prestigious Turner Prize 2024 for her exhibition "Alter Altar", which reflects themes of plurality, identity, and the personal-political connection.
- The jury praised her work for its thoughtful integration of personal and spiritual elements, describing it as a "visual and aural experience that suggests both solidarity and joy." Kaur's innovative use of materials and her ability to blend diverse voices were also highlighted.
- At 38, Kaur was the youngest nominee for this year's prize, which includes a cash award of £25,000. Born in Glasgow, her family's migrant history from Punjab significantly influences her art.
- "Alter Altar", first exhibited in Glasgow, features symbolic elements such as a vintage red Ford Escort adorned with a crocheted doily, family photographs, worship bells, and soundtracks from her upbringing, blending cultural nostalgia and contemporary art.
- Established in 1984, the Turner Prize is one of Britain's most prestigious art awards, celebrating groundbreaking contributions to contemporary art. Kaur joins past Indian-origin winner Anish Kapoor, who received the prize in 1991.

Raj Manchanda: A Legacy in Indian Squash

- Raj Manchanda, a renowned squash player, passed away at the age of 79 in New Delhi. Known for his exceptional skills, he was a six-time national champion, securing his first title at the age of 33. Dominating the national squash scene from 1977 to 1982, Manchanda also won 11 titles representing the army.
- A key figure in Indian squash, Manchanda led the Indian team to a silver medal at the 1981 Asian Team Championship in Karachi and a bronze medal at the 1984 Asian Championship in Jordan.
- His contributions to the sport were highly regarded, and in recognition of his achievements, he was honored with the prestigious Arjuna Award in 1983.
- Manchanda's legacy in Indian squash remains significant, both for his individual accomplishments and his role in elevating the sport within the country. His career continues to inspire future generations of squash players, cementing his position as one of the most prominent figures in Indian squash history.

Sentinel-1C Satellite Launch

- The third Copernicus Sentinel-1 satellite, Sentinel-1C, was successfully launched aboard a Vega-C rocket from Europe's Spaceport in French Guiana. This launch marks the return of the Italian-built Vega-C launcher, which had been grounded for two years after a failure during its first commercial mission.
- Sentinel-1C is designed to provide high-resolution radar images to monitor changes in Earth's environment. It supports many applications, including tracking maritime traffic, studying climate changes, and managing disasters.
- The satellite also contributes to advancing scientific research and adds new capabilities to the Copernicus program.
- Copernicus is the world's largest Earth observation system and consists of 12 Sentinel satellite families. It holds the

largest collection of radar data in the world, making it a vital resource for understanding our planet.

Launch of 'Anna Chakra' to Improve PDS Logistics

- Union Minister of Food and Public Distribution, Pralhad Joshi, has launched 'Anna Chakra' in New Delhi to make the Public Distribution System (PDS) supply chain more efficient. This tool was developed with support from the World Food Programme (WFP) and the Foundation for Innovation and Technology Transfer (FITT) at IIT-Delhi.
- 'Anna Chakra' aims to modernize the PDS logistics network by using route optimization, ensuring smooth and timely movement of food grains across the country. It will also help reduce transportation-related emissions, contributing to a lower carbon footprint and supporting environmental sustainability.
- Along with 'Anna Chakra,' a portal called the Subsidy Claim Application for the National Food Security Act (SCAN) has been launched. This portal automates the processes for releasing and settling food subsidies, improving transparency, efficiency, and accountability in the system.

Launch of PM e-VIDYA Channel 31

- The government has recently launched PM e-VIDYA Channel 31, a dedicated DTH channel for sign language. This initiative is part of India's broader efforts to enhance the welfare of differently-abled individuals, especially those with hearing impairments.
- The sign language has significant contribution in India with its presence in popular culture, such as dance, drama, and other cultural activities. Education for children with special needs is a priority in the National Education Policy 2020, which advocates for a more inclusive education system.
- Indian sign language has potential to create employment opportunities and set global standards. Collective efforts can aid popularize Channel 31, which is believed to unlock the immense potential of Divyangs.
- The initiative aims to contribute to a more inclusive and progressive society.

World Boxing forms new Asian body

- World Boxing formed a new Asian body, which will have seven key positions of the Boxing Federation of India (BFI) to develop and expand Asian boxing. Ajay Singh has been appointed as a board member. There will be representation of Indian officials in key commissions including the Secretary General of BFI.
- Lovlina Borgohain will be part of the Athletes Commission and Narendra Kumar Nirwan will serve on the Constitution Commission. D P Bhatt will be part of the newly formed Sports and Competition Commission.
- This new body will play a key role in the development of Asian boxing.

Bosnia's "Balkan Blues" recognized by UNESCO

- Sevdalinka, the traditional love song of Bosnia and Herzegovina, has been included in UNESCO's National List of Intangible Cultural Heritage.
- It is often called the "Balkan Blues". It is a melancholic urban love song from the 16th century that combines oral poetry of South Slavic people and Ottoman music.
- Sevdalinka performances use traditional instruments and have been shared through generations of performances.
- Imamovic's SevdahLab initiative has garnered support to include it on UNESCO's World Heritage List.

Good Practice Award for Asia and Pacific 2024

- India received the 'Good Practice Award for Asia and Pacific 2024' at the Asia-Pacific Forum in Riyadh, Saudi Arabia. This award recognizes India's efforts in adopting effective social security practices for its workforce.
- The Employees' Provident Fund Organization (EPFO), which manages social security programs for workers, was awarded five Certificates of Merit for its effective communication channels.

- The award highlights the reforms EPFO has introduced to improve its services, making them more accessible and transparent. These changes are part of India's efforts to provide better social security systems for its workers by making them more inclusive and responsive.
- Ashok Kumar Singh, the Director General of the Employees' State Insurance Corporation (ESIC), accepted the awards on behalf of EPFO.
- This recognition is an important milestone in India's commitment to improving workforce welfare and shows the country's leadership in promoting better social security practices in the Asia-Pacific region.

INS Tushil

- The Indian Navy recently commissioned INS Tushil, a multi-role stealth-guided missile frigate, at the Yantar Shipyard in Kaliningrad, Russia. The ceremony was presided over by Defence Minister Rajnath Singh, marking a significant milestone in Indo-Russian defence cooperation.
- INS Tushil is the seventh ship of the Talwar-class frigates and the first of the third batch ordered by the Indian Navy. Built by the Yantar Shipyard, the vessel underwent extensive sea trials, including weapon firings and achieving speeds exceeding 30 knots.
- Notably, it features an enhanced indigenous content of 26%, incorporating 33 systems from major Indian Original Equipment Manufacturers (OEMs).
- This commissioning underscores the deepening defence ties between India and Russia, reflecting a shared commitment to regional security and military modernization. The event also highlights the successful collaboration between the two nations in advancing naval capabilities.
- The commissioning of INS Tushil is a testament to the enduring strategic partnership between India and Russia, reinforcing their mutual interests in enhancing defence cooperation and regional stability.



Former Chilean President awarded Indira Gandhi Peace Prize

- The recently announced 2024 Indira Gandhi Peace Prize was awarded to Virginia Michelle Bachelet Jeria. Bachelet, who is the former President of Chile, has been given this honor for her global efforts for human rights.
- The announcement was made by an international jury, chaired by Shivshankar Menon (former National Security Adviser and External Affairs Minister).
- Bachelet has played many important roles in her career including serving as the founding head of UN Women, UN High Commissioner for Human Rights, serving twice as the first woman president of Chile (2006-2010 and 2014-2018) and has been a strong voice for the rights of the most vulnerable groups and gender equality in her country and around the world. Bachelet was born on September 29, 1951 in La Sistema, Santiago Province, Chile.
- The award is given for her invaluable contribution in the field of peace, human rights, and development.
- The Indira Gandhi Peace Prize is given annually to recognize individuals and organizations for their efforts to promote international peace, development and a new international economic order. The award consists of Rs 25 lakh in cash and a citation. The award was established in 1986 by the Indira Gandhi Memorial Trust.

Bangladesh won Under-19 Asia Cup

- Bangladesh won the Under-19 Asia Cup title by defeating India by 59 runs. In the final match held in Dubai, Bangladesh dismissed India for 139 runs in 36 overs. For the Indian team, captain Mohammad Aman scored the highest score of 26 runs, while Hardik Raj added 24 runs.
- The Under-19 Asia Cup is a tournament organized by the Asian Cricket Council (ACC), in which youth cricket teams of Asia play.
- The tournament was first held in Bangladesh in 1989. In 2007, it was renamed as ACC Under-19 Elite Cup.

RBI Governor

- Revenue Secretary Sanjay Malhotra has taken charge as the 26th Governor of the Reserve Bank of India (RBI). His tenure will be three years. He succeeds Shaktikanta Das, who completed his six-year tenure as RBI governor.
- Sanjay Malhotra played a key role in formulating tax policies, including direct and indirect taxes. He has held various key positions in sectors such as finance, taxation, power, information technology and mining.
- Shaktikanta Das' term ends on December 10, 2024. He took over as the 25th Governor of RBI on December 12, 2018 and his term was extended in 2021.

Kalaingar Handicrafts Scheme

- The Tamil Nadu government launched the Kalaingar Handicrafts Scheme to support artisans and craftsmen.
- Under this scheme, artisans will get credit support of up to Rs 3 lakh. A 25% subsidy (maximum Rs 50,000) will be provided on the loan. Beneficiaries will get the benefit of 5% interest subsidy.
- The minimum age of the beneficiary should be 35 years to apply.
- The scheme is designed to benefit people from all sections engaged in 25 types of occupations/crafts.
- The scheme aims to expand existing businesses and promote skill and enterprise development.
- In 2023, the central government launched the PM Vishwakarma Yojana, which provides comprehensive support to artisans of 18 occupations.

MuleHunter.AI

- The Reserve Bank of India (RBI) has launched MuleHunter.AI, an advanced AI tool to detect and identify mule bank accounts involved in money laundering and other illicit financial activities.
- This initiative has been launched by the Reserve Bank of India due to the rising cases of cybercrime in India (67.8%). MuleHunter.AI makes the identification process of mule accounts faster and accurate by using advanced machine learning algorithms, performing better than traditional rule-based systems.
- Mule accounts are bank accounts that criminals use to transact illicit funds. These accounts are often in the name of people from low income groups or individuals with limited technical knowledge. They are involved in illegal money laundering activity under deception or pressure. Being interconnected makes these accounts difficult to trace, increasing the risk of financial fraud and cybercrime.
- This tool has been developed in cooperation with financial institutions. In the traditional system, many mule accounts were missed due to high rate of false positives and slow process. RBIH has developed this AI solution by analyzing 19 specific behaviors associated with mule accounts.

Veteran Ecologist Madhav Gadgil Awarded 2024 UNEP 'Champion of the Earth'

- Madhav Gadgil, a distinguished ecologist, has been recognized as one of the six recipients of the United Nations Environment Programme's (UNEP) 2024 "Champions of the Earth" award. Honored in the "lifetime achievement" category, Gadgil's groundbreaking work has significantly influenced environmental conservation in India and beyond.
- With a scientific career spanning six decades, Gadgil is celebrated for his contributions to grassroots environmentalism, policy advocacy, and research.
- He chaired the Western Ghats Ecology Expert Panel in 2011, advocating for the protection of 75% of the ecologically sensitive Western Ghats, a biodiversity hotspot. Despite controversies and delays in implementation, his recommendations remain a benchmark in environmental policymaking.
- Gadgil's influential "Gadgil Report" highlighted the urgency of conserving the fragile Western Ghats amidst industrial and climate threats. His efforts have inspired community-driven conservation and shaped public opinion on sustainable development.
- Expressing optimism, Gadgil emphasized the power of collective action and communication in advancing

environmental causes. UNEP hailed him as a "people's scientist" for his enduring dedication to environmental protection and his advocacy for marginalized communities.

Indian Filmmaker Payal Kapadia Achieves Historic Recognition at the Golden Globe Awards

- Indian filmmaker Payal Kapadia has achieved a historic milestone by earning a nomination for Best Director – Motion Picture at the 82nd Golden Globe Awards for her film *All We Imagine as Light*.
- This marks the first time in 26 years that an Indian filmmaker has been recognized in this prestigious category, following Shekhar Kapur's nomination for *Elizabeth* in 1998. The film has also secured a nomination in the Best Non-English Language Motion Picture category, highlighting its global acclaim.
- *All We Imagine as Light* is an international co-production involving France, India, the Netherlands, Luxembourg, and Italy. The film gained global recognition after winning the Grand Prix at the 77th Cannes Film Festival earlier this year.
- Competing against prominent global entries like *Emilia Pérez* (France) and *The Girl with the Needle* (Poland), this recognition solidifies the growing global impact of Indian cinema.

About the Golden Globe:

- The Golden Globe Awards, presented by the Hollywood Foreign Press Association (HFPA), are among the most prestigious honors in the entertainment industry, recognizing excellence in film and television across various categories. Founded in 1944, the awards are regarded as a precursor to the Oscars, often spotlighting significant achievements in cinema and setting trends for the awards season.

Donald Trump Named TIME's Person of the Year for 2024

- Donald Trump, the U.S. President-elect, has been named TIME magazine's 'Person of the Year' for 2024.
- This is his second recognition by the magazine; he was also selected in 2016 when he first became President. Trump's return to power is historic as he will be the first convicted criminal to take the presidential oath.
- Other nominees included Kamala Harris, Elon Musk, Benjamin Netanyahu, and Kate, the Princess of Wales.
- In 2023, Taylor Swift was honored with the title, showing TIME's recognition of a wide range of contributors to society.

Indian Grandmaster Gukesh Becomes World Chess Champion

- Dommaraju Gukesh, an 18-year-old chess prodigy from India, has won the title of World Chess Champion.
- He defeated China's Ding Liren in the final of the 18th FIDE World Chess Championship held in Singapore.
- Gukesh scored 7.5 points in 14 matches, breaking Garry Kasparov's record of becoming champion at 22.
- This makes Gukesh the second Indian to achieve this feat, after Viswanathan Anand. His win is a proud moment for Indian chess on the global stage.

Saudi Arabia to Host 2034 FIFA World Cup

- Saudi Arabia will host the 2034 FIFA World Cup, becoming the second Middle Eastern nation to do so.
- The matches will take place in 15 stadiums across Riyadh, Jeddah, Al Khobar, Abha, and Neom.
- This decision follows the announcement that Spain, Portugal, and Morocco will co-host the 2030 edition.
- Saudi Arabia's hosting highlights its growing focus on global sports events.

World Ayurveda Congress Focuses on Digital Integration

- The World Ayurveda Congress and Ayurveda Expo started on December 12 in Dehradun.
- The theme, "Digital Health, Ayurvedic Approach," focuses on combining traditional Ayurveda with modern technologies like AI, augmented reality, and blockchain.

- Over 5,500 Indian and 350 international delegates are attending to discuss advancements in Ayurveda.
- The event includes an exhibition showcasing products and services from leading Ayurvedic institutions, highlighting how Ayurveda can play a role in modern healthcare.

India Finishes Sixth in Asian Women's Handball Championship

- India achieved its best-ever result in the Asian Women's Handball Championship by finishing sixth after a 30-41 loss to China on December 10. This was the first time India hosted the tournament, held in New Delhi.
- In the final, Japan beat defending champions South Korea 25-24 to win their second title. Kazakhstan secured the bronze medal by defeating Iran 28-22.
- The tournament's success shows the growing popularity of women's handball in Asia.

Delhi Government Launches Mukhyamantri Mahila Samman Scheme

- The Delhi Government has launched the Mukhyamantri Mahila Samman Scheme, which provides monthly financial assistance of 1,000 to eligible women. After Delhi elections, this amount will increase to 2,100.
- The scheme, announced in the 2024-25 budget with a 2,000 crore allocation, aims to benefit 38 lakh women.
- To qualify, applicants must be permanent Delhi residents, aged 18 or older, with an annual family income below 3 lakh. They should not be taxpayers or in government employment.
- This initiative seeks to improve women's financial and social well-being.

Ladakh to Host Khelo India Winter Games in January 2025

- Ladakh hosted the Khelo India Winter Games from January 23 to 27, 2025, focusing on ice events. Jammu & Kashmir will host snow events from February 22 to 25, 2025.
- These games will kick off the Khelo India season, followed by the Youth and Para Games in Bihar in April 2025.
- In 2024, the games included 700 athletes, 141 support staff, 113 technical officials and over 250 volunteers.
- Ladakh is hosting part of the event for the second consecutive year, highlighting its growing importance in winter sports.
- The games promote winter sports and boost tourism and sports infrastructure in the region.

India Achieves Total Fertility Rate Target of 2.0

- India has achieved a Total Fertility Rate (TFR) of 2.0, as per the National Family Health Survey-5 (2019-21).
- This meets the targets of the National Population Policy 2000 and the National Health Policy 2017. Government family planning programmes have been key to this achievement.
- Contraceptive options include condoms, oral pills, emergency contraception, intrauterine contraceptive devices (IUCDs), and sterilization. Additional options like the Antara injectable contraceptive and Chhaya pill have been introduced.
- The Mission Parivar Vikas initiative focuses on providing family planning services in high-priority and northeastern states.
- Financial incentives are offered for sterilization and post-pregnancy contraceptive measures, such as post-partum IUCDs and sterilization, are encouraged.
- To ensure quality, 16,586 health facilities have received National Quality Assurance Standards (NQAS) certification.
- These efforts aim to improve family health and ensure balanced population growth.

Railways (Amendment) Bill 2024 Passed by Lok Sabha

- The Lok Sabha has passed the Railways (Amendment) Bill 2024, which aims to enhance the powers and independence of the Railway Board.
- The bill amends the Railways Act of 1989, giving the central government the authority to decide the Railway

Board's composition, including the number of members, their qualifications, and service terms.

- This bill incorporates all provisions of the Indian Railway Board Act, 1905, into the Railways Act, 1989. Although the Railways Act of 1989 replaced the Indian Railways Act of 1890, the Railway Board has operated without statutory backing until now.
- The amendment strengthens Indian Railways' governance, improving efficiency and decision-making.

Desert Knight Exercise

- India, France, and the United Arab Emirates (UAE) have recently conducted the Desert Knight defence exercise.
- This trilateral exercise aims to enhance the combat skills and interoperability of the air forces of these three nations.
- It took place over the Arabian Sea, approximately 350-400 km southwest of Karachi.
- The Desert Knight exercise is part of a broader strategy by India to strengthen defence cooperation with like-minded countries in the Indo-Pacific region.
- By working closely with France and the UAE, India seeks to enhance its strategic partnerships and ensure a free, open, and inclusive Indo-Pacific.
- The exercise also serves to counterbalance China's growing influence in the region.

Sursa released by Indian Spice Research Institute

- The Indian Spice Research Institute has developed a new variety of ginger called Sursa.
- It is the first ginger variety in India specifically designed for use as a vegetable. This variety is non-spicy and is described as being more flavorful.
- Sursa has a yield potential of up to 24.33 tons per hectare.
- Its rhizomes are thick, with a white-yellow flesh. Sursa contains less fiber and has a dry recovery rate of approximately 21%. It is also ideal for producing dried ginger and can be grown in polybags.
- The Kerala State Varietal Release Committee has approved the cultivation of this variety in the state.
- With the development of Sursa, new opportunities are expected to emerge in ginger farming and related industries in India.

Elon Musk's Net Worth Crosses \$400 Billion

- Elon Musk's net worth has crossed \$400 billion, making him the first person to achieve this milestone.
- The primary driver of this growth is Tesla's stock price, which reached an all-time high of \$420.
- Musk's appointment as co-leader of the Government Efficiency Department (DOGE) earlier this year has contributed to a 70% rise in the company's share price.
- Musk is currently the owner of X and the founder of SpaceX. During Tesla's "We, Robot" program, Musk unveiled a self-driving taxi and demonstrated the humanoid robot Optimus.
- Elon Musk has co-founded seven businesses, including Tesla, SpaceX, and xAI. In 2022, Musk purchased Twitter for \$44 billion and rebranded it as X.

François Bayrou Appointed as France's New Prime Minister

- French President Emmanuel Macron has appointed François Bayrou as the new Prime Minister of France. This appointment comes following a no-confidence motion against the previous government.
- François Bayrou is the fourth Prime Minister to be appointed in 2024. His predecessor, Michel Barnier, served for only three months, making him the shortest-serving Prime Minister in French history.
- In January 2024, Gabriel Attal became the youngest Prime Minister of France.
- In France, the Prime Minister is the head of the government of the French Republic and holds the second-highest position after the President.
- With Bayrou's appointment, changes in the government's stability and policy direction are anticipated.

22nd Divya Kala Mela

- The Department of Empowerment of Persons with Disabilities is organised the 22nd Divya Kala Mela at India Gate from December 12 to 22, 2024.
- The event featured around 100 entrepreneurs and artisans with disabilities from 20 states and union territories.
- The Divya Kala Mela provides a platform for persons with disabilities to showcase their talent and sell their products.
- Exhibits at the fair included handicrafts, handlooms, embroidery, eco-friendly stationery, lifestyle products, and home decor items.
- Since its inception in 2022, the Divya Kala Mela has been successfully held in 21 cities across India.
- This event is a significant initiative aimed at integrating persons with disabilities into the mainstream and promoting their economic independence.

Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

- The UK recently joined the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). The agreement aims to reduce trade barriers, promote economic growth, and strengthen international ties.
- The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) is a trade agreement signed on 8 March 2018 in Santiago, Chile. The agreement was become effective on 30 December 2018. It became effective 60 days after ratification by 50% of the signatories or once six signatories ratified it.
- As of December 2024, the CPTPP consists of 12 member countries: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United Kingdom and Vietnam.



Collateral-Free Agricultural Loan

In a significant move to support the agricultural sector, the Reserve Bank of India (RBI) has increased the collateral-free loan limit for farmers from 1.6 lakh to 2 lakh. This change, effective from January 1, 2025, aims to address the rising input costs and inflation impacting farmers.

Key points:

- Banks are instructed to waive collateral and margin requirements for agricultural loans, including those for allied activities, up to 2 lakh per borrower.
- The revised guidelines focus on improving financial access for small and marginal farmers, who represent over 86% of the sector.
- The move is expected to enhance the uptake of Kisan Credit Card (KCC) loans, reducing borrowing costs and increasing investment in agricultural operations. It complements the Modified Interest Subvention Scheme, offering loans up to 3 lakh at a 4% interest rate, promoting financial inclusion and sustainable agricultural growth.

Russia to Introduce Visa-Free Travel for Indian Tourists in 2025

- Russia has announced the introduction of visa-free travel for Indian tourists. In June 2024, Russia and India signed a bilateral agreement under which Indian tourists will be able to travel to Russia without a visa. The main objective of this agreement is to promote tourism between Indian and Russian citizens, especially through the exchange of group tourism. Indian citizens are already allowed visa-free travel to 62 countries.
- In addition, Indian tourists can apply for e-visa for Russia from August 2023, which is processed in four days.
- The main attraction of Indian tourists to Russia is business and work. In 2023, more than 60,000 Indian citizens

visited Russia to visit Moscow. Russia has already launched a visa-free tourist exchange program for citizens of countries like China and Iran.

- This move will further strengthen cultural and business ties between the two countries.

New Survey Vessel 'INS Nirdeshak' inducted into Indian Navy

- The Indian Navy inducted its new survey vessel 'INS Nirdeshak' on December 18 at Visakhapatnam. The ship will collect important deep-sea information for the Indian Navy and help in the operations of warships and submarines.
- The survey vessel 'Nirdeshak' is built with more than 80 percent indigenous material and is equipped with state-of-the-art hydrographic and oceanographic survey equipment.
- The ship has been built by Kolkata-based Garden Reach Shipbuilders and Engineers (GRSE), and weighs 3800 tonnes.
- The ship is 110 meters long and has two diesel engines. The main purpose of this vessel is to conduct hydrographic surveys, provide assistance in navigation and support maritime operations.
- This ship will further enhance the deep-sea achievements of the Indian Navy and help deal with sea-related threats.

Former football player Mikhail Kavelashvili became the President of Georgia

- Former football player Mikhail Kavelashvili became the President of Georgia on 14 December 2024. He won an easy victory in the election, as he was the only candidate in the election. His victory was ensured by the influence of the Georgian Dream party, which controls the 300-seat electoral college of parliament.
- The Georgian Dream party retained its control over parliament in the election held in October 2024, although the opposition alleged that the election was rigged with the help of Moscow.
- Kavelashvili's victory indicates a pro-Russian stance in Georgia. The pro-Western Salome Zourabichvili was the president of Georgia from 2018 to 2024, whose term ended.
- Kavelashvili's electoral success has signaled political and diplomatic change in Georgia and his government could bring significant changes in Georgia's international relations and internal affairs.

India won the Women's Junior Asia Cup 2024 Hockey Championship

- India managed to win the title of the Women's Junior Asia Cup 2024 Hockey Championship in Muscat, Oman.
- The Indian team successfully defended its championship by defeating China 3-2 in the penalty shootout in the title match. After this spectacular victory, Hockey India announced a reward of Rs 2 lakh to each player and Rs 1 lakh to the support staff.
- India's Deepika Sehrawat won the top scorer title in the tournament with 12 goals.
- India also won their first Women's Hockey Junior Asia Cup title in 2023 when they defeated Republic of Korea. This time's victory is another big achievement for Indian women's hockey.

Preeti Lobana: Google's new Vice President and Country Manager for India

- Preeti Lobana has been appointed as the new Vice President and Country Manager of Google India.
- She will replace Sanjay Gupta, who will now serve as the President of the Asia Pacific Division.
- Lobana will play a key role in realizing Google's AI-driven vision, driving technological innovation and user benefits.
- Rom Dutta Chobey, who was the interim country manager, will work with Lobana and continue in her role as Managing Director of Digital Native Industries.

- Lobana is an alumnus of the Indian Institute of Management, Ahmedabad and has extensive experience in the field of technology. Her appointment will further strengthen Google India's operations.

Indore: Giving alms to beggars will be a crime from January 1

- The Indore district administration has announced that giving alms to beggars will be considered a crime from January 1, 2025. The administration aims to make the city beggar-free. This rule will apply to both child and elderly beggars.
- The administration believes that discouraging donations will break the cycle of begging. FIRs will be registered against those who give donations. The administration has also launched an awareness campaign about the disadvantages of giving alms. So far, more than 35 child beggars have been rescued and sent to government shelters.
- The city administration is working to provide other alternative means of livelihood to the beggars. This initiative is part of the aim to make Indore a clean, organised and self-reliant city.

India's first Geology Museum in Gwalior

- Vice President Jagdeep Dhankhar inaugurated India's first geology museum in Gwalior. This museum presents information on geology in an interesting and attractive manner.
- The museum displays the evolution of dinosaurs, the history of mankind and the geological evolution of the Earth. It has been prepared in collaboration with the National Science Museum Council and Gwalior Municipal Corporation.
- Pictures, artifacts and models related to geology are displayed in various galleries of the museum.
- This museum is also useful for educational and research purposes.

Kiran Mazumdar awarded Jamsetji Tata Award

- Kiran Mazumdar-Shaw, Chairperson of Biocon Group and a leading personality in the biotechnology sector, was awarded the "Jamsetji Tata Award" 2024.
- The award was given by the Indian Society for Quality (ISQ) for strengthening the bioscience movement in India under her leadership.
- The achievement was recognised during the ISQ Annual Conference held in Bengaluru.
- The award was given by Janak Kumar Mehta, President of TQM International. Kiran Mazumdar-Shaw was appreciated for her dedication and contribution to the health care and biopharma sector in India through scientific innovations.
- The Jamsetji Tata Award was instituted in 2004 and is given to business leaders who have made a profound impact on society. The award encourages excellence in leadership, innovation, and quality.
- This honor of Kiran Mazumdar-Shaw is not only a recognition of her personal efforts but also an inspiration to take India's biotechnology sector to new heights. It will inspire young scientists and innovators.

Russia develops Cancer Vaccine

- Russia has developed a cancer vaccine based on mRNA technology, which will be available in early 2025. This vaccine will be given free of cost to cancer patients and is aimed at destroying cancer cells.
- The mRNA vaccine trains the body's immune system to identify and eliminate tumors. It uses components of the patient's tumor so that the immune system can attack cancer cells.
- Pre-clinical testing of this vaccine has shown signs of its effectiveness. The tests found that it is able to inhibit tumor growth and control metastasis.
- However, this vaccine will not work in cancer prevention. It costs around 3 lakh rubles per dose. This initiative promotes the use of mRNA technology in cancer treatment, which is a revolutionary step in modern medicine.

"Encyclopedia of Forest" Tulsi Gowda passes away

- Tulsi Gowda, an icon of environmental conservation, passed away. She was known as the "Encyclopedia of Forest" and "Vriksha Devi".
- Tulsi Gowda planted more than 1 lakh trees in her life and helped in their conservation. She dedicated her efforts towards afforestation, preventing poaching and protecting wildlife.
- She was awarded the Padma Shri in 2021. Her exceptional knowledge was based on forests and ecology.
- Her contributions not only preserved the environment but also strengthened community and tiger conservation areas. Her demise is a great loss to the environmental conservation.

PM Modi Honored with Kuwait's Prestigious 'Order of Mubarak Al-Kabeer

- Prime Minister Narendra Modi was awarded Kuwait's highest honour 'Order of Mubarak Al-Kabeer', which is a symbol of his influential leadership and global recognition. This is his 20th international award, conferred on him by any country.
- The 'Order of Mubarak Al-Kabir' or 'Order of Mubarak the Great' is a prestigious knighthood honour of Kuwait, established in 1974. This honour is given in memory of Mubarak Al-Sabah, also known as Mubarak Al-Kabir. Mubarak Al-Kabir was the ruler of Kuwait from 1896 to 1915 and during his reign Kuwait gained more autonomy from the Ottoman Empire.
- This award is given to heads of state, foreign rulers and members of the royal family as a symbol of friendship. Earlier, this award has been given to leaders like Bill Clinton, Prince Charles and George Bush. PM Modi was given this honor for his role in strengthening India-Kuwait relations.

Arun Kapoor gets Royal Honour of Bhutan

- Renowned Indian educationist Arun Kapoor was honoured with 'Bura Marp' (red scarf) and 'Patang' (sword) by Bhutan's King Jigme Khesar Namgyal at the National Day celebrations on 17 December 2024.
- This honour is rarely given to non-Bhutanese citizens. Mr Kapoor was also conferred the title of 'Dasho', which is reserved for high officials.
- Mr Kapoor has established several educational institutions in India, Bhutan and Oman. He played an important role in establishing the Royal Academy School in Bhutan and developing the Bhutan Baccalaureate system. He was also awarded the 'Druk Thuksey' in 2019.
- Apart from his contributions to education and skill development in Bhutan, Mr Kapoor has founded the NGOs 'Ritinjali' and 'Pallavan School Network' in India. His honour underlines his important role in global education and India-Bhutan relations.

Masali: India's first solar border village

- Masali village in Banaskantha district of Gujarat has become India's first 100% solar powered border village. The village is located 40 km from the Pakistan border.
- Under the PM Surya Ghar Yojana, solar rooftops have been installed on 119 houses in the village, which generate more than 225 kW of electricity.
- This initiative is part of the Border Development Project, under which 11 border villages are planned to be solar energy dependent.
- Masali village has emerged as an example of energy independence. This initiative has set an excellent example of environmental conservation along with rural development.
- This move not only promotes clean energy but also strengthens self-reliance and security in the border areas. The project also aims to inspire other villages towards energy transition.

Delhi Government's Sanjivani Yojana

- The Delhi government has launched the 'Sanjeevani Yojana' to provide free healthcare to residents aged 60 years and above.
- Under the scheme, elderly patients will be given free medical services in government and private hospitals. If there is a delay in government facilities, patients will be referred to private hospitals at no cost.
- The scheme covers all medical expenses of the elderly, without any limit on their income. Along with this, the government has expanded the old age pension scheme to include 80,000 additional beneficiaries.
- The Sanjivani Yojana aims to provide affordable and accessible healthcare services to the elderly. The move not only ensures their well-being but also sets a benchmark in the field of social security and healthcare.

First tagging of Ganges River Dolphin

- The Ganges River Dolphin has been tagged for the first time in Assam, which is a historic step towards the conservation of this species. The initiative was taken by the Wildlife Institute of India (WII), Assam Forest Department and Aranyak Sangathan with the assistance of the National CAMPA Authority.
- The Ganges River Dolphin (*Platanista gangetica*) is the national aquatic animal of India. It is almost blind and hunts through echolocation. It is mainly found in the Ganges, Brahmaputra and Meghna river systems.
- The aim of this tagging process is to understand the migration, range and habitat use of dolphins. This information will help in their conservation and make Project Dolphin a success.
- The Ganges river dolphin is a symbol of the health of India's rivers. But, their numbers are constantly declining due to water pollution and poaching.
- This tagging initiative is a huge success in conserving dolphins and improving the ecosystem of the rivers.

Indian Under-19 team wins first T20 Asia Cup

- The Indian Under-19 women's cricket team created history by winning the first Under-19 ACC Women's T20 Asia Cup held in Kuala Lumpur, Malaysia. In the final match, India defeated Bangladesh by 41 runs.
- Batting first, India scored 117 runs for 7 wickets in the stipulated 20 overs. Gongdi Trisha scored 52 runs in 47 balls, which was the team's best score. In bowling, Ayushi Shukla took 3 wickets, while Sonam Yadav and Parunika Sisodia took 2-2 wickets each.
- The tournament started on December 15, in which the top 6 teams of the continent were participating. Under the captaincy of Nikki Prasad, the Indian team performed unbeatable and captured the title. This victory shows the growing influence of Indian women's cricket.

Justice Madan Lokur becomes President of UN Judicial Council

- Former Supreme Court judge Justice Madan B. Lokur has been appointed as the President of the United Nations Internal Justice Council. He will hold the position till 12 November 2028.
- The Council comprises Ms. Carmen Artigas of Uruguay, Ms. Rosalie Balkin of Australia, Mr. Stephan Brezina of Austria and Mr. Jay Pozzenell of the US. Justice Lokur retired from the Supreme Court on 30 December 2018.
- In 2019, he achieved a unique feat by being appointed as a non-resident judge in the Supreme Court of Fiji. The Council will benefit from his experience and expertise. This appointment reflects India's influence in the global justice system.

V. Ramasubramanian becomes NHRC Chairman

- Retired Supreme Court judge V. Ramasubramanian has been appointed as the chairman of the National Human Rights Commission (NHRC). He was appointed by President Draupadi Murmu. He took charge in the Supreme Court on 23 September 2019 and retired on 29 June 2023.
- This appointment came after the term of former Supreme Court judge Arun Kumar Mishra ended. The new

appointments will strengthen the protection of human rights and their enforcement.

No-Detention Policy Ended

- 16 states and 2 union territories, including Delhi, have abolished the 'No-Detention Policy' for classes 5 and 8. According to the new policy, if a student does not meet the promotion criteria, he will be given an opportunity to re-examine.
- If he fails in this too, he will be stopped in the same class. However, no child will be expelled from school until elementary education is completed.
- This policy has been implemented with the aim of improving the learning outcomes of students under the New Education Policy (NEP) 2020.

Shyam Benegal passes away

- Famous film director Shyam Benegal passed away at the age of 90. He has made National Award-winning films like 'Manthan', 'Bhumika', 'Junoon' and 'Netaji Subhash Chandra Bose: The Forgotten Hero'.
- In his career spanning six decades, he received several honours including the Dadasaheb Phalke Award, Padma Shri and Padma Bhushan. He was also a teacher and chairman of the Film and Television Institute of India. His films took Indian cinema to new heights.

Madhya Pradesh recognised as global destination

- Madhya Pradesh has been selected as one of the 'global destinations' for 2025 by the Wall Street Journal. The honour highlights the state's rich cultural heritage, unique wildlife and natural beauty.
- UNESCO World Heritage Sites like Khajuraho, Panna and Bandhavgarh played a key role in this recognition. This recognition establishes Madhya Pradesh as a world-class tourist destination.

India reaches 49th position in 'Network Readiness Index'

- India has jumped 11 places to 49th position in the Network Readiness Index (NRI) 2024. This index assesses the digital progress and technological innovations of countries.
- The US, Singapore and Finland are ranked first, second and third respectively. India's score is 53.63, which reflects improvements in digital infrastructure, artificial intelligence, and broadband services.
- In this report released by the Washington DC-based Portulans Institute, India has made significant progress in citizen engagement and use of technology. This achievement underlines India's move towards leading the digital revolution.

India to host ISSF Junior World Cup for the first time

- India will host the ISSF Junior World Cup in the second half of 2025. The event is the world's top junior shooting competition for rifle, pistol and shotgun.
- The National Rifle Association of India (NRAI) has been given the hosting rights for the event. This will be the ninth top-level shooting championship to be held in India.
- Earlier, India has hosted six ISSF competitions and continental championships. The Senior World Cup held in Bhopal in 2023 was also one of the successful events of India.
- This event strengthens the global confidence towards Indian shooting sports.

Foundation stone of Ken-Betwa river linking project laid

- Recently on 25 December, Prime Minister Modi laid the foundation stone of Ken-Betwa river linking project in

Khajuraho, Madhya Pradesh. This is the first initiative under the National River Linking Policy. The aim of the project is to provide drinking water to about 65 lakh people in 10 districts of Madhya Pradesh and 21 districts of Uttar Pradesh. The estimated cost on this is Rs 44,605 crore.

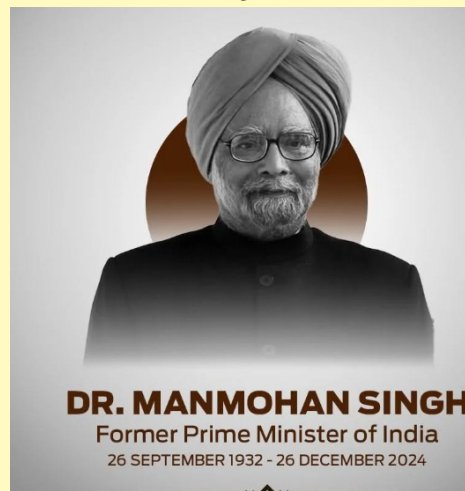
- This project will provide irrigation facilities to 7.18 lakh farmer families of about 2,000 villages and will produce 103 MW hydroelectricity and 27 MW solar power. A 77 meter high and 2.13 kilometer long Daudhan dam will be built in Panna Tiger Reserve on Ken River. 2,853 million cubic meters of water will be collected from the dam and transferred to Betwa River through a 221 kilometer long link canal.
- This project is a unique example of cooperation between the Central Government, Madhya Pradesh and Uttar Pradesh. Through this, irrigation and drinking water problems will be solved in both the states.

Loan agreement signed between Government of India and Asian Development Bank (ADB)

- Government of India and Asian Development Bank (ADB) signed a \$500 million loan agreement on 20 December 2024. This loan has been provided to support green and sustainable infrastructure projects under India's climate commitments. This amount will be given to India Infrastructure Finance Company Limited (IIFCL).
- On behalf of the Government of India, Juhi Mukherjee, Joint Secretary, Department of Economic Affairs, Ministry of Finance and ADB Country Director Mio Oka signed the agreement.
- The project will strengthen the institutional capacity of IIFCL to incorporate green and sustainable practices in infrastructure projects.
- Under the project, a sustainability unit, environmental sustainability framework and scoring system will be developed to evaluate the environmental sustainability of projects.
- This loan is an important step towards ensuring sustainable development from an environmental perspective and promoting the development of green infrastructure in India.

Former Prime Minister Dr. Manmohan Singh passed away

- Former Prime Minister Dr. Manmohan Singh passed away on the night of 26 December 2024. He was 92 years old. Manmohan Singh became the 14th Prime Minister of the country in 2004. He was the first Sikh and the fourth longest-serving Prime Minister of the country.
- Dr. Manmohan Singh was born on 26 September 1932 in village Gah, West Punjab, Punjab province of undivided India. In 1954, he received a master's degree in economics from Punjab University and in 1957, a first-class Tripos in economics from Cambridge University. In 1962, Oxford University awarded him the degree of D.Phil.
- Dr. Manmohan Singh started his career as a senior lecturer at Punjab University, Chandigarh and later became a professor of economics there. In 1969, he became a professor of international trade at the Delhi School of Economics, University of Delhi. After this, he took over the post of economic advisor in the Ministry of Foreign Trade in 1971. He was also the Governor of the Reserve Bank of India from 1982 to 1985.
- Dr. Manmohan Singh was the Finance Minister of India from 1991-1996, when he took major steps to improve the Indian economy. He devalued the rupee, reduced taxes and encouraged foreign investment. These reforms strengthened India's weak economy.
- Dr. Manmohan Singh was elected Prime Minister in 2004 after the Indian National Congress won the elections. His government focused on inclusive growth, poverty reduction and economic expansion. India's average GDP growth rate during his tenure was 7.7%.
- Dr. Singh received many prestigious awards, prominent among which are the Padma Vibhushan in 1987 and the Euromoney Award in 1993.



Bald Eagle: National Bird of America

- After 250 years, the Bald Eagle has been declared the official national bird of the United States. This glorious bird has been a symbol of American strength, courage, freedom, and immortality for years. The bald eagle is protected under the National Emblem Act of 1940, making it illegal to hunt or trade.
- The bird was once on the verge of extinction, but thanks to conservation efforts and laws, its numbers have increased significantly since 2009. The Bald Eagle is native to North America and is used as a national symbol in official documents, treaties, and commissions.
- The Bald Eagle has always held a special place in the hearts of the American public due to its historical and cultural significance. Its huge wingspan and fearless personality make it an icon of strength and freedom. Today, the Bald Eagle is not just a bird, but a symbol of American history and national identity.

SLINEX 24: India-Sri Lanka Naval Exercise

- The bilateral naval exercise SLINEX 24 between India and Sri Lanka was conducted in Visakhapatnam from 17 to 20 December 2024. The exercise was conducted in two phases: the port phase on 17-18 December and the sea phase on 19-20 December.
- The exercise was participated by INS Sumitra from India and SLNS Sayura from Sri Lanka. The opening ceremony was held on 17 December and the sea exercise began on 19 December.
- The SLINEX series was started in 2005 with the aim of promoting cooperation between the navies of the two countries. The exercise was conducted under the Eastern Naval Command, with an emphasis on strengthening naval combat skills, communication and synergy.
- The exercise reinforces the defense partnership of the two countries and contributes to regional maritime security. SLINEX 24 has further deepened the strategic relations between India and Sri Lanka.

100% piped water supply in Punjab

- Punjab has become the fifth state in India to achieve 100% piped water supply to rural households. This feat has been achieved under the Central Government's 'Har Ghar Jal' scheme. The scheme aims to ensure access to clean water in rural and remote areas.
- 15 major water projects are underway in Punjab at a cost of Rs 2174 crore to address the problem of water quality and scarcity. These will benefit about 25 lakh people and 4 lakh families in 1706 villages.
- With this, all the villages in the state have been declared Open Defecation Free (ODF). More than 10435 villages in Punjab have now become ODF Plus (desirable), while 1289 villages have achieved ODF Plus (ideal) status. This achievement is an important step towards improving sanitation and living standards in rural areas.

Chinese Astronauts Set New Record for Longest Spacewalk

- China's space program made history when two astronauts aboard the Tiangong space station completed the world's longest spacewalk.
- Shenzhou-19 crew members Cai Xuzhe and Song Lingdong spent nine hours outside the station performing extravehicular activities (EVA), surpassing the previous record of eight hours and 56 minutes held by U.S. astronauts James Voss and Susan Helms in 2001.
- The two astronauts arrived at the Tiangong space station in October 2024 and are set to return to Earth in April or May 2025. Earlier in 2024, the Shenzhou-18 crew set China's previous EVA record at eight hours and 23 minutes.
- This achievement demonstrates China's growing capabilities in space exploration, showcasing its leadership in conducting long-duration space missions. By setting this record, China is contributing valuable data to the global scientific community and continuing to push the boundaries of human space exploration.

One Liners

1.	Jimmy Carter, the 39th President of the United States, passed away at the age of 100 in December 2024. He was known for his post-presidential humanitarian efforts and the founding of the Carter Center.
2.	Sevda linka, a traditional genre of Bosnian folk music, was added to UNESCO's National Inventory of Intangible Cultural Heritage in December 2024, recognizing its cultural significance.
3.	The 18th edition of the Battalion Level Joint Military Exercise Surya Kiran was held in Saljhandi, Nepal, from Dec 31, 2024, to Jan 13, 2025, focusing on jungle warfare tactics between India and Nepal.
4.	Koneru Humpy, the Indian chess grandmaster, won the Women's Rapid World Chess Championship in December 2024, showcasing her exceptional skills in rapid chess.
5.	In 2023-24, the rural-urban gap in per capita consumption expenditure in India stood at 70%, highlighting the disparity in economic conditions between rural and urban areas.
6.	Aisake Valu Eke was elected as the new Prime Minister of Tonga.
7.	Arunish Chawla was appointed as the new Revenue Secretary in the Ministry of Finance, overseeing crucial aspects of tax and revenue administration in India.
8.	M.T. Vasudevan Nair, an Indian literary and cinematic legend, passed away on December 25, 2024. His works have made significant contributions to Malayalam literature and Indian cinema.
9.	Prime Minister Modi was conferred with the Order of Mubarak Al Kabeer, Kuwait's highest honor, recognizing his contributions to strengthening bilateral relations between India and Kuwait.
10.	IISER Pune developed a new hybrid aerogel that is used in gold extraction, providing a more efficient and eco-friendly method to extract the precious metal from ores.
11.	Assam conducted India's first dolphin tagging initiative, aimed at monitoring the endangered river dolphin population and promoting their conservation in the state.
12.	Masali, a border village in Gujarat, became India's first solar-powered village, utilizing solar energy to meet the village's power needs in an environmentally sustainable way.
13.	Pt. Swapan Choudhary, a prominent classical musician, received the prestigious National Tansen Samman in 2023 for his outstanding contributions to Indian classical music.
14.	The Kailash Mansarovar Yatra, a sacred pilgrimage, is set to resume between India and China, facilitating spiritual journeys to the revered site in the Himalayas.
15.	Dr. Shankar Prasad Sharma was reappointed as Nepal's Ambassador to India, strengthening diplomatic ties between the two neighboring countries.
16.	The short neck clam (<i>Paphia malabarica</i>) was reintroduced into Ashtamudi Lake in Kerala as part of a conservation initiative aimed at restoring the lake's biodiversity and aquatic ecosystems.
17.	Karnataka's legislative assembly recently passed the Groundwater (Amendment) Bill, aimed at improving groundwater management and addressing water scarcity in the state.
18.	CHARAK, a health initiative was launched by the National Chemical Laboratory (NCL), which provides free healthcare services to underserved communities, particularly in rural areas.
19.	The naval exercise SLINEX-24 was conducted at Visakhapatnam. It is a joint naval training exercise between India and Sri Lanka to strengthen maritime security and enhance defense cooperation.
20.	The Union Sports Minister launched Fit India Cycling Tuesdays to encourage cycling and promote fitness, aiming to make physical activity a part of daily life for Indians.

21. The United Kingdom became the 12th member of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), a trade pact aimed at boosting trade and investment across the Pacific region.
22. The prestigious Sword of Honour was conferred upon the Ayodhya Ram temple project, recognizing its significance as a national symbol of India's spiritual and cultural heritage.
23. Sanjay Marathe, a renowned classical singer and harmonium artist, passed away recently. He was widely respected for his contributions to the classical music world, particularly in Indian classical music..
24. The Jalvahak scheme was introduced to promote cargo movement via inland waterways, aiming to reduce congestion on roadways and railways while promoting an eco-friendly alternative for transporting goods.
25. Switzerland suspended the Most-Favored-Nation (MFN) Clause in its tax treaty with India, altering the provisions of the agreement to address concerns related to international tax policy.
26. D Gukesh became the youngest world chess champion in 2024, a significant achievement that highlights his exceptional talent and the growing prominence of Indian chess.
27. The marbled duck was spotted at Sultanpur National Park on December 8, 2024. This rare bird sighting is significant for birdwatchers and conservationists as the species is becoming increasingly endangered.
28. The World Ayurveda Congress and Arogya Expo 2024 began in Dehradun, bringing together practitioners, researchers, and enthusiasts to promote traditional Indian medicine and wellness practices globally.
29. On December 3, 2024, the second India-UK 2+2 Foreign and Defence Dialogue took place in New Delhi, with both countries discussing a wide range of topics under their comprehensive strategic partnership.
30. The Union Cabinet has approved the Coastal Shipping Bill, 2024, which will remove the requirement for Indian-flagged vessels to acquire a general trading licence to operate on coastal waters once it gets Parliament nod.
31. A proposed 95% job reservation for Ladakh locals was announced, aiming to provide employment opportunities to the region's indigenous population in various sectors.
32. The Rajya Sabha passed the Oilfields (Regulation and Development) Amendment Bill, which focuses on the regulation and development of petroleum operations, ensuring the sector's growth and sustainability.
33. The FSSAI (Food Safety and Standards Authority of India) announced that packaged drinking water is considered high-risk food due to the potential health hazards it may pose if not properly regulated.
34. The HARIMAU SHAKTI military exercise between India and Malaysia was commenced on December 2, 2024. It aimed at enhancing bilateral defense cooperation and improving the tactical capabilities of both nations' armed forces.
35. The Ratapani Wildlife Sanctuary was declared a tiger reserve in Madhya Pradesh on December 2, 2024, contributing to the conservation of India's dwindling tiger population.
36. Eklavya, an online learning platform, was recently launched for the Indian Army, providing personnel with access to educational resources and training materials to improve skills and knowledge.
37. SAREX-2024 was conducted in Kochi. It is a large-scale search and rescue exercise aimed at enhancing coordination and operational readiness in maritime rescue operations.
38. Uttar Pradesh announced initiatives for seed parks during the National Seed Congress, focusing on promoting the production of quality seeds to boost agriculture and ensure food security.

MCQs Based on Current Affairs

1. **With reference to the UNEP "Champions of the Earth" award, consider the following statements:**

1. It is the highest environmental honor awarded by the United Nations Environment Programme.
2. The award includes categories such as lifetime achievement and policy leadership.
3. It is awarded exclusively to individuals working on biodiversity conservation.

Which of the statements given above is/are correct?

- A: Only 1
B: 1 and 2 only
C: 2 and 3 only
D: 1, 2, and 3

2. **The "Gadgil Report" is primarily associated with which of the following?**

- A: Conservation of mangroves along the Konkan coast
B: Protection of the Western Ghats
C: Restoration of Himalayan ecosystems
D: Preservation of the Sundarbans

3. **With reference to the Golden Globe Awards, consider the following statements:**

1. The awards are presented by the Hollywood Foreign Press Association (HFPA).
2. They exclusively recognize achievements in the film industry.
3. The Golden Globe Awards were established in 1944.

Which of the statements given above is/are correct?

- A: 1 and 2 only
B: 1 and 3 only
C: 2 and 3 only
D: 1, 2, and 3

4. **What is the primary purpose of the vacuum-sealed environment in Hyperloop technology?**

- A: To reduce the overall cost of construction.
B: To eliminate air resistance and enable high-speed travel.
C: To prevent external environmental damage to the pods.
D: To generate energy required for pod movement

5. **Which of the following mountain ranges**

forms the natural boundary between Syria and Lebanon?

- A: Zagros Mountains
B: Taurus Mountains
C: Anti-Lebanon Mountains
D: Atlas Mountains

6. **Consider the following statements regarding TIME's Person of the Year for 2024:**

1. Donald Trump has been named TIME's Person of the Year for 2024.
2. In 2023, TIME's Person of the Year was awarded to Taylor Swift.
3. This recognition was started in the year 1930.

How many of the above statements are correct?

- A: Only 1
B: Only 2
C: All three
D: None

7. **Consider the following statements regarding Dommaraju Gukesh's World Chess Championship victory:**

1. Gukesh, an 18-year-old from India, won the World Chess Championship.
2. He defeated China's Ding Liren in the final of the 18th FIDE World Chess Championship in Singapore.
3. Gukesh is the third Indian to win the World Chess Championship, after Anand and Harikrishna.

How many of the above statements are correct?

- A: Only 1
B: Only 2
C: All three
D: None

8. **Which country will host the 2034 FIFA World Cup?**

- A: Qatar
B: Saudi Arabia
C: Spain
D: Morocco

9. **Consider the following statements regarding the World Ayurveda Congress:**

1. The World Ayurveda Congress and Ayurveda Expo

began on December 12 in Dehradun.

2. The theme of the event is “Digital Health, Ayurvedic Approach,” focusing on the integration of traditional Ayurveda with modern technologies such as AI, augmented reality, and blockchain.
3. The event features an exhibition showcasing Ayurvedic products and services from leading institutions.

How many of the above statements are correct?

- A: Only 1
 B: Only 2
 C: All three
 D: None

10. Consider the following statements regarding the Khelo India Winter Games:

1. Ladakh will host the Khelo India Winter Games from January 23 to 27, 2025, with a primary focus on ice sports.
2. The 2025 edition of the Khelo India Winter Games will be followed by the Youth and Para Games in Bihar in April 2025.
3. Ladakh is hosting the event for the first time.

How many of the above statements are correct?

- A: Only 1
 B: Only 2
 C: All three
 D: None

11. Consider the following statements regarding the Desert Knight exercise:

1. The Desert Knight exercise is a trilateral defence exercise conducted by India, France, and the United Arab Emirates (UAE).
2. The exercise aimed to enhance synergy and interoperability among the participating naval force.
3. The exercise was started in 2022 by all three nations.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: All of the above
 D: None

12. Consider the following statements regarding the Sursa ginger variety developed by the Indian Spice Research Institute:

1. Sursa is the first ginger variety in India specifically designed for use as a vegetable.
2. The yield potential of Sursa is up to 24.33 tons per hectare.
3. The Kerala State Varietal Release Committee has approved the cultivation of Sursa in Kerala.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: All of the above
 D: None

13. Consider the following statements:

1. François Bayrou was appointed as the new Prime Minister of France.
2. François Bayrou is the fifth Prime Minister to be appointed in 2024.
3. Michel Barnier, Bayrou's predecessor, served as Prime Minister for only three months, making him the shortest-serving Prime Minister in French history.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: 2 and 3 only
 D: All of the above

14. Consider the following statements regarding the 22nd Divya Kala Mela:

1. The 22nd Divya Kala Mela is being organized at India Gate from December 12 to 22, 2024.
2. The event features around 100 entrepreneurs and artisans with disabilities from 20 states and union territories.
3. The Divya Kala Mela has been held annually since its inception.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: 2 and 3 only
 D: All of the above

15. How many districts are expected to be linked by the Bharatmala Project?

- A: 200 districts
 B: 400 districts
 C: 550 districts

D: 700 districts

16. Consider the following statements regarding the Malabar Exercise:

1. The Malabar Exercise is a trilateral naval exercise involving India, Japan, and the United States.
2. The exercise focuses primarily on enhancing naval cooperation and maritime security.
3. The Malabar Exercise was first conducted in 2000 as a bilateral exercise between India and Japan.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: All of the above
 D: None

17. Consider the following statements regarding the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP):

1. The CPTPP was signed on 8 March 2018 in Santiago, Chile, and became effective on 30 December 2018.
2. The agreement aims to reduce trade barriers, promote economic growth, and strengthen international ties among its members.
3. As of December 2024, the CPTPP consists of 11 member countries.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: All of the above
 D: None

18. Consider the following statements regarding the Kisan Credit Card (KCC) scheme:

1. The Kisan Credit Card (KCC) was introduced in 1998 to provide credit support to farmers for agricultural and allied activities.
2. The KCC scheme was extended to include fisheries and animal husbandry farmers in the 2018-19 Budget to help meet their working capital needs.
3. The maximum limit for collateral-free loans under KCC was raised to Rs. 2 lakh in 2024.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: 2 and 3 only

D: All of the above

19. Which of the following features are associated with the Ken-Betwa river linking project?

1. A 77-meter high Daudhan dam will be constructed in the Panna Tiger Reserve.
2. The project involves transferring water from the Betwa River to the Ken River.
3. A 221-kilometer long link canal will be built to transfer water.

Which of the following options is/are correct?

- A: Only 1
 B: 1 and 3 only
 C: 2 and 3 only
 D: All of the above

20. Consider the following statements regarding the Chennai-Vladivostok Maritime Corridor (VCMC):

1. The VCMC is a new sea route that connects Chennai (India) to Vladivostok (Russia), facilitating trade, particularly in energy, minerals, and defense.
2. The VCMC reduces shipping time between India and Russia from 40+ days to just 16 days, making it a cost-efficient route.
3. The VCMC was formalized during Russian President Vladimir Putin's visit to India in 2020.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: All of the above
 D: None of the above

21. Consider the following statements regarding the Mistral wind:

1. The Mistral is a warm, moist wind blowing from the south to the north into the Mediterranean region.
2. The Mistral wind is common in the Rhône Valley of southern France and significantly lowers temperatures, especially in winter.

Which of the following options is/are correct?

- A: Only 1
 B: Only 2
 C: Both 1 and 2
 D: None of the above

22. Consider the following statements regarding the 10th International Forest Fair:

1. The 9th International Forest Fair is being held in Bhopal from December 17 to December 23.
2. The fair was inaugurated by Madhya Pradesh Chief Minister Dr. Mohan Yadav.
3. The theme of this year's fair is "Sustainable Forest Management for Climate Change."

Which of the following options is/are correct?

- A: 1 and 2 only
 B: Only 2
 C: All of the above
 D: None

23. Consider the following statements:

1. Russia and India signed a bilateral agreement in June 2024 to allow visa-free travel for Indian tourists to Russia starting in 2025.
2. Indian citizens are already allowed visa-free travel to 62 countries.
3. The primary goal of this agreement is to promote trade and business between India and Russia.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: All of the above
 D: None

24. Consider the following statements regarding 'INS Nirdeshak':

1. INS Nirdeshak was inducted into the Indian Navy on December 18 at Visakhapatnam.
2. The ship is built with more than 80 percent indigenous material and is equipped with advanced hydrographic and oceanographic survey equipment.
3. INS Nirdeshak has been built by Hindustan Shipyard Limited (HSL) based in Visakhapatnam.
4. The primary purpose of the vessel is to conduct hydrographic surveys, assist in navigation, and support maritime operations.

Which of the following options is/are correct?

- A: 1, 2, and 3 only
 B: 1, 2, and 4 only
 C: 1, 3, and 4 only
 D: All of the above

25. Consider the following statements regarding the "One Nation, One Election" concept:

1. On December 17, 2024, Union Law Minister Arjun Ram Meghwal introduced two bills in the Lok Sabha for one nation, one election.
2. The High-Level Committee on Simultaneous Elections, chaired by former President Ram Nath Kovind, recommended conducting synchronized elections for Lok Sabha, State Legislative Assemblies, and local bodies in two phases.
3. The first phase of the proposed elections will involve holding local body elections (Panchayats and Municipalities) simultaneously with the Lok Sabha and State Legislative Assembly elections.
4. The second phase of the elections will involve holding the elections for the Lok Sabha and State Legislative Assemblies.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1, 2, and 3 only
 C: 1, 3, and 4 only
 D: All of the above

26. Consider the following statements regarding Wroughton's Free-Tailed Bat:

1. Wroughton's free-tailed bat has recently been spotted at the Yamuna Biodiversity Park in Delhi, a new location for the species.
2. The bat is typically found in the Western Ghat.
3. The bat species plays a significant role in regulating insect populations and assisting in pollination.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: Only 1 and 3
 D: All of the above

27. Consider the following statements regarding Cyclone Chido:

1. Cyclone Chido developed from a tropical cyclone.
2. Cyclone Chido caused extensive damage in Mayotte, Madagascar, and Mozambique.
3. Scientists have linked the increasing intensity of cyclones like Chido to climate change.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only

- C: 2 and 3 only
 D: All of the above

28. Which of the following are benefits of Akash's Diamond Cooling technology for NxtGen Datacenter?

1. The technology helps increase the overclocking capabilities of AI servers by 25%.
2. It reduces the need for GPU fans, resulting in up to 90% less energy consumption.
3. It causes GPU temperatures to rise by 10°–20°C compared to traditional cooling methods.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: 2 and 3 only
 D: All of the above

29. What is the primary purpose of the 'Kisan Kavach' bodysuit?

- A: To protect farmers from extreme weather conditions
 B: To prevent pesticide-induced toxicity and health problems
 C: To increase the productivity of crops
 D: To provide insulation against cold temperatures

30. Where was India's first geology museum inaugurated?

- A: Delhi
 B: Gwalior
 C: Mumbai
 D: Bengaluru

31. Consider the following statements regarding the panel on NEET-UG paper leak:

1. The panel was led by former ISRO chairman K. Radhakrishnan.
2. One of the key recommendations was to expand the National Testing Agency's (NTA) scope to include recruitment exams beyond entrance exams.
3. The panel proposed involving state and district-level officials, similar to election management, to ensure transparency during exams.
4. The panel recommended the use of mobile testing centres in remote areas to improve accessibility.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: 1, 3, and 4 only
 D: All of the above

32. Consider the following statements regarding the African Cheetah:

1. The African cheetah is classified as Endangered by the IUCN due to habitat loss, poaching, and human-wildlife conflict.
2. The African cheetah is larger than the Asiatic cheetah.
3. African cheetahs primarily prey on herbivores like gazelles and antelopes.
4. African cheetahs are known for their speed and can reach speeds of 100-110 mph during a chase.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: 1, 2, and 3 only
 D: 2 and 4 only

33. Consider the following statements regarding the Worst Die-Off of Common Murres:

1. The Blob, a marine heatwave, occurred between 2014 and 2016 and caused a massive die-off of the common murres.
2. The die-off of common murres led to the loss of approximately 4 million birds, or about half of Alaska's murre population.
3. The primary cause of the mass die-off was the pollution of ocean waters.
4. The common murre is a seabird that has been described as a flying penguin due to its black-and-white plumage.

Which of the following options is/are correct?

- A: 1, 2, and 3 only
 B: 1, 2, and 4 only
 C: 2, 3, and 4 only
 D: All of the above

34. Where was the first-ever tagging of the Gangetic Dolphin conducted?

- A: Uttar Pradesh
 B: West Bengal
 C: Assam
 D: Bihar

35. Which of the following statements are correct regarding Minorities Rights Day?

Statement 1: Minorities Rights Day is celebrated every year on December 18

Statement 2: India's Constitution guarantees fundamental rights to all citizens, including minorities, and ensures protection from discrimination, promoting equality of opportunity in all aspects of life.

Options:

- A: Only Statement 1 is correct.
- B: Only Statement 2 is correct.
- C: Both Statement 1 and Statement 2 are correct.
- D: Neither Statement 1 nor Statement 2 is correct.

36. Which of the following statements regarding GLP-1 receptor agonists?

1. GLP-1 receptor agonists are primarily used to treat type 2 diabetes, with weight loss as a secondary effect.
2. GLP-1 receptor agonists mimic the action of the natural hormone GLP-1, which regulates appetite and blood sugar.
3. WHO's endorsement of GLP-1 RAs emphasizes the failure of diet and exercise alone in addressing the global obesity epidemic.

Options:

- A: Only statement 1 is correct.
- B: Only statements 2 and 3 are correct.
- C: All statements are correct.
- D: Only statement 3 is correct.

37. Which of the following statements are true regarding the exclusion of disability and queer health in India's medical education guidelines?

1. The 2024 Competency-Based Medical Education (CBME) guidelines exclude mandatory content on disability and queer health, despite their inclusion in the 2019 guidelines.
2. The new medical curriculum classifies sodomy and lesbianism as sexual offenses and transvestism as a perversion.
3. The NMC's exclusion of disability competencies violates the Transgender Persons Protection Act, 2019.

Options:

- A: Only statement 1 is correct.

B: Only statements 1 and 2 are correct.

C: Only statements 2 and 3 are correct.

D: All statements are correct.

38. Which of the following statements are correct regarding the Yuga Yugeen Bharat National Museum project?

1. The Yuga Yugeen Bharat National Museum will span 1,55,000 square meters across the North and South Blocks in New Delhi.
2. The retrofitting of the North Block is expected to be completed by June 2025.
3. France will provide expertise in museum management for the development of the Yuga Yugeen Bharat National Museum.

Options:

- A: Only statement 1 is correct.
- B: Only statements 1 and 3 are correct.
- C: Only statements 2 and 3 are correct.
- D: All statements are correct.

39. Which of the following is a major reason for the prevalence of witch-hunting in rural India?

1. Superstition and ignorance.
2. Lack of healthcare access.
3. Economic prosperity in rural areas.

Options:

- A: Only statement 1 is correct.
- B: Statements 1 and 2 are correct.
- C: Only statement 3 is correct.
- D: All statements are correct.

40. What does the term "benchmark disability" refer to under the Rights of Persons with Disabilities Act, 2016?

1. A disability that requires the least support.
2. A disability that has not been defined in measurable terms but has at least 40% impairment.
3. A disability with no need for certification.

Options:

- A: Only statement 1 is correct.
- B: Only statement 2 is correct.
- C: Only statement 3 is correct.
- D: All statements are correct.

41. Consider the following statements regarding the recent visit of Prime Minister Narendra Modi to

Kuwait:

1. Prime Minister Modi's visit to Kuwait was the first visit by an Indian Prime Minister in 43 years.
2. The visit led to the signing of a comprehensive defence agreement, including joint military exercises and collaboration in defence technology.
3. Kuwait is India's second-largest crude oil supplier, meeting 5% of its energy needs.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: Only 1 and 3
 D: All of the above

42. Consider the following statements regarding the discovery of an active hydrothermal vent captured by Indian oceanographers:

1. The first-ever image of an active hydrothermal vent was captured 4,500 meters below the surface of the Indian Ocean.
2. Hydrothermal vents are underwater springs where cold seawater meets hot magma beneath the ocean floor, releasing superheated water rich in minerals and gases.
3. Hydrothermal vents only play a role in the biological exploration of deep-sea organisms and do not have economic importance.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: Only 1 and 3
 D: All of the above

43. Consider the following statements regarding India's relationship with the UAE:

1. The UAE is one of India's top trading partners, with trade surpassing \$60 billion annually.
2. The UAE and India signed a Free Trade Agreement (FTA) in 2023 aimed at boosting economic relations.
3. India is the largest source of immigrant for the UAE.

Which of the following options is/are correct?

- A: Only 1 and 2
 B: 2 and 3 only
 C: Only 1 and 3
 D: All of the above

44. Consider the following statements regarding Arun Kapoor's recent royal honour from Bhutan:

1. Recently, Arun Kapoor was honoured with the 'Bura Marp' (red scarf) and 'Patang' (sword) by Bhutan's King Jigme Khesar Namgyal.
2. Arun Kapoor was awarded the 'Druk Thuksey' in 2019 for his contributions to education in Bhutan.
3. Arun Kapoor founded the NGOs 'Ritinjali' and 'Pallavan School Network' in Bhutan to promote education and skill development.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: 2 and 3 only
 D: All of the above

45. Consider the following statements regarding Masali village in Gujarat:

1. Masali village is India's first 100% solar-powered border village, located 40 km from the Pakistan border.
2. Total 119 houses in village completely solarised and generating more than 225 kW of electricity.
3. Under the Border Development Project 100 villages along India's borders will be developed as a solar dependent village.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: 2 and 3 only
 D: All of the above

46. Consider the following statements regarding the Telecommunications (Procedures and Safeguards for Lawful Interception of Messages) Rules, 2024:

1. The rules empower the Union Home Secretary and the Secretary to the State Government (Home Department) to issue interception orders.
2. Officers below the rank of Joint Secretary can issue interception orders in exceptional circumstances.
3. The new rules require intercepted messages to be confirmed within seven days by the competent authority for use as evidence in court.

Which of the following options is/are correct?

- A: 1 and 2 only

- B: 1 and 3 only
 C: Only 1
 D: All of the above

47. Under the Telecommunications Rules, 2024, what is the maximum retention period for records of intercepted messages?

- A: Three months
 B: Six months
 C: One year
 D: Two years

48. Consider the following statements regarding the India State of Forest Report (ISFR) 2023:

- The total forest and tree cover in India is 8,27,357 square kilometers, accounting for 25.17% of the country's geographical area.
- According to the report, the forest cover in India increased by 156 square kilometers, while the tree cover increased by 1,289 square kilometers between 2021 and 2023.
- Madhya Pradesh has the highest percentage of forest cover among Indian states and UT.

Which of the following options is/are correct?

- A: 1 and 2 only

- B: 2 and 3 only
 C: Only 1
 D: All of the above

49. Which state showed the maximum increase in forest and tree cover according to ISFR 2023?

- A: Rajasthan
 B: Uttar Pradesh
 C: Chhattisgarh
 D: Odisha

50. Consider the following statements regarding the forest cover data in India from ISFR 2023:

- Lakshadweep has the highest percentage of forest cover among Indian Union Territories.
- Mizoram has the highest percentage of forest cover in Indian states.
- The total area of mangrove cover in India is 4,992 square kilometres in 2023.

Which of the following options is/are correct?

- A: 1 and 2 only
 B: 2 and 3 only
 C: Only 1 and 3
 D: All of the above

ANSWER

1	B
2	B
3	B
4	B
5	C
6	B
7	B
8	B
9	C
10	B

11	B
12	C
13	B
14	A
15	C
16	A
17	A
18	A
19	B
20	A

21	B
22	A
23	A
24	B
25	A
26	D
27	D
28	A
29	B
30	B

31	C
32	B
33	B
34	C
35	C
36	C
37	B
38	B
39	B
40	B

41	A
42	A
43	C
44	A
45	A
46	B
47	B
48	A
49	C
50	D

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