



CURRENT AFFAIRS

December

2024

₹ 60/-

FOR CIVIL SERVICES EXAM

Editor : Manohar E. Patil • Composer : Rajnikant Mohite

No. 1 E-Magazine

- To The Point Current Affairs.
- Maximum Current Affairs questions from this magazine



1st Global Ministerial Conference on ending violence against children



The Reliable Publication

www.reliableias.com

Delhi • Mumbai • Thane • Pune • Kalyan

The

Reliable IAS®

Current Affairs

U
P
S
C

December - 2024

Index

1) HISTORY & CULTURE

7-8

- First Asian Buddhist Summit 2024

2) POLITY & GOVERNANCE

9-45

- Pradhan Mantri Vanbandhu Kalyan Yojana (PMVKY) Marks 10-Year Milestone
- Supreme Court Validates Uttar Pradesh Madrasa Education Board Act, 2004
- The Member of Parliament Local Area Development Scheme (MPLADS):
- Supreme Court's Ruling on State Authority over Private Property
- Promoting Sustainable Livelihoods Among Tribal Communities
- Inter-State Council (ISC): Enhancing India's Federal Framework
- Conduct Rules for Civil Servants in India
- Yanadi Tribe
- Orphan Drugs and Their Importance in Treating Rare Conditions
- PM-Vidyalaxmi Scheme: A Boost for Meritorious Students
- Prior Sanction Mandatory for Prosecution of Public Servants in Money Laundering Cases
- First Global Ministerial Conference on Ending Violence Against Children
- Accessibility for Persons with Disabilities as a Fundamental Right
- Parliamentary Committee to Review Measures Against Fake News
- 'Rationalising the Public Distribution System
- One Nation One Subscription (ONOS)
- Supreme Court Validates Inclusion of 'Socialist' and 'Secular' in the Preamble
- Koraga tribal community

3) SOCIAL ISSUE

46-54

- Supreme Court's Ruling on Inheritance Provisions under Hindu Succession Act, 1956
- Women Empowerment in India
- Periodic Labour Force Survey Data Highlights Improved Women Employment Indicators
- Nayi Chetna 3.0 – Pahal Badlaav Ki: A Campaign Against Gender-Based Violence

4) GEOGRAPHY

55-65

- India's Pursuit of Critical Minerals: Key Findings from IEEFA Report
- Mangroves and Coastal Resilience: Critical Role in Cyclone Protection and Conservation
- Odisha Marks 25 Years of Resilience Since the 1999 Supercyclone
- Central Water Commission Report Highlights Expanding Himalayan Glacial Lakes
- Concerns Raised Over Falling Birth Rates in Some States
- Villages in Odisha Recognized as 'Tsunami Ready' by UNESCO-IOC

5) ENVIRONMENT & ECOLOGY

66-78

- COP-16 of the Convention on Biological Diversity
- Biological Diversity Rules, 2024
- Marine Protected Areas as Key to Biodiversity Conservation and Nutritional Security
- Alstonia Scholaris: A Tree of Significance
- Decline in Migratory Bird Arrival at Hokersar Wetland
- 'Guru Ghasidas-Tamor Pingla Tiger Reserve
- National Landslide Risk Mitigation (NLRM) Project

6) SCIENCE & TECHNOLOGY

79-91

- 3rd Indian Space Conclave and India's First Mars and Moon Analog Mission
- First Successful RNA Editing Clinical Trial in Humans
- Lignosat: The First Wood-Panelled Satellite
- Operation Dronagiri and Geospatial Data Interface
- 'One Day One Genome' Initiative Launched by Department of Biotechnology
- ISRO Receives Green Light for Venus Mission: Shukrayaan

7) INTERNATIONAL RELATION & ORGANISATIONS

92-101

- India-Spain Bilateral Relations
- India Joins Steering Committee of Asset Recovery Interagency Network-Asia Pacific
- India Holds First Official Meeting with Taliban Defense Minister
- Unified Complex Radio Antenna (UNICORN)
- Russia's Revised Nuclear Doctrine
- World Bank Releases "Jobs at Your Doorstep" Report
- India Endorses Final Act of Riyadh Design Law Treaty (DLT)

8) ECONOMY

102-115

- Stagnant Rural Wages: A Paradox Amid Economic Growth
- India's Trade Deficit: An Opportunity in Disguise
- RBI introduces framework for reclassification of FPI to FDI
- Chennai-Vladivostok Eastern Maritime Corridor
- India-Maldives Pact on Cross-Border Transactions Using Local Currencies
- Indian MSMEs: Job Creation and Sectoral Importance

9) SECURITY

116-120

- Rise in Drone Seizures at Punjab Border Signals Growing Security Challenge
- AFSPA in Violence-Hit Areas of Manipur, Including Jiribam
- India's First Long-Range Hypersonic Missile



U
P
S
C

December - 2024

The

Reliable IAS®

Current Affairs

U
P
S
C

December - 2024

First Asian Buddhist Summit 2024

Relevance : GS I - Indian Culture

- **In News:** The Ministry of Culture, alongside the International Buddhist Confederation (IBC), successfully held the First Asian Buddhist Summit 2024. With the theme “Role of Buddha Dhamma in Unifying Asia”, the summit welcomed over 160 global participants from 32 nations.



Significance of the Summit:

- **Strengthening Asian Unity through Buddha Dhamma**
 - ✓ The summit highlighted the profound interconnection between Buddha Dhamma, India, and Asia, underscoring their mutual relationship.
- **Adoption of the Delhi Declaration**
 - ✓ A major outcome was the adoption of the Delhi Declaration (detailed below), affirming the central role of Buddha Dhamma in promoting moral governance, compassionate actions, and sustainable growth.
- **Alignment with India's Diplomatic Priorities**
 - ✓ This summit aligns with India's Act East and Neighborhood First strategies, aiming to foster collective, inclusive, and spiritual growth across Asia.

Role of Buddhism in India's Diplomacy:

- **Cultural Legitimacy**
 - ✓ India's status as Buddhism's birthplace offers it a unique diplomatic influence in Asia, where 97% of the world's Buddhist population resides.
- **Religious Heritage Tourism**
 - ✓ India's promotion of Buddhist heritage sites as destinations for international pilgrimage strengthens cross-border cultural ties. India is developing Buddhist tourism circuits connecting key sites, like Bodh Gaya, Sarnath, and Nalanda, with locations in Nepal.

- **Cultural Exchange through Relics**
 - ✓ Buddhism has served as a significant bridge in India's cultural diplomacy with ASEAN countries. Recently, India shared sacred relics of Lord Buddha with Thailand, further enhancing cultural ties.
- **Dalai Lama's Presence**
 - ✓ Hosting the Dalai Lama and the Tibetan Parliament-in-Exile in Dharamshala boosts India's image as a guardian of Buddhist traditions and values.

The Delhi Declaration:

- The Delhi Declaration, ratified during the summit, includes key objectives:
- **Strengthen Asian Bonds through Buddha Dhamma**
 - ✓ Promote stronger connections among Asian countries grounded in the principles of Buddha Dhamma.
- **Preserve and Promote Buddhist Philosophy**
 - ✓ Focus on safeguarding and advancing Pali texts and the wider Buddhist philosophy.
- **Youth Engagement in Value-Driven Society**
 - ✓ Actively involve young people in fostering a society inspired by values rooted in Buddha's teachings.
- **Modern Relevance of Buddha Dhamma**
 - ✓ Investigate the importance of Buddha's teachings in scientific and medical fields today.
- **Promote Buddhism as a Path to Global Harmony**
 - ✓ Reinforce Buddha Dhamma as a unifying force to encourage global peace and harmony.

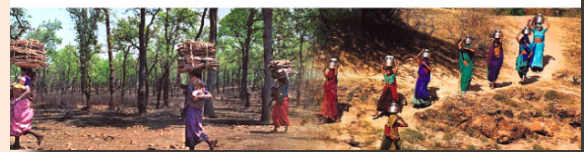
Pradhan Mantri Vanbandhu Kalyan Yojana (PMVKY) Marks 10-Year Milestone

Relevance: GS II - Welfare Scheme

- **In News:** The Pradhan Mantri Vanbandhu Kalyan Yojana (PMVKY), a key scheme initiated in 2014, has reached its ten-year milestone.
- The program focuses on addressing the specific needs of India's tribal communities.



VANBANDHU KALYAN YOJANA



About PMVKY:

- ✓ **Type:** Centrally-funded scheme prioritizing holistic, integrated, and inclusive advancement of tribal communities.
- ✓ **Goal:** To elevate the socio-economic standing of tribal populations while safeguarding their cultural heritage and identity.
- ✓ **Implementing Body:** Ministry of Tribal Affairs (MoTA).

Six Major Initiatives Under PMVKY:

- **Pradhan Mantri Adi Adarsh Gram Yojana:** Focuses on enhancing vital sectors such as road networks, telecom services, education, and healthcare in tribal regions.
- **Development of Particularly Vulnerable Tribal Groups (PVTGs):** Through the Pradhan Mantri PVTGs Development Mission (launched in 2023-24), critical services including secure housing, clean drinking water, sanitation, educational opportunities, healthcare, and nutrition are extended to PVTGs.
- **Support for Tribal Research Institutes (TRIs):** Aims to bolster research and documentation activities pertaining to tribal affairs.
- **Additional Support Measures:** Covers Pre-Matric and Post-Matric Scholarships and administrative assistance for Project Management Units.

Tribal Population Profile in India:

- **Demographics:** Scheduled Tribes (ST) account for approximately 8.6% of India's population.

- **Constitutional Recognition:** Over 730 Scheduled Tribes are identified under Article 342 of the Constitution.
- **Particularly Vulnerable Tribal Groups (PVTGs):** 75 PVTGs are identified across 18 states and the Union Territory of Andaman & Nicobar Islands.

Additional Tribal Development Initiatives:

- **Eklavya Model Residential Schools:** Established to provide quality education to ST students from classes VI to XII.
- **Pradhan Mantri Janjatiya Vikas Mission (PMJVM):** Formed by consolidating the “Mechanism for Marketing of Minor Forest Produce through Minimum Support Price” and the “Institutional Support for Development and Marketing of Tribal Products.”
- **Development Action Plan for Scheduled Tribes (DAPST):** Beyond the Ministry of Tribal Affairs, 41 other ministries and departments allocate portions of their budgets annually to support tribal development.

Conclusion:

- The 10-year journey of PMVKY showcases the government’s sustained commitment to tribal welfare, highlighting advancements in education, healthcare, and economic support while promoting sustainable development in tribal regions nationwide.

Supreme Court Validates Uttar Pradesh Madrasa Education Board Act, 2004

Context:

- Recently, the Supreme Court upheld key provisions of the Uttar Pradesh Madrasa Education Board Act, 2004, overturning a March 2024 Allahabad High Court decision that had declared the Act unconstitutional. However, the Supreme Court invalidated certain sections concerning advanced levels of education under the Act, as these provisions conflicted with the University Grants Commission (UGC) Act, 1956, governed by Entry 66 of the Union List.



Overview of the UP Madrasa Education Board Act, 2004

➤ Purpose and Scope of the Act

- The Act aims to create a structured framework for madrasa education in Uttar

Pradesh, setting standards to ensure that madrasas meet defined educational norms.

- It integrates Islamic teachings with secular education as per the curriculum specified by the National Council of Educational Research and Training (NCERT), ensuring students receive both religious and academic instruction.
- **Establishment of the Madrasa Education Board**
 - The Act established the Uttar Pradesh Board of Madrasa Education, tasked with overseeing madrasa education in the state.
 - The Act also provides for examinations at various levels, from the 'Maulvi' stage (equivalent to Class 10) to the 'Fazil' level (higher levels).

Reasons for the Supreme Court's Decision to Uphold the Act

- **Constitutional Validity**
 - The Supreme Court emphasized that the Act aligns with the state's responsibility to ensure that students attain basic educational competencies, allowing them to participate fully in society.
- **Legislative Authority**
 - The Court affirmed that the Act falls under the legislative competence of the state, specifically under Entry 25 of List 3 (Concurrent List) in the Constitution, which empowers states to regulate education.
- **Differentiation Between Religious Education and Religious Instruction**
 - The Court referred to its earlier ruling in the Aruna Roy vs Union of India case (2002), where it differentiated between "religious education" (focused on communal harmony and tolerance) and "religious instruction" (often involving specific worship practices). According to Article 28 of the Constitution, religious instruction is prohibited in state-supported institutions but does not exclude religious education that promotes societal harmony.
- **Inapplicability of the Basic Structure Doctrine to Ordinary Laws**
 - Citing the Indira Nehru Gandhi vs Raj Narain case (1975), the Court clarified that the Basic Structure Doctrine applies to Constitutional amendments, not ordinary statutes. Statutes are judged based on specific Constitutional provisions, not broader values like secularism or democracy, which could introduce interpretive uncertainties.
- **State's Role in Incorporating Secular Studies into Madrasa Education**
 - The Court ruled that while the Act allows for religious instruction, it does not undermine the principle of secularism. The state is permitted to establish rules under the Act to ensure that secular subjects are taught alongside religious instruction, allowing for a balanced curriculum.

➤ Protecting Minority Rights and Ensuring Quality Education

- By upholding the Act, the Court underscored the rights of religious minorities under Article 30 of the Constitution to establish educational institutions. However, it emphasized that these institutions should provide education on par with other state educational institutions, ensuring students are equipped for broader societal engagement.

Allahabad High Court's Grounds for Declaring the Act Unconstitutional

➤ Secularism Concerns

- The Allahabad High Court ruled that making Islamic education mandatory violated secularism. It argued that the state should focus on providing secular education, making modern subjects central to the madrasa curriculum rather than optional.

➤ Violation of Fundamental Rights

- The High Court found that the Act violated:
 - Article 21A (Right to Education): The Right to Free and Compulsory Education for children ages 6 to 14. The court ruled that traditional education, even if offered with a minimal fee, did not satisfy this Constitutional mandate.
 - Article 14 (Right to Equality): The Act was seen as discriminatory by creating a disparity between madrasa and mainstream students.
 - Article 15 (Prohibition of Discrimination): The establishment of a distinct educational framework for madrasas was viewed as creating inequality between madrasa and non-madrasa students.

➤ Conflict with the UGC Act, 1956

- The High Court found that the Act conflicted with the UGC Act, which exclusively grants degree-awarding authority to recognized universities and institutions under central jurisdiction.

Supreme Court's Ruling on Advanced Levels of Education

- The Supreme Court invalidated the Act's provisions for higher education (Kamil and Fazil levels), ruling that these provisions conflicted with the UGC Act, which governs degree-awarding authority under Entry 66 of the Union List. This reinforces the central government's exclusive authority over standards in higher education.

➤ Implications of the Supreme Court's Decision on the UP Madrasa Education Board Act, 2004

- Reinforcement of Education Standards
 - The Court's decision underscores the state's authority to establish and regulate educational standards within institutions, including madrasas, ensuring quality and consistency.

- Support for Minority Rights
 - The ruling safeguards the rights of religious minorities to set up educational institutions, as guaranteed by Article 30. However, it also emphasizes that such institutions must uphold educational standards to ensure students' holistic development.
- Commitment to Quality Education
 - By encouraging a balanced curriculum that includes secular studies, the decision supports the state's responsibility under Article 21A to ensure quality education for all students, regardless of their religious backgrounds.
- Inclusivity in Education
 - The judgment supports integrating madrasa education into the broader educational framework, fostering inclusivity and social cohesion, and offering madrasa students the same access to secular education as their peers in other institutions.

Constitutional Provisions on Freedom of Religion

- The Court's ruling aligns with several key articles of the Constitution that protect religious freedom:
 - Article 25: Ensures freedom of conscience and the right to profess, practice, and propagate religion.
 - Article 26: Provides religious communities the freedom to manage their religious affairs.
 - Article 27: Prohibits taxation for promoting any particular religion.
 - Article 28: Bars religious instruction in state-supported educational institutions, though educational institutions established by religious minorities may include religious instruction.

Conclusion

- The Supreme Court's decision upholding the Uttar Pradesh Madrasa Education Board Act, 2004, signifies a balanced approach between respecting minority rights and enforcing secular standards in education. By affirming the state's regulatory authority over educational standards, including in religious institutions, the ruling may influence the future regulation of religious education in India, promoting inclusivity, equality, and consistency across educational institutions.



The Member of Parliament Local Area Development Scheme (MPLADS):

Context:

- The Member of Parliament Local Area Development Scheme (MPLADS) has once again become a topic of considerable discussion in India. Advocates argue it empowers MPs to fulfill regional development needs, while opponents contend that it breaches constitutional principles, especially concerning the separation of powers.
- Reports on stalled projects and calls for increased funding have further fueled debates around MPLADS' efficiency, oversight, and transparency.



What is MPLADS?

➤ Overview of MPLADS

- MPLADS is a Central Sector Program established in 1993, enabling Members of Parliament (MPs) to propose and support development projects in their constituencies, focusing on creating long-term community resources that cater to local demands.

➤ Implementation Structure

- A state-level coordinating department administers MPLADS, while district authorities are tasked with approving projects, managing funds, and ensuring implementation and compliance.

➤ Funding Allocation

- Each MP is assigned an annual allocation of ₹5 crore (since 2011-12) from the Ministry of Statistics and Programme Implementation (MoSPI), which disburses the funds to district authorities in two ₹2.5 crore installments.

➤ Nature of Funds

- Funds under MPLADS are non-lapsable, meaning any unused money rolls over to the next fiscal year. MPs are required to allocate at least 15% and 7.5% of MPLADS funds to projects benefitting Scheduled Castes (SCs) and Scheduled Tribes (STs), respectively.

➤ Special Provisions

- MPs can designate up to ₹25 lakh annually for projects outside their

constituencies that promote national integration and up to ₹1 crore for development initiatives in areas affected by severe natural disasters across India.

➤ Eligible Projects

- MPLADS funding can be merged with the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) for creating lasting assets and linked with the Khelo India initiative to support sports infrastructure.
- Infrastructure projects on land owned by registered societies or trusts engaged in social welfare for at least three years are allowed, provided they are not linked to MPs or their family members in any official capacity.

Primary Arguments For and Against MPLADS

Criticisms of MPLADS

➤ Violation of Constitutional Principles

- Critics contend MPLADS disrupts the separation of powers by allowing MPs to engage in executive functions. Although MPs merely “propose” projects, district authorities seldom decline these recommendations, raising questions about democratic accountability.
- The 2nd Administrative Reforms Commission (ARC) in 2005 recommended discontinuing the scheme, arguing that legislators overstepping executive roles infringes on the jurisdiction of local governments.

➤ Lack of Accountability

- Inadequate supervision and assessment frameworks have raised concerns over potential misuse of MPLADS funds, with claims that MPs might use the funds to favor influential groups, contractors, or even family members.
- The absence of statutory regulation for MPLADS has made it difficult to enforce adherence to standards and maintain accountability.

➤ Political Misuse

- Reports suggest that reviews of MPLADS fund usage can be politically driven, especially around election times, compromising the scheme’s integrity.
- Execution Issues Noted by the CAG
- The Comptroller and Auditor General (CAG) highlighted various flaws in the scheme's execution:
 - Utilization: Fund use efficiency ranges from 49% to 90%.
 - Allocation: Significant portions of the funds are directed toward upgrading existing assets rather than creating new ones.
 - Quality Concerns: Reports indicate overpayments, substandard project work, and poor-quality materials.
 - Administrative Delays: Slow issuance of work orders and inadequate record-keeping have raised transparency and accountability concerns.

U
P
S
C

December - 2024

Supportive Arguments for MPLADS

➤ Local Development Focus

- Supporters argue that MPLADS allows MPs to address localized development needs directly, enabling a rapid response to their communities' unique needs.

➤ Flexibility in Project Selection

- The scheme allows MPs to prioritize initiatives that address local requirements, fostering timely project completion and development.

➤ Calls for Increased Allocation

- Some MPs advocate for raising MPLADS funds, as the current per capita funding is lower than what state legislators receive for smaller populations. Increased funding would allow for more balanced development across larger MP constituencies, equating resources with those available to MLAs.

Supreme Court's Position on MPLADS

- In 2010, the Supreme Court upheld the scheme's constitutional validity, affirming that MPs' role in MPLADS is limited to project recommendation, with district officials responsible for execution.
- The Court acknowledged MPLADS' positive impact on local communities, funding essential infrastructure such as water supply, education, healthcare, and public facilities.
- The Court noted that the Union government can allocate funds for public welfare programs through an Appropriation Bill under Article 282 of the Indian Constitution. The MPLADS aligns with the Directive Principles of State Policy under Article 38, which provides its legal basis.

Effectiveness of MPLADS Monitoring

➤ Third-Party Evaluations

- To assess MPLADS' effectiveness, the government has conducted independent evaluations by organizations such as NABCONS and the Agricultural Finance Corporation (AFC). Positive impacts include the creation of high-quality assets and support for localized development.
- However, the evaluations also noted issues such as the sanctioning of ineligible projects, asset encroachment, missing assets, misuse of funds, and delays in project approval and completion.

➤ Challenges in Oversight

- Delayed assessments often hinder corrective actions during project execution.
- Insufficient follow-up on identified irregularities enables fund misuse, while lack of transparency and limited public access to fund usage data impede public

scrutiny.

- MPs' offices have data on fund usage over the past decade, but updates to the official portal have been inconsistent, limiting access to this information.

Does MPLADS Require Reform or Abolition?

➤ Arguments for Reform

- Reforming MPLADS could involve giving it legal status and establishing an independent oversight body to improve governance, accountability, and transparency.
- Open tendering could be implemented for contractor selection, with representatives from CAG present to ensure compliance.
- Integration with national programs like MGNREGS and the Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN) could amplify MPLADS funds' impact.
- Reforms could focus on supporting welfare programs targeted at marginalized communities, enhancing regional development.

➤ Arguments for Abolition

- Abolishing MPLADS could reallocate funds directly to local governments (Panchayats, Municipalities), who may better understand community needs.
- Existing government programs already support local development, so MPLADS funds could be utilized more efficiently within these frameworks, avoiding redundancy.
- Weak regulations have made the scheme vulnerable to misuse and inefficiency, leading to corruption and unequal fund distribution.

Conclusion

- The future of MPLADS likely hinges on balancing its developmental goals with stronger accountability measures. While reforms to enhance transparency may be sufficient, the question of more substantial changes, such as abolition, remains central to India's evolving democratic governance framework.

Supreme Court's Ruling on State Authority over Private Property

☛ Context

- In a notable ruling in *Property Owners Association v. State of Maharashtra* (2024), the Supreme Court established boundaries on the government's authority to acquire privately-owned resources for public use. The petitioners contended that the state cannot seize



private property by invoking provisions under Articles 39(b) and 31C of the Constitution.

➤ Note:

- Article 39(b): Directs the State to ensure the fair distribution of resources in a way that benefits the public.
- Article 31C: Shields laws enacted under Articles 39(b) and 39(c) from challenges based on Article 14 (right to equality) or Article 19 (rights to freedom of speech, assembly, etc.).

Key Aspects of the Supreme Court Judgment

➤ Eligibility for State Acquisition

- The Court ruled that only resources essential for community welfare or in limited supply qualify for state acquisition, rather than all private property.
- The "public trust doctrine," under which the state safeguards certain resources for the public, can guide this determination.

➤ Criteria for Defining Resources

- The court outlined two criteria: a resource must be both "material" and serve or belong to the community.
- Materiality: Refers to the significance of assets, like land, water, or minerals, and their effect on economic, social, and environmental factors.

➤ Reversal of Previous Rulings

- The majority overturned the Sanjeev Coke v. Bharat Coking Coal judgment (1982), which had upheld Ranganath Reddy (1977) by permitting all private property to be classified as "material resources of the community."
- Dissenting Opinion: Justice Sudhanshu Dhulia supported broader legislative flexibility in determining "material resources."

➤ Limiting Article 39(b)

- The court advised against an expansive interpretation of Article 39(b), which could otherwise jeopardize property rights enshrined under Article 300A, ensuring that no person can be deprived of their property without due legal process.

➤ Methods for Converting Private Property into Public Assets

- The court specified five mechanisms for turning private resources into community resources:
 1. Nationalisation
 2. State Acquisition
 3. Operation of Law
 4. State Purchase
 5. Donation from the Owner

Constitutional Provisions Related to Property Rights

- Article 31: Originally recognized the right to property as a fundamental right; this was repealed by the 44th Amendment Act (1978) and replaced by Article 300A, making it a constitutional right.
- 1st Amendment Act (1951): Added Articles 31A and 31B, protecting certain laws from being challenged, even if they conflicted with fundamental rights.
 - Article 31A: Gave the state authority to acquire property without challenges under fundamental rights.
 - Article 31B: Added laws to the Ninth Schedule, exempting them from judicial review.
- 25th Amendment Act (1971): Inserted Article 31C to protect laws aimed at resource redistribution under Articles 39(b) and 39(c) from judicial scrutiny.
- 42nd Amendment Act (1976): Expanded Article 31C to cover laws implementing any Directive Principles if they promote public welfare.
- 44th Amendment Act (1978): Removed the right to property from the list of fundamental rights, categorizing it under Article 300A as a constitutional right.

Judicial Interpretations Related to Property Rights

- Sankari Prasad Case (1951): The Court upheld Parliament's authority to amend the Constitution, affirming that fundamental rights are not exempt from constitutional amendments.
- Bella Banerjee Case (1954): The Court mandated fair compensation for private property acquired by the government.
- Kesavananda Bharati Case (1973): Held that constitutional amendments could modify or remove the right to property.
- Minerva Mills Case (1980): The Court invalidated provisions barring judicial review under Article 31C, reinforcing checks and balances.
- Waman Rao Case (1981): Declared that amendments made to the Ninth Schedule after Kesavananda Bharati are subject to judicial review.
- Vidya Devi Case (2020): Declared that forcibly seizing private property without due legal process violates both human rights and constitutional rights under Article 300A.

Significance of the Supreme Court Ruling

➤ Balance Between State Power and Individual Rights

- The judgment allows for state intervention, but only under specific conditions, ensuring that private resources cannot be acquired without justified reasons.

➤ Economic Inclusivity

- The ruling aligns with Dr. B.R. Ambedkar's vision of "economic inclusivity,"



ensuring the Constitution does not impose a rigid economic model, preserving individuals' freedom to determine their social and economic structures.

➤ Flexible Approach to Directive Principles

- The judgment emphasizes that Directive Principles, like Article 39(b), should adapt to changing societal and economic conditions rather than adhere to a singular economic doctrine.

➤ Role of Elected Bodies

- The ruling underscores the role of democratic processes and elected governments in shaping welfare and economic policies.

➤ Targeted Welfare Policies

- Future welfare initiatives are likely to focus on critical resources that serve public welfare, enabling the state to adopt progressive policies such as targeted taxation and social programs.

Impacts of State Control over Property

Positive Impacts

➤ Equitable Resource Distribution

- Promotes social equity by reallocating resources to marginalized groups, helping to address wealth inequality.

➤ Sustainable Resource Management

- Ensures resources like land, water, and minerals are utilized sustainably for the benefit of the public.

➤ Public Benefit Projects

- Facilitates land acquisition for infrastructure, healthcare, and education, promoting public welfare.

➤ Protection of Disadvantaged Populations

- Offers safeguards for vulnerable communities, preventing exploitation.

Negative Impacts

➤ Limitations on Private Ownership

- Restrictions on property rights may discourage private investment and economic innovation.

➤ Reduced Incentives for Improvement

- Private owners may lack motivation to invest in property improvements due to state restrictions.

➤ Economic Slowing

- Excessive regulation may limit growth driven by market forces & hinder innovation.

Conclusion

- The Supreme Court's decision in *Property Owners Association v. State of Maharashtra* (2024) establishes vital precedents on state acquisition of private property. It stresses the need for public purpose, fair compensation, and case-specific evaluations, balancing individual property rights with the public interest. This landmark decision advances India's constitutional approach to property rights, protecting individual ownership while ensuring state interventions serve the greater public good.

Promoting Sustainable Livelihoods Among Tribal Communities

Context:

- The recent fatalities in Kandhamal district of Odisha, due to the consumption of mango kernels, have brought to light a severe livelihood crisis among tribal populations. Mango kernels, the seeds left after extracting juice from the fruit, contain cyanogenic glycosides, such as amygdalin. When ingested, these compounds release dangerous hydrogen cyanide, leading to fatal consequences. This incident underscores the broader socio-economic hardships faced by these communities, including extreme poverty and food insecurity.



Why Do Tribals Resort to Unsafe Consumption for Survival?

➤ Endemic Poverty in Tribal Areas

- Tribal communities are largely reliant on foraged and wild foods, a necessity driven by long-standing and pervasive poverty. According to the Multidimensional Poverty Index (MPI), 65 million of the 129 million tribal people are classified as living in multidimensional poverty, which points to their ongoing struggle to access basic life-sustaining resources.

➤ Food Insecurity and Geographic Isolation

- Due to the remote and inaccessible nature of many tribal regions, these communities face immense challenges in securing regular, nutritious food. The lack of proper infrastructure and logistical difficulties make it impossible for tribal groups to consistently benefit from programs under the National Food Security Act (NFSA), 2013. Consequently, food insecurity becomes widespread, exacerbating their vulnerability.

➤ Alarming Rates of Malnutrition

- Data from the National Family Health Survey (NFHS-5) 2019-21 highlights

severe malnutrition among tribal children. The rates of stunting, wasting, and underweight are reported at 40.9%, 23.2%, and 39.5%, respectively. These figures illustrate the severity of the problem, with many tribal families lacking access to essential food staples such as grains, pulses, oils, and fortified nutrition.

➤ **Loss of Forest Rights and Economic Exploitation**

- Historically, tribal communities have depended on forests for their survival, engaging in subsistence farming and gathering wild foods. However, the loss of forest rights, deforestation, and displacement have exacerbated their poverty. This situation is compounded by exploitative practices, such as tribal people being forced to pledge welfare cards (e.g., ration cards) to moneylenders for short-term relief. Such practices deprive them of their rightful government entitlements, pushing them further into debt.

➤ **Survival Amid Extreme Poverty and Seasonal Shortages**

- In times of acute poverty, food scarcity, and seasonal droughts, tribal families are left with no option but to rely on unsafe food sources to survive. This often leads to the consumption of harmful substances that pose serious health risks, perpetuating their cycle of socio-economic deprivation.

➤ **Limited Impact of Government Programs**

- Despite the presence of various welfare programs like the Odisha Tribal Development Project (OTDP), UNICEF's Household Food Security Project, and World Food Programme-supported community-based anti-hunger initiatives, the actual impact in tribal regions remains minimal. These programs often fail to tackle the root causes of poverty and food insecurity, leaving tribal populations vulnerable.

Key Government Initiatives for Tribal Empowerment

➤ **Pradhan Mantri Janjati Adivasi Nyay Maha Abhiyaan (PM-JANMAN)**

- This initiative aims to address socio-economic challenges faced by tribal communities by promoting justice, welfare, and inclusive growth.

➤ **Janjatiya Gaurav Divas**

- This observance is dedicated to recognizing the significant contributions of tribal communities to India's cultural heritage, while advocating for their rights and national development.

➤ **Viksit Bharat Sankalp Yatra**

- This mission focuses on achieving the vision of a developed and prosperous India, with a dedicated emphasis on uplifting marginalized tribal communities through economic empowerment and social inclusion.

➤ **PM PVTG Mission**

- The mission focuses on the development of Particularly Vulnerable Tribal

Groups (PVTGs), aiming to ensure their inclusion in the broader national development agenda.

➤ **Dharti Aaba Janjatiya Gram Utkarsh Abhiyan**

- This initiative seeks to improve the quality of life in tribal villages by focusing on education, healthcare, and infrastructural development, thus contributing to the upliftment of these communities.

➤ **Eklavya Model Residential Schools (EMRS)**

- These schools provide high-quality education to tribal children, empowering them with knowledge and skills that enable them to participate more fully in mainstream society.

How Can Tribal Livelihoods Be Improved?

➤ **Expanding and Innovating the Public Distribution System (PDS)**

- To address the nutrition gap, the Public Distribution System must be expanded to include key nutritious staples such as pulses and oils. Additionally, implementing a door-to-door ration delivery system will ensure that remote tribal populations have access to essential food supplies consistently.

➤ **Strengthening Community Forest Rights (CFR)**

- Providing enhanced access to Community Forest Rights enables tribes to better manage forest resources, ensuring sustainable practices in harvesting Minor Forest Produce (MFP). This grants tribes more control over their traditional resources, fostering both economic self-reliance and environmental sustainability.

➤ **Ensuring Fair Market Access for MFPs**

- Many tribal groups depend on collecting and selling MFPs like honey, tamarind, wild mushrooms, and mango kernels. To ensure economic self-sufficiency, it is crucial to secure fair market prices for these products. Government initiatives, such as those supported by the Tribal Cooperative Marketing Development Federation of India (TRIFED), can facilitate market linkages, connecting tribal producers with larger commercial markets to ensure just compensation.

➤ **Protection Against Predatory Financial Practices**

- Regulating microfinance institutions to prevent exploitative lending is essential for protecting tribal populations from debt traps. By curbing abusive financial practices, tribal communities can avoid falling deeper into poverty and ensure access to credit on fair terms.

➤ **Building on the Successes of Past Programs**

- It is important to review and analyze the outcomes of previous welfare programs like OTDP and PDS reforms to learn from both successes and failures. Drawing

lessons from these initiatives can help refine strategies for future development, ensuring that tribal communities are better supported.

➤ **Fostering Collaboration Through Strategic Partnerships**

- Strengthening the resilience of tribal communities requires effective collaboration between district authorities, local governance bodies, non-governmental organizations (NGOs), and civil society groups. Such partnerships can enable a more integrated approach to community development and resilience building.

➤ **Adding Value to MFPs**

- Encouraging the processing of Minor Forest Produce (MFPs), such as turning mango kernels into products for the cosmetics, confectionery, and pharmaceutical industries, can create new income streams for tribal communities. This diversification in livelihood sources can enhance economic stability and reduce their dependence on raw, low-value resources.

Conclusion:

- The tragic deaths due to the consumption of mango kernels in Odisha shine a spotlight on the grave challenges tribal communities face, such as poverty, food insecurity, and economic exploitation. To alleviate these issues, it is crucial to strengthen forest rights, improve market access, ensure fair pricing for MFPs, reform government schemes, and build effective partnerships. By implementing these measures, tribal populations can achieve long-term sustainability, better livelihoods, and empowerment, thus breaking free from the cycle of deprivation.

Inter-State Council (ISC): Enhancing India's Federal Framework

Context:

- Recently, the Indian government reconstituted the Inter-State Council (ISC) after a gap of two years, underscoring a renewed focus on Centre-State relations and the principle of cooperative federalism. The Prime Minister has been designated as the chairperson, emphasizing the importance of collaboration between the Centre and States for effective governance.



What is the Inter-State Council (ISC)?

➤ **Creation and Constitutional Basis**

- The Inter-State Council was set up to promote coordination between the Centre and States. It was created under Article 263 of the Indian Constitution,

which authorizes the President of India to establish such a council to improve cooperation between the Union and States.

- The Sarkaria Commission (1988) proposed making the ISC a permanent body to ensure continuous cooperation. As a result, the ISC was formally established in 1990 via a Presidential Order.

➤ **Functions of the ISC**

- The primary role of the ISC is to discuss and resolve issues of common concern between the Centre and States. It also makes recommendations to coordinate policies and actions that affect both Centre-State and inter-State relations. The ISC acts as a platform to explore and resolve challenges related to governance.

➤ **Constitution of the ISC**

- Chairperson: The Prime Minister of India.
- Members: Chief Ministers (CMs) of all States, Chief Ministers of Union Territories with Legislative Assemblies, and Administrators of Union Territories without Legislative Assemblies. Additionally, six Union Cabinet Ministers are nominated by the Prime Minister to participate in the ISC.
- Over time, the membership has been revised with amendments in 1990 and 1996, allowing Governors of States under President's rule to attend meetings and nominating permanent invitees from Union Ministers.

➤ **Standing Committee**

- To ensure ongoing consultation, a Standing Committee was set up in 1996, headed by the Union Home Minister. This committee processes matters for the ISC's consideration and is periodically reconstituted with the Chairman's approval.

➤ **Secretariat of the ISC**

- The Inter-State Council Secretariat (ISCS), created in 1991, is responsible for overseeing the functions of the ISC. Located in New Delhi, it is managed by a Secretary to the Government of India.
- In 2011, the Zonal Councils transferred their secretarial duties to the ISCS.

➤ **Advantages of the ISC**

- Enhanced Social Legitimacy: Policies developed through ISC discussions are more likely to gain social acceptance, reducing friction between the Centre and States.
- Balanced Power Dynamics: The ISC ensures that decisions made by the Union are in line with the principles of federalism, preventing either the Centre or States from overpowering the other. This becomes especially important during significant reforms such as the Goods and Services Tax (GST) or demonetization.



Other Significant Inter-State and Centre-State Bodies

➤ Zonal Councils

- These statutory bodies were created under the States Reorganisation Act of 1956. There are five Zonal Councils (Northern, Central, Eastern, Western, and Southern) aimed at promoting interstate cooperation. Each council is headed by the Union Home Minister, with Chief Ministers of the constituent states serving as Vice-Chairpersons on a rotating basis.

➤ North Eastern Council (NEC)

- Established in 1972 under the North Eastern Council Act, this body focuses on the development of the North Eastern region.

➤ River Water Dispute Tribunals

- The Inter-State River Water Disputes Act, 1956 allows for the creation of tribunals to resolve conflicts between states over the sharing of river waters. Article 262 empowers Parliament to legislate on issues related to the distribution and management of inter-state rivers.

➤ Goods and Services Tax (GST) Council

- Established under Article 279A, the GST Council is a constitutional body responsible for key decisions related to GST implementation. It includes the Union Finance Minister, Union Revenue Minister, and State Finance Ministers, working on a consensus-based approach to resolve tax-related matters.

Challenges Concerning the Inter-State Council (ISC)

➤ Irregular Meetings

- Despite the mandate for frequent meetings (at least three times a year), the ISC has faced criticism for its infrequent sessions. Since its inception in 1990, the ISC has convened only 11 times, with the most recent meeting occurring in July 2016. This irregularity hinders the ISC's ability to address issues in a timely manner.

➤ Non-Enforceable Recommendations

- The ISC's recommendations are advisory and do not carry binding legal authority. This limits its potential to resolve disputes and diminishes its role in promoting effective coordination between the Centre and States. Additionally, there is often a lack of follow-through on the recommendations made by the ISC, leading to a gap between discussion and implementation.

➤ Political Influences

- The political dynamics at play between the central and state governments often impact the ISC's ability to reach consensus. Differences in political ideologies may obstruct progress on important issues, reducing the ISC's effectiveness as a forum for resolving conflicts.



Proposed Reforms for Improving the ISC's Effectiveness

➤ Amendment of Article 263

- The Punchhi Commission (2010) suggested that the ISC be made a more specialized body to handle complex intergovernmental relations and challenges of federalism. Amending Article 263 to expand the ISC's scope could transform it into a more proactive and authoritative body.

➤ Regular and Timely Meetings

- Reinstating the requirement for consistent meetings would help the ISC stay engaged with the critical issues affecting states and the Union. Ensuring that the ISC convenes more regularly would strengthen its role in facilitating timely policy discussions and resolutions.

➤ Clear Agenda and Priorities

- Each ISC meeting should have a focused agenda, prioritizing urgent issues like water disputes, infrastructure projects, and economic cooperation. This approach would enhance the productivity and outcome of each session.

➤ Incorporating Technology

- Digital tools should be used to streamline communication, data sharing, and decision-making within the ISC. Embracing technology can make the ISC more efficient and responsive, facilitating quicker resolutions to inter-State and Centre-State challenges.

Conclusion:

- To truly strengthen India's federal system, the ISC must transition from an advisory body to a proactive and empowered institution. Key reforms such as enhancing its constitutional role, ensuring regular meetings, and incorporating technology are critical for its evolution. These measures will foster greater cooperation between the Centre and States, ultimately addressing the complexities of Centre-State relations and contributing to more effective governance and development in India.

Conduct Rules for Civil Servants in India

☛ Context:

- The recent suspension of two IAS officers in Kerala for violating the All-India Services (Conduct) Rules, 1968 (AIS rules) has brought attention to the ethical standards and behavioral expectations for civil servants in India. One officer was accused of making derogatory



comments about a senior colleague on social media, while the other allegedly created a religion-based WhatsApp group. These incidents highlight the critical importance of maintaining the integrity and professionalism expected of civil servants.

Understanding the All-India Services (Conduct) Rules, 1968

- The AIS Rules, 1968 are designed to ensure that officers from the Indian Administrative Service (IAS), Indian Police Service (IPS), and Indian Forest Service (IFS) maintain high standards of conduct and professionalism. These rules focus on impartiality, integrity, and adherence to constitutional values.

► Key Standards Outlined by AIS Rules

1. **Ethical Standards:** Civil servants must demonstrate honesty, integrity, and neutrality in their work, ensuring that their actions are accountable and transparent.
2. **Upholding Constitutional Values:** Officers are expected to uphold the Constitution and reflect the values enshrined within it, showing loyalty and dedication to the nation.
3. **Engagement in Public Media:** Civil servants may use public platforms professionally but are prohibited from criticizing government policies or engaging in contentious discussions that could compromise their neutrality.
4. **General Conduct Clause:** Officers must refrain from actions deemed "unbecoming" of their service. This broad rule ensures that civil servants maintain the dignity and decorum associated with their positions.

Challenges with the AIS Rules, 1968

- While the AIS rules provide a comprehensive framework for civil servants, there are notable concerns about their application and enforcement:
 1. **Lack of Explicit Social Media Guidelines:** The rules do not clearly address conduct on social media, creating ambiguity regarding what constitutes acceptable online behavior. This gap is increasingly problematic in the digital age, where civil servants often engage publicly on social platforms.
 2. **Vague "Unbecoming Conduct" Clause:** The clause is broadly defined, leading to inconsistent enforcement and potential misuse. The lack of clarity on what constitutes "unbecoming conduct" leaves room for subjective interpretations.
 3. **Power Imbalance in Enforcement:** Enforcement of these rules often falls to senior officers or government authorities, which can lead to biased or arbitrary action, especially when junior officers face disproportionate punishment.

Role of Civil Services in Indian Democracy

- Civil servants play an integral role in India's democratic governance by facilitating policy formulation, ensuring the implementation of laws, and

maintaining stability across governments. They function as the backbone of the administrative apparatus and perform several key functions:

1. **Policy Formulation:** Civil servants contribute expertise in the creation and determination of public policies.
2. **Policy Implementation:** They are responsible for ensuring that policies passed by the legislature are executed effectively at the ground level.
3. **Delegated Legislation:** Civil servants often frame detailed rules and regulations under the guidance of the legislature.
4. **Administrative Adjudication:** Civil servants have quasi-judicial powers to resolve disputes involving citizens' rights and obligations.
5. **Stability and Continuity:** They ensure governance continuity during political changes, maintaining smooth administrative processes.
6. **Guardians of National Ideals:** Civil servants safeguard the values, principles, and beliefs of the nation.

Constitutional Safeguards for Civil Servants: Article 311

- Article 311 of the Indian Constitution provides protections for civil servants against arbitrary dismissal, ensuring fair treatment:
 - **Article 311 (1):** Ensures that no government employee can be dismissed, removed, or reduced in rank by an authority subordinate to the one that appointed them.
 - **Article 311 (2):** Mandates that a civil servant cannot be dismissed or removed without an inquiry, where they are informed of the charges and given a chance to defend themselves.
- Exceptions to this inquiry requirement include:
 - **Criminal Conviction:** If a civil servant is dismissed based on a criminal conviction.
 - **Practical Impossibility:** If conducting an inquiry is not practically possible.
 - **National Security:** If an inquiry is not expedient for reasons of national security.

Way Forward: Addressing Key Issues in Civil Servant Conduct Rules

- To ensure that the AIS Rules, 1968 remain relevant and effective in modern governance, several reforms and clarifications are needed:
- **Clear Social Media Guidelines:** The rules should specifically address the use of social media, defining acceptable and professional engagement by civil servants. Clear guidelines will help officers navigate their online presence responsibly while maintaining neutrality and avoiding personal or partisan commentary.
- **Clarification of "Unbecoming Conduct":** To prevent arbitrary enforcement, the term "unbecoming" should be more clearly defined. Providing examples of past infractions will help establish a framework for consistent application of this rule.
- **Responsible Anonymity:** Civil servants must be reminded of their duty to

remain neutral and impartial, particularly in the era of social media, where their visibility can conflict with the expectation of discretion in their roles.

- **Judicious Use of Social Media:** Officers, particularly younger ones, should be reminded that while social media can be a powerful tool for communication, it must be used with responsibility to maintain the dignity and impartiality of the civil service. Personal opinions or partisan statements that may undermine their role as public servants should be avoided.

Conclusion

- The All-India Services (Conduct) Rules, 1968 are essential for maintaining the integrity, professionalism, and neutrality of civil servants in India. However, the rapid growth of social media, along with increasing pressures on public officials, necessitates reforms to ensure these rules remain effective in a modern, digital world. By introducing clearer guidelines and addressing ambiguities in the rules, India can ensure that its civil servants continue to serve as impartial and dedicated custodians of public welfare and governance.

Yanadi Tribe

Relevance : GS II - Social Justice

- **In News:** Three children from the Yanadi tribe, who had gone missing from their residences in Kalekhanpeta, Machilipatnam, have been located recently.



General Information about the Yanadi Tribe:

- **Tribal Status:** The Yanadi are recognized as a scheduled tribe in Andhra Pradesh, India.
- **Etymology:** The tribe's name, "Yanadi," is believed to be derived from the Sanskrit word anadi, meaning "without origin."
- **Language:** The Yanadi people primarily speak Telugu as their native language.

Way of Life and Livelihood:

- **Lifestyle:** The Yanadi tribe has a nomadic existence, living in harmony with non-tribal communities and often relying on shared resources.
- **Occupation:** Traditionally, the Yanadi have been hunters, gatherers, and agricultural workers, sustaining themselves through these practices.

Health and Spiritual Practices:

- **Health Traditions:** The Yanadi possess a wealth of traditional knowledge

regarding herbal treatments, using them for various health issues in their community.

- **Religious Practices:** The Yanadi follow Hinduism, observing religious festivals and worshipping household deities in special shrines known as Devuru Indlu.

Cultural Traditions:

- **Dance:** The Yanadi are known for their Dhimsa Dance, which is performed during festivals and special ceremonies, showcasing an important aspect of their cultural identity.

Social Stratification:

- The Yanadi tribe is categorized into four distinct endogamous groups:
 - ✓ **Manchi Yanadis (Reddi Yanadis)** – Primarily engaged in agriculture and domestic work.
 - ✓ **Adivi Yanadis** – A group that lives deep in the forests, dependent on forest resources.
 - ✓ **Paki Yanadis** – Traditionally scavengers who rely on discarded items.
 - ✓ **Challa Yanadis** – Known for collecting leftover food from discarded plates.

Challenges and Socio-Economic Issues:

- **Vulnerability:** The Yanadi are considered one of the most marginalized tribal communities in India, grappling with severe poverty and social exclusion.
- **Government Initiatives:** In response to their challenges, the government established the Integrated Tribal Development Agency (ITDA) in 2001 in Nellore to promote their welfare and improve their living standards.

Conclusion:

- The Yanadi tribe, with its rich cultural legacy and profound knowledge of nature, continues to face significant social and economic hardships. Continued governmental and social interventions are vital for their development and integration into the broader societal framework.

Orphan Drugs & Their Importance in Treating Rare Conditions

Relevance : GS II - Health Sector

- **In News:** Orphan drugs have received increasing attention in India following the introduction of the National Policy for Rare Diseases (NPRD) in 2021.
- These medicines are essential for the treatment



of rare or “orphan” diseases, which typically lack sufficient research & therapeutic options compared to more prevalent conditions.

About Orphan Diseases and Their Scope:

- **Definition of Rare Diseases:** A disease is considered rare if it affects fewer than 200,000 individuals in the United States or fewer than 1 in 10,000 people within the European Union. Although India does not have a formal definition based on prevalence, the NPRD establishes a low threshold for identifying rare diseases and framing suitable responses.

Categorization of Rare Diseases under NPRD:

- The NPRD categorizes rare diseases into three primary groups to enable targeted treatment approaches:
 - ✓ **Group 1:** Disorders that can be addressed with one-time interventions, such as Lysosomal Storage Disorders (LSDs) treated with Hematopoietic Stem Cell Transplantation (HSCT).
 - ✓ **Group 2:** Diseases requiring long-term or ongoing treatment, but with relatively lower costs, such as Phenylketonuria (PKU) and Maple Syrup Urine Disease (MSUD).
 - ✓ **Group 3:** Conditions like Gaucher Disease and Pompe Disease, which are treatable but come with high expenses and demand continuous care.

Types of Orphan Drugs and Their Targeted Conditions:

- **Orphan drugs are specifically formulated to treat rare diseases, including:**
 - ✓ Genetic Disorders
 - ✓ Rare Types of Cancer
 - ✓ Metabolic Disorders
 - ✓ Autoimmune Diseases
- **Examples of orphan drugs include:**
 - ✓ Ivacaftor (used in cystic fibrosis), Alglucerase (used for Gaucher disease), Coagulation Factor IX (used for hemophilia B), Imatinib (used in leukemia treatment), Rucaparib (used for ovarian cancer)

Criteria for Orphan Drug Designation:

- To earn orphan drug status, certain criteria must be fulfilled:
 - ✓ **Low Prevalence:** The condition should be rare, affecting a small number of individuals.
 - ✓ **Lack of Existing Therapies:** The condition must not have effective treatments available, or the orphan drug must demonstrate clear advantages over current options.

Regulatory Approval and Incentives for Orphan Drugs:

- **Approval Process:** Developers of orphan drugs are required to provide scientific evidence showing that their drug has the potential to treat or alleviate the condition. This evidence can be submitted at any stage, from early research to advanced clinical trials.
- **Incentives for Development:** Once granted orphan drug designation, these medications receive several benefits, such as:
 - ✓ **Market Exclusivity:** Protection against competitors producing the drug for a specified period.
 - ✓ **Tax Benefits:** Tax credits for research and development costs.
 - ✓ **Fee Exemptions:** Reduced or waived regulatory application fees.

PM-Vidyalaxmi Scheme: A Boost for Meritorious Students

Relevance: GS II - Education Sector

- **In News:** The Union Cabinet has approved the launch of the PM-Vidyalaxmi Scheme, a new Central Sector initiative aimed at providing financial support to deserving students for their higher education.
- The scheme aligns with the recommendations of the National Education Policy (NEP), 2020, which advocates for offering financial aid to academically gifted students in both public and private higher education institutions.



Salient Features of the PM-Vidyalaxmi Scheme:

- **Objective:** The primary goal of the PM-Vidyalaxmi scheme is to offer financial support to meritorious students by providing collateral-free and guarantor-free loans. These loans will cover the entire tuition fee as well as other expenses associated with higher education courses.
- **Eligibility:** The scheme is available to any student who secures admission into Quality Higher Education Institutions (QHEIs), which have been recognized based on the National Institutional Ranking Framework (NIRF).
- **Coverage:** The scheme will cover 860 QHEIs, which will benefit over 22 lakh students across the country.
- **Loan Details and Benefits**
 - ✓ Loans up to Rs. 7.5 lakh will be provided with a 75% credit guarantee by the Government of India.
 - ✓ A 3% interest subvention will be offered on loans up to Rs. 10 lakh during the moratorium period for eligible students.

- **Digital Platform for Application and Disbursement**
- The entire process of loan application and interest subvention disbursement will be managed through a unified digital portal, PM-Vidyalaxmi.
 - ✓ The portal allows students to apply for education loans and submit requests for disbursement of interest subvention.
 - ✓ Payment of interest subvention will be made through E-vouchers and Central Bank Digital Currency (CBDC) wallets.
- **Supplementing Existing Schemes:** The PM-Vidyalaxmi scheme will work in tandem with the Pradhan Mantri Uchchatar Shiksha Protsahan (PM-USP) Scheme to further support students in their academic pursuits.

About the Pradhan Mantri Uchchatar Shiksha Protsahan (PM-USP) Scheme:

- **Objective:** The PM-USP Scheme aims to provide financial assistance to talented students from economically disadvantaged backgrounds, covering part of their daily expenses while pursuing higher education.
- **Eligibility:** Eligibility is determined based on the results of the Higher Secondary or Class 12th Board Examination.
- **Scholarship Details:** The scheme offers a maximum of 82,000 fresh scholarships per year.
- **Key Components:**
 - The PM-USP scheme includes two critical components:
 - ✓ Central Sector Interest Subsidy (CSIS)
 - ✓ Credit Guarantee Fund Scheme for Education Loans (CGFSEL).

Conclusion:

- The PM-Vidyalaxmi and PM-USP schemes represent a significant step toward enhancing access to higher education for meritorious students, particularly those from underprivileged backgrounds.
- By providing financial relief, these initiatives aim to ease the burden on students and enable them to pursue their academic and career goals without the constraints of financial challenges.

Prior Sanction Mandatory for Prosecution of Public Servants in Money Laundering Cases

Relevance: GS II - Governance

- In News:** The Supreme Court (SC) has ruled that prior sanction is mandatory to prosecute public servants under the Prevention of Money Laundering Act (PMLA).
- This decision introduces a significant procedural safeguard within the stringent framework of the PMLA, ensuring an additional level of accountability in such prosecutions.

SC AFFIRMS NEED FOR SANCTION IN PROSECUTION OF PUBLIC SERVANTS UNDER PMLA



Key Highlights of the Directorate of Enforcement vs. Bibhu Prasad Acharya Case:

- Primacy of CrPC:** The court clarified that PMLA provisions do not override the requirement for prior sanction under Section 197 of the Criminal Procedure Code (CrPC).
- Update Under Bhartiya Nagrik Suraksha Sanhita:** Section 197 of CrPC corresponds to Section 218 of the Bhartiya Nagrik Suraksha Sanhita, 2023, which came into effect on July 1, 2024, replacing the CrPC.
- Section 197 of CrPC:** This section aims to protect public servants by restricting prosecutions against them for actions undertaken in the course of their duties.
- Exceptions:** Such protection is not absolute; public servants can be prosecuted if prior sanction is obtained from the relevant government authority.

Protections Afforded to Civil Servants:

- Articles 311(1) and 311(2):** These constitutional provisions provide protective safeguards for civil servants in India.
- Public Servants (Inquiries) Act, 1850:** This legislation mandates fair and transparent inquiry procedures, upholding principles of natural justice within the administration.

About the Prevention of Money Laundering Act (PMLA), 2002:

- Overview:** PMLA is a comprehensive statute aimed at preventing money laundering and allowing for the confiscation of property derived from illegal earnings.
- Enforcement:** The Act is implemented by the Enforcement Directorate (ED) and the Financial Intelligence Unit-India (FIU-IND).
- Definition of Money Laundering:** Under the PMLA, money laundering refers

to actions that attempt to disguise the origins of illicit earnings to make them appear legal. This includes:

- ✓ Concealing proceeds of crime
- ✓ Possessing proceeds of crime
- ✓ Acquiring proceeds of crime, among other activities

Conclusion:

- The Supreme Court's ruling underscores the importance of procedural safeguards in prosecuting public servants under the Prevention of Money Laundering Act (PMLA). By mandating prior sanction, the judgment reinforces the balance between ensuring accountability in anti-corruption efforts and protecting public servants from frivolous litigation for actions performed in their official capacity.
- This decision also emphasizes the continued relevance of the Criminal Procedure Code and related safeguards, strengthening principles of due process. In doing so, the court has added an essential layer of oversight that aligns with India's commitment to a fair and just legal system, particularly in complex cases of financial misconduct.

First Global Ministerial Conference on Ending Violence Against Children

Relevance: GS II - Social Justice

- **In News:** The 1st Global Ministerial Conference on Ending Violence Against Children was held in Bogotá, Colombia, marking a significant step in the global commitment to protect children from all forms of violence.
- The conference was hosted by Colombia and Sweden, in partnership with UNICEF, the WHO, and the UN Special Representative of the Secretary-General on Ending Violence Against Children.



Violence Against Children/Child Maltreatment:

- **Definition:** Violence against children encompasses all forms of physical and emotional abuse, as well as sexual exploitation.
- **Global Impact:** It is estimated that half of the world's children are affected by violence, with corporal punishment affecting three out of every five children regularly in their homes. However, much of this violence remains concealed, as fewer than half of the children who experience violence report it, and under 10% receive any form of assistance (WHO).

Consequences of Violence Against Children:

- **Health and Psychological Impacts:** Exposure to violence can lead to severe psychological consequences, including anxiety and depression.
- **Physical Consequences:** Children who suffer violence are at a higher risk of contracting Sexually Transmitted Infections (STIs).
- **Developmental Disruptions:** Early maltreatment is linked to a 13% higher likelihood of school dropout, hindering a child's future prospects and well-being.

Measures Required:

- **Preventive Strategies:** Evidence-based interventions are critical to prevent childhood violence, especially those that target the root causes and provide long-term solutions.
- **Safer Learning Spaces:** School-based programs aimed at preventing bullying, improving social skills, and fostering safer environments are essential for protecting children in educational settings.
- **Digital Safety:** With the rise of online exploitation, adopting new measures for children's protection in the digital space is necessary.

Global Initiatives:

- ✓ **INSPIRE Initiative:** Led by the WHO and UNICEF, it includes seven strategies to end violence against children.
- ✓ **UNICEF's Safe to Learn Program:** Focuses on creating safe educational environments free from violence.
- ✓ **UN Convention on the Rights of the Child (CRC):** Adopted in 1989, it provides a comprehensive legal framework for child protection worldwide.

India's Initiatives:

- **Constitutional Provisions:**
 - ✓ **Article 21A:** Guarantees the right to free and compulsory education for all children aged 6 to 14.
 - ✓ **Article 24:** Prohibits the employment of children under the age of 14 in factories and mines.
- **Legal Measures:**
 - ✓ **POCSO Act, 2012:** Protection of Children from Sexual Offences Act.
 - ✓ **Juvenile Justice Act, 2015:** Provides protection to children in need of care and protection.
- **Other Initiatives:**
 - ✓ **Operation Nanhe Farishte:** An initiative by the Railway Protection Force (RPF) aimed at rescuing children from trafficking.



Accessibility for Persons with Disabilities as a Fundamental Right

Relevance : GS II - Governance

- **In News:** The Supreme Court, in the case of Rajive Raturi vs. Union of India & Ors., has affirmed that the right of persons with disabilities (PwDs) to access environments, services, and opportunities is an essential human and fundamental right.
- This landmark judgment reinforces the social model of disability, emphasizing the need for societal change to ensure inclusion and equality for PwDs.



Social Model of Disability:

- The judgment is grounded in the social model of disability, which advocates for the removal of social barriers that prevent PwDs from participating fully in society. The focus is on creating an inclusive society where disabilities are addressed through changes in the environment, services, and opportunities available.

Issues Faced by PwDs (As Per CDS NALSAR Report):

- **Accessibility Barriers:** PwDs face significant barriers in accessing public spaces such as courts, schools, public transport, and even prisons due to inadequate infrastructure.
- **Intersectionality and Compounded Discrimination:** PwDs experience heightened discrimination when disabilities intersect with other factors such as caste and gender, leading to compounded marginalization.
- **Inconsistency in Legal Framework:** While the Rights of Persons with Disabilities (RPwD) Act, 2016 mandates compliance with specific accessibility rules, Rule 15 under the RPwD Rules, 2017 only offers self-regulatory guidelines, causing legal inconsistencies.

Key Highlights of the Judgment:

- **Rule 15(1) Declared Ultra Vires:** The Court found Rule 15(1) to be ultra vires (beyond the powers) of the legislative intent behind the RPwD Act, which mandates mandatory compliance to accessibility provisions.
- **Principles of Accessibility:** The Court outlined essential principles for ensuring accessibility, which include:
 - ✓ Universal design
 - ✓ Comprehensive inclusion across various disabilities

- ✓ Integration of assistive technology
- ✓ Stakeholder consultation
- **Two-Pronged Approach:** The judgment emphasizes both ensuring accessibility in existing institutions and activities, and transforming new infrastructure and future initiatives to be inclusive from the outset.

Initiatives for Accessibility for PwDs

- **Rights-Based Approach:** The Rights of Persons with Disabilities Act, 2016 (RPwD Act) is India's legal framework for ensuring the rights of PwDs, in line with the United Nations Convention on the Rights of Persons with Disabilities (CRPD).
- **Article 9 of CRPD:** This article specifically focuses on accessibility, urging State parties to ensure that PwDs have access to the physical environment, transportation, information, and communication.
- **Accessible India Campaign (Sugamya Bharat Abhiyan):** A national initiative launched to make public spaces and government services accessible for PwDs.

Important Judicial Pronouncements

- **State of Himachal Pradesh v. Umed Ram Sharma (1986):** This judgment included the right to accessibility as part of the broader right to life under Article 21 of the Constitution.
- **Disabled Rights Group v. Union of India (2017):** The Court issued directions to ensure the reservation of seats for PwDs in educational institutions, further solidifying their rights to equal access.

Parliamentary Committee to Review Measures Against Fake News

Relevance : GS II - Governance

- **In News:** The Parliamentary Standing Committee on Communications and Information Technology is set to examine existing mechanisms for curbing fake news, as concerns grow over its impact on society and governance.



Understanding Fake News:

- While there is no formal legal definition, “fake news” typically refers to stories that are false or misleading, lacking reliable sources, facts, or quotes.
 - ✓ **Types of Fake News:** Includes misinformation (unintentional spread of inaccuracies) and disinformation (intentional spread of false information).

Need for Regulating Fake News:

- **Right to Information (RTI):** Fake news undermines the citizen's RTI, a fundamental right protected under Article 19(1)(a) of the Constitution, as established by the Supreme Court in the case of 'Raj Narayan vs. Uttar Pradesh Government' (1975).
- **Threats to Democracy:** Fake news can sway voter behavior, spark riots, and disrupt social order.
- **Information Bubbles:** Online algorithms can reinforce biases and prejudice, such as racism or misogyny, by creating echo chambers around fake news.

Challenges in Regulating Fake News:

- **Growing Internet Penetration:** Over 55% of the Indian population had Internet access in 2023, as per an IAMAI report, increasing the reach of fake news.
- **Digital Illiteracy:** Only 38% of households in India are digitally literate, limiting their ability to verify information.
- **Risk to Free Speech:** Regulating fake news poses potential threats to freedom of expression. For instance, the Bombay High Court recently struck down the Fact Check Unit (FCU) of the PIB, which flagged "fake news" related to government matters on social media.

Initiatives to Curb Fake News:

- **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021:** Establishes a regulatory framework for online publishers of news, current affairs content, and curated audio-visual content.
- **Bharatiya Nyaya Sanhita:** Section 353 criminalizes the spread of false information or rumors, including through digital means, with the intent to cause public harm.
- **Information Technology Act, 2000:** Section 66D of the Act prescribes penalties for online cheating or impersonation, which can apply to the spread of fake news.

'Rationalising the Public Distribution System

Relevance: GS II - Governance

- **In News:** The Indian Council for Research on International Economic Relations (ICRIER) published a policy brief emphasizing the persistent leakages in the Public Distribution System (PDS) and recommending strategies to rationalize it for improved food and nutritional security.



Key Findings

- **Leakages in PDS**
 - ✓ 28% of allocated grains supplied by the Food Corporation of India (FCI) and State Governments fail to reach intended beneficiaries.
 - ✓ Financial loss due to leakages amounts to approximately ₹69,108 crores.
- **Efficacy of Recent Reforms**
 - ✓ Linking ration cards with Aadhaar and installation of Point of Sale (PoS) machines in 95% of Fair Price Shops (FPSs) have improved distribution but have not completely eliminated leakages.
- **Regional Variations in PDS Leakages**
 - ✓ States like Bihar and West Bengal have shown significant improvement in curbing leakages.
 - ✓ High leakages persist in North-Eastern states such as Arunachal Pradesh, Nagaland, and Gujarat, primarily due to the lack of PDS digitalization.

Recommendations:

- **Effective Targeting of Beneficiaries**
 - ✓ Reduce PDS coverage from the current 57% of the population to the bottom 15% for free food distribution.
 - ✓ For the remaining population, grains can be provided at 50% of Minimum Support Price (MSP).
- **Shift to Direct Benefit Transfer (DBT)**
 - ✓ DBT minimizes leakages, reduces administrative costs, and allows citizens flexibility in dietary choices.
- **Transforming FPS into Nutrition Hubs**
 - ✓ Implement a Food Coupon Approach in select FPSs to address grain siphoning and promote nutritional security.

About the Public Distribution System (PDS):

- **Overview**
 - ✓ By coverage, PDS is the world's largest food distribution program.
 - ✓ Operates under the joint responsibility of the Centre and States:
 - **Centre (through FCI):** Procurement, storage, transportation, and bulk allocation of food grains.
 - **States:** Allocation within states, identification of eligible families, issuing ration cards, and FPS supervision.
- **Evolution of PDS**
 1. **Revamped PDS (1992):** Enhanced targeting and efficiency.
 2. **Targeted PDS (TPDS) (1997):** Prioritized food grain distribution to



economically weaker sections.

3. **Antyodaya Anna Yojana (AAY) (2000):** Focused on the poorest of the poor.
4. **National Food Security Act (NFSA) (2013):** Legal entitlement to food grains for 67% of the population.
5. **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) (2020):** Additional free food grains during COVID-19.

Conclusion:

- The policy brief's recommendations aim to minimize inefficiencies, promote better targeting, and modernize FPS operations, ensuring improved food and nutritional security for India's most vulnerable populations.

One Nation One Subscription (ONOS)

Relevance : GS II - Education Sector

- **In News:** The Cabinet has sanctioned the One Nation One Subscription (ONOS) initiative, which aligns with the objectives of Viksit Bharat@2047, National Education Policy (NEP) 2020, and the Anusandhan National Research Foundation (ANRF).



December - 2024

Overview of ONOS:

The Initiative

- ✓ **Nature:** A Union Sector Program designed to provide nationwide access to academic research articles and journal publications through a unified platform.
- ✓ **Process:** Fully digital, intuitive, and streamlined for easy operation.
- ✓ **Budgetary Allocation:** ₹6,000 crores for the period 2025-2027.
- ✓ **Governing Body:** Ministry of Education.

Execution:

- ✓ **Centralized Portal:** Facilitated by the Department of Higher Education (DHE) via a national platform, "One Nation One Subscription."
- ✓ **Oversight:**
 - Regular assessments by ANRF to monitor utilization and analyze contributions from Indian authors associated with the subscribing institutions.

UPSC

- Coordinated access provided by Information and Library Network (INFLIBNET), an autonomous inter-university center under the University Grants Commission (UGC).

Target Groups:

- **Covered Institutions:** Higher Educational Institutions (HEIs) under Central/ State Governments and Central Government Research & Development (R&D) establishments.

Advantages:

- **Institutional Reach**
 - ✓ ONOS extends benefits to 6,300+ public educational and research institutions, reaching approximately 1.8 crore scholars.
- **Improved Access**
 - ✓ Enables availability of academic resources in tier-2 and tier-3 cities, reducing regional imbalances in research opportunities.

R&D Developments in Budget 2024-25:

- **Anusandhan National Research Foundation (ANRF)**
 - ✓ **Formation:** Established under the ANRF Act 2023 to provide top-tier guidance for scientific exploration.
 - ✓ **Objective:** Encourages synergies between industry, academic institutions, government agencies, and research organizations.
- **Private Sector-Led Research and Innovation**
 - ✓ **Funding Pool:** ₹1 lakh crore earmarked to promote private-sector-led exploration and innovation at a commercial level.
 - ✓ **Startup Support Fund:** ₹1,000 crore allocated to foster emerging businesses and initiatives in the space sector.

Supreme Court Validates Inclusion of 'Socialist' and 'Secular' in the Preamble

Relevance: GS II - Polity

- **In News:** The Supreme Court (SC) has upheld the legitimacy of including the terms 'socialist' and 'secular' in the Preamble to the Constitution. These terms were introduced via the 42nd Constitutional Amendment Act, 1976.



Case Background:

- **Legal Challenge:** Filed in 2020, a set of petitions contested the incorporation of 'socialist' and 'secular', arguing that they altered the original intent of the Preamble.
- **Additions by the 42nd Amendment:** Along with these terms, the word 'integrity' was also added to the Preamble.

Supreme Court Observations:

- **Constitution as a Progressive Document**
 - ✓ The SC emphasized that the Constitution is evolutionary, adapting to the needs of society over time.
 - ✓ The insertion of 'socialist' and 'secular' cannot be invalidated solely because the Preamble continues to bear its original adoption date of November 26, 1949.
- **Article 368 and Authority of Parliament**
 - ✓ Article 368 grants Parliament the authority to amend any section of the Constitution, including the Preamble.
 - ✓ The SC reiterated that this power includes adding new principles, provided they do not compromise the core framework of the Constitution.
- **Secularism**
 - ✓ Secularism ensures the State remains impartial to religion, neither endorsing nor discouraging the practice of any faith.
 - ✓ It guarantees that the State has no official religion.
 - ✓ This principle is safeguarded by Articles 14, 15, and 16, as well as Articles 25, 26, 29, and 30.
- **Socialism**
 - ✓ Socialism in the Indian context denotes economic and social justice, balancing welfare measures with the freedom for private enterprise.
 - ✓ It does not hinder private trade and industry, a right enshrined in Article 19(1) (g).
- **Integration of Terms**
 - ✓ The SC noted that incorporating 'socialist' and 'secular' does not obstruct the functioning of democratically elected governments, as long as their actions adhere to constitutional provisions and respect the core principles of the Constitution.

Significant Judgements Referenced:

- **Kesavananda Bharati v. State of Kerala (1973)**
 - ✓ Asserted that secularism is an essential component of the Constitution,

immune to amendments that seek to dismantle it.

- **S. R. Bommai v. Union of India (1994)**
 - ✓ Confirmed that secularism is a cornerstone of India's constitutional framework, ensuring no favoritism toward any religion by the State.
- **R. C. Poudyal v. Union of India (1994)**
 - ✓ Highlighted that secularism reflects the nation's commitment to equality and non-discrimination across all faiths.
- **Property Owners Association v. State of Maharashtra (2023)**
 - ✓ Stated that the Constitution permits governments to adopt economic policies that align with public welfare objectives, while maintaining accountability to the electorate.

Koraga tribal community

Relevance: GS II - Social Justice

- **In News:** The Koraga tribal community in Kerala is set to receive land titles as part of the Operation Smile project initiated by the Kerala government.



About the Koraga Tribe:

- **Habitat**
 - ✓ The Koraga tribe is categorized as a Particularly Vulnerable Tribal Group (PVTG).
 - ✓ Found predominantly in the Kasaragod district of Kerala and parts of Karnataka.
 - ✓ PVTGs are identified by the Ministry of Home Affairs, with 75 communities currently classified under this category.
- **Status:** The Koraga community was recognized as a Scheduled Tribe (ST) under the Presidential Order of 1956.
- **Traditional Occupation:** Historically known for their skill in basket making.
- **Language:** Primarily speak Tulu but also possess their own distinct language.

About Operation Smile:

- **Objective:** Launched by the Kerala government to rehabilitate and support homeless individuals, including providing land titles to marginalized communities such as the Koragas.
- **Significance:** Aimed at empowering vulnerable groups and ensuring their access to basic rights and resources, such as housing and livelihood support.



U
P
S
C

December - 2024

Supreme Court's Ruling on Inheritance Provisions under Hindu Succession Act, 1956

Context

- The Supreme Court recently upheld the inheritance provisions under the Hindu Succession Act, 1956 (HSA), focusing on traditional principles and legal coherence rather than viewing inheritance solely as an issue of gender parity.
- Several petitions questioned the legitimacy of the provisions, advocating for equal inheritance rights for both men and women.



Supreme Court's Key Observations on Inheritance

- **Inheritance Beyond Gender Equality**
 - The Court highlighted that upon marriage, a woman becomes a member of her husband's family, thus gaining inheritance rights in that family. The Court clarified that inheritance laws should not be framed exclusively as a gender equity matter.
- **Significance of Traditions**
 - The Court emphasized that Hindu inheritance practices embody long-standing cultural values, noting that traditionally, a married woman's parental family does not participate in managing her inherited property.
- **Logical Lineage and Family Property**
 - The Court upheld the Act's "rational and structured" approach, where, in the absence of direct heirs, a woman's inherited property reverts to her original family. This maintains a lineage-based approach that respects ancestral continuity.
- **Need for Legislative Action**
 - The Court stressed that any amendments to inheritance laws should be initiated

by Parliament, as such changes have widespread societal implications. Thus, the process should be reflective of collective social values rather than individual cases or isolated issues.

➤ Role of Wills

- The Court affirmed that women retain the freedom to distribute their property through a will, underscoring individual choice within the existing legal structure.

➤ Previous Reform Recommendations

- The Court noted that while bodies like the 174th Law Commission (2000) and the National Commission for Women have recommended equal inheritance rights for men and women, implementing these reforms depends on the views of states and Union Territories.

Key Provisions for Intestate (Without a Will) Succession under HSA, 1956

➤ Inheritance for Hindu Women

- If a Hindu woman dies intestate (without a will), her assets, including self-acquired property, are inherited first by her children and husband. If she has no husband or children, her property passes to her husband's heirs, and only if there are no heirs on her husband's side does it go to her parents or their heirs. When property is inherited from a particular source, it reverts to that family if she dies intestate without direct heirs.

➤ Inheritance for Hindu Men

- If a Hindu man dies intestate, his property is shared equally among his wife, children, and mother. In the absence of these relatives, the inheritance passes to his father.

Overview of the Hindu Succession Act, 1956

➤ About the Act

- The Hindu Succession Act provides the legal framework for property distribution when a Hindu dies intestate. The Act specifies the inheritance rules, heirs' rights, and the division of property based on the beneficiaries' relationships with the deceased.

➤ Applicability of the Act

- The Act applies to:
 - Hindus by religion, including Virashaivas, Lingayats, Brahmos, Prarthana Samajists, and Arya Samaj followers.
 - Buddhists, Sikhs, and Jains by religion.
 - Individuals not governed by Muslim, Christian, Parsi, or Jewish laws,



except for Scheduled Tribes unless notified by the Central Government per Article 366 of the Constitution.

➤ Schools of Hindu Law

- The Act creates a unified inheritance system encompassing both the Mitakshara and Dayabhaga schools.
 - Mitakshara Law: Applicable throughout India, except for West Bengal and Assam.
 - Dayabhaga Law: Enforced in West Bengal and Assam. Under this law, inheritance rights are exercised upon the forefather's death, while in Mitakshara, rights are granted from birth.
- Note: In Dayabhaga law, both male and female members can be coparceners (individuals with rights to ancestral property), whereas Mitakshara limits coparcenary rights to male members.

➤ Property Distribution under HSA

- Class I Heirs: A widow, sons, daughters, and mother each receive an equal portion of the deceased's property.
- Class II Heirs: Property is divided equally if there are no Class I heirs.
- Agnates and Cognates: If no Class I or II heirs exist, property passes to paternal relatives (agnates) and other relatives (cognates).

➤ Hindu Succession (Amendment) Act, 2005

- The 2005 amendment to Section 6 of the Act grants daughters equal coparcenary rights with sons by birth for property partitions that arose after 2005.
- Note: Class I heirs include the son, daughter, widow, mother, and children of a predeceased son or daughter, among others. Class II heirs include the father, son's daughter's son, son's daughter's daughter, siblings, and others.

Inheritance Laws in Other Communities

- Muslims: Governed by the Muslim Personal Law (Shariat) Application Act, 1973.
- Christians, Parsis, and Jews: Governed by the Indian Succession Act, 1925.

Conclusion

- The Supreme Court's observations on inheritance under the Hindu Succession Act emphasize the balance between cultural traditions and legal frameworks, promoting a lineage-based inheritance approach while considering gender parity and societal values. While the Court underscored individual choice and potential legislative reforms, it reiterated that a law's purpose should not be compromised solely due to the difficulties it might cause.

Women Empowerment in India

Relevance: GS I - Social Issue

- **In News:** India has achieved significant advancements in women's empowerment in areas such as education, societal involvement, and personal agency.
- However, despite these developments, women's access to employment opportunities remains stagnant, limiting their ability to contribute fully to the economy.



Dimensions of Women Empowerment:

- **Economic Empowerment:** Ensuring equal access to job opportunities, market participation, and entrepreneurial ventures.
- **Political Empowerment:** Promoting women's involvement in leadership roles and decision-making positions within politics.
- **Social Empowerment:** Guaranteeing equality in health, family decisions, marriage, and societal involvement.

Overcoming Societal Constraints:

- **Educational Achievements:** The gender gap in education has largely closed, with 26% of young women holding college degrees, up from 12% in 2011-12.
- **Marriage and Autonomy:** The age at which women marry has risen, and 52% of women now have a voice in selecting their partners.
- **Societal Participation:** Women's freedom of movement & political engagement has increased, with Self-Help Group (SHG) participation growing to 18%.
- **Support from Families:** 80% of women report family backing for employment, signaling that social norms are no longer the chief obstacle to female employment.

Barriers to Women's Empowerment:

- **Decline in Wage Labour Participation:** Women's involvement in wage labour has decreased from 18% in 2012 to 14% in 2022.
- **Mismatch of Job Availability:** Despite women's willingness to work, appropriate job opportunities remain scarce.
- **Unpaid Domestic Work:** Many women contribute to family farms or informal sectors but lack access to formal employment opportunities.

Other Obstacles to Women's Empowerment:

- **Economic Hurdles:**
 - ✓ Persistent gender-based wage disparities.
 - ✓ Overrepresentation of women in informal labor markets.
 - ✓ Unpaid caregiving and the “motherhood penalty” restrict women’s economic participation.
- **Political Obstacles:**
 - ✓ Low representation of women in legislative bodies.
 - ✓ Lack of democratic internal structures within political parties, limiting opportunities for women.
- **Social Barriers:**
 - ✓ Inadequate access to menstrual hygiene and healthcare.
 - ✓ Safety risks, including domestic abuse and workplace harassment.

Government Initiatives for Women Empowerment:

- **Economic Empowerment:**
 - ✓ Maternity Benefit Act (2017) ensuring paid leave for working mothers.
 - ✓ Mudra Yojana, providing financial assistance to women entrepreneurs.
- **Political Empowerment:**
 - ✓ Nari Shakti Vandana Adhiniyam (33% reservation in Lok Sabha and state assemblies).
 - ✓ 73rd and 74th Amendments, ensuring reservations for women in local government bodies.
- **Social Empowerment:**
 - ✓ Prohibition of Child Marriage Act (2006) and MTP Amendment Act (2021), ensuring reproductive and marital rights.
 - ✓ Digital India Land Records Modernisation Programme to secure women’s land ownership rights.

Way Forward:

- **Increase Employment Opportunities:** Create more job opportunities in both public and private sectors that meet the needs of women and focus on skill development programs.
- **Ensure Workplace Safety:** Strengthen the enforcement of the POSH (Prevention of Sexual Harassment) Act (2013) to provide safe working



environments for women.

- **Enhance Basic Services:** Prioritize improvements in health, sanitation, and education for rural women, enabling them to join the workforce.
- **Support Women-Led Development:** Shift the focus from viewing women as recipients of welfare to recognizing them as active agents of development in all sectors.

Conclusion:

- While India has made significant strides in women's empowerment, particularly in education and societal participation, challenges persist in employment access, wage disparity, and political representation.
- Strengthening policies, creating targeted job opportunities, ensuring safety, and promoting women-led development will be crucial in fully unlocking women's potential for driving economic and social progress.

Periodic Labour Force Survey Data Highlights Improved Women Employment Indicators

Relevance : GS I - Social Issue

- **In News:** The Periodic Labour Force Survey (PLFS), conducted by the Ministry of Statistics and Programme Implementation (MoSPI) since 2017-18, reveals significant improvements in women's employment indicators between 2017-18 and 2023-24.



Key Trends in Women Labour Participation:

- **Improved Employment Indicators**
 - ✓ **Worker Population Ratio (WPR) for Women:** Increased from 22% in 2017-18 to 40% in 2023-24.
 - ✓ **Labour Force Participation Rate (LFPR) for Women:** Rose from approximately 23% to 41% over the same period.
 - ✓ **Unemployment Rate (UR):** Dropped from 5.6% in 2017-18 to 3.2% in 2023-24.
- **Rural Female Labour Force Participation**
 - ✓ Significant increase of 23 percentage points between 2017-18 (~25%) and 2023-24 (~48%).

- **Rising Participation of Educated Women**
 - ✓ Women with post-graduate degrees and above in the workforce increased from 35% in 2017-18 to 40% in 2023-24.
- **Earnings Growth for Self-Employed Women**
 - ✓ Steady growth in earnings for female self-employed workers reflects improving economic engagement.

Barriers in Women Labour Force Participation:

- **Social Factors**
 - ✓ Childcare & household responsibilities restrict women's ability to participate in the workforce.
 - ✓ Early marriage and fertility rates remain significant barriers.
- **Economic Challenges**
 - ✓ Lack of employment opportunities and household income levels influence women's participation.
- **Educational Factors**
 - ✓ Focus on obtaining higher qualifications often delays workforce entry.
- **Other Factors**
 - ✓ Poor infrastructure, rural settings, and inadequate care and support systems limit opportunities for women.

Government Initiatives Promoting Women Labour Force Participation:

- **Legislative Actions**
 - ✓ **Maternity Benefit (Amendment) Act, 2017:** Provides extended maternity leave.
 - ✓ **Equal Remuneration Act, 1976:** Ensures equal pay for equal work.
- **Schemes and Programs**
 - ✓ **Skill India Mission:** Enhances employability through skill development.
 - ✓ **Stand-Up India:** Promotes entrepreneurship among women.
 - ✓ **National Rural Livelihood Mission (NRLM):** Empowers women in rural areas.

Key Indicators Used in PLFS:

- **Worker Population Ratio (WPR):** Proportion of employed persons in the total population.
- **Labour Force Participation Rate (LFPR):** Percentage of people either working, seeking, or available for work in the total population.
- **Unemployment Rate (UR):** Percentage of unemployed persons among the labour force.

Nayi Chetna 3.0 – Pahal Badlaav Ki: A Campaign Against Gender-Based Violence

Relevance: GS I - Social Issue

- **In News:** The Union Ministers are set to launch Nayi Chetna 3.0 – Pahal Badlaav Ki, a month-long awareness campaign aimed at combating gender-based violence.
- The initiative is part of the DAY-NRLM (Deendayal Antyodaya Yojana – National Rural Livelihood Mission) and focuses on promoting community action and raising awareness at the grassroots level.



About Nayi Chetna 3.0 – Pahal Badlaav Ki:

Campaign Details

- ✓ **Launched By:** The Ministry of Rural Development under the DAY-NRLM initiative.
- ✓ **Duration:** The campaign will run from 25th November to 23rd December 2024.
- ✓ **Slogan:** The campaign carries the slogan “Ek Saath, Ek Awaaz, Hinsa Ke Khilaaf” (Together, One Voice, Against Violence).

Objectives:

- **Awareness:** The campaign aims to raise awareness about various forms of gender-based violence, ensuring people understand the scope of the issue.
- **Action:** It seeks to inspire communities to actively report cases of violence and demand timely action.
- **Support Systems:** The campaign emphasizes strengthening access to legal and support mechanisms for survivors of gender-based violence.
- **Empower Institutions:** It focuses on empowering local institutions to take decisive action in response to violence.

Outreach and Participation:

- The campaign is supported by 9 Ministries and Departments, reflecting its cross-sectoral approach.
- **Self-Help Groups (SHGs)** play a central role in the campaign, which is

structured as a **Jan Andolan (People's Movement)**.

- Previous editions of the campaign reached **3.5 crore participants in the first edition and 5.5 crore participants in the second edition**, indicating the wide outreach and impact of the initiative.

Conclusion:

- The Nayi Chetna 3.0 – Pahal Badlaav Ki campaign is a crucial initiative for combating gender-based violence through community engagement and inter-ministerial coordination.
- It emphasizes awareness, action, and empowerment at the grassroots level, contributing to women's empowerment and social reform. This campaign exemplifies effective government policies and is highly relevant for UPSC aspirants in the context of gender justice, public policy, and governance.

U
P
S
C

December - 2024

India's Pursuit of Critical Minerals: Key Findings from IEEFA Report

Relevance : GS I - Geography

- **In News:** The Institute for Energy Economics and Financial Analysis (IEEFA) has released its report titled "India's Hunt for Critical Minerals," highlighting the country's dependency and challenges in securing essential minerals for technological & energy advancements.



Key Findings:

- IEEFA's report evaluates **five crucial minerals — cobalt, copper, graphite, lithium, and nickel** — focusing on import dependency, trade patterns, domestic reserves, and global price trends.
- The findings reveal that India remains significantly reliant on imports for these minerals, with complete external dependence for lithium, cobalt, and nickel.
- Demand for these minerals in India is projected to more than double by 2030.

About Critical Minerals:

- A mineral is designated as "critical" when the risk of supply shortages and the associated impact on the economy are considerably higher than other raw materials.
- Concerns Related to Import Dependence on Critical Minerals
 - ✓ **Strategic Vulnerability:** Dependence on a limited number of key suppliers, particularly China, poses strategic risks.
 - ✓ **Price Instability:** Variations in global supply and demand can lead to fluctuating manufacturing and energy production costs.
 - ✓ **Economic Impact:** Rising import costs may reduce India's global market competitiveness.
 - ✓ **Renewable Energy Transition at Risk:** High import reliance could impede India's transition to clean energy and its electric vehicle goals.

Report Recommendations:

- The report emphasizes that India should **develop strategies to minimize risks**

from mineral dependencies and encourage domestic production.

- It also recommends exploring investment in resource-rich, allied countries like Australia, Chile, Ghana, and South Africa.

Applications of Critical Minerals

- **Critical minerals are essential across various sectors:**
 - ✓ **Renewable Energy:** Solar panels, wind turbines, and batteries (e.g., cobalt, nickel)
 - ✓ **Electronics:** Semiconductors, smartphones, and computers
 - ✓ **Medical Technology:** Devices such as MRIs, pacemakers, and hearing aids
 - ✓ **Defense and Aerospace:** Components for military equipment and aircraft

Mangroves and Coastal Resilience: Critical Role in Cyclone Protection and Conservation

Context:

- The recent landfall of Cyclone Dana near Bhitarkanika National Park and Dhamra Port in Odisha underscored the indispensable role that mangrove forests play in safeguarding coastal areas from natural calamities. Despite the anticipated severity of the cyclone, Bhitarkanika's dense mangrove cover significantly mitigated the damage. This event highlights the importance of coastal ecosystems in protecting vulnerable regions from extreme weather events such as cyclones.



What Are Mangroves?

- Mangroves are specialized coastal plants that grow in saline environments, primarily in estuaries and intertidal zones where freshwater meets saltwater. They possess distinctive features, such as aerial roots and waxy leaves, which allow them to thrive in saltwater conditions. These ecosystems are crucial in coastal regions for their ecological functions and their ability to endure harsh environments.
- **Geographical Spread of Mangroves in India**
 - Mangrove Area: The Indian State Forest Report 2021 reveals that India has approximately 4,992 square kilometers of mangrove forests, constituting just 0.15% of the nation's total land area.
- **Key Mangrove Regions in India:**



- Odisha (Bhitarkanika)
 - Andhra Pradesh (Godavari-Krishna delta)
 - Gujarat
 - Kerala
 - Andaman and Nicobar Islands
- The Sundarbans, spanning both India and Bangladesh, are the largest continuous mangrove forest in the world. Bhitarkanika ranks second in mangrove coverage in India, making it a vital conservation area.

The Role of Mangroves in Mitigating Cyclones

- Mangroves play an essential role in reducing the severity of cyclones and safeguarding coastal populations from storm surges and erosion. These ecosystems provide multiple protective services that are crucial for the resilience of coastal regions.
- **Coastal Defense**
- Mangroves act as natural barriers by stabilizing shorelines, reducing coastal erosion, and protecting coastal areas from being washed away by strong waves and storms. Their dense root systems bind the soil, offering vital protection during extreme weather events.
- **Protection from Storm Surges**
- Mangrove forests are effective at reducing the height of storm surges caused by cyclones. By absorbing the energy from waves and lowering the water velocity, mangroves minimize flooding and reduce coastal damage significantly.
- **Complementary Infrastructure**
- The protective functions of mangroves can be enhanced when combined with human-made infrastructure, such as embankments and flood defenses. This combination helps to reinforce coastal resilience and provides more effective protection against extreme weather.

Conservation Efforts for Mangroves

- In response to the growing importance of mangrove ecosystems, several initiatives have been launched to promote their conservation and restoration. These programs aim to protect mangroves from the growing pressures of human activity and climate change.
- **MISHTI Initiative (Mangrove Initiative for Shoreline Habitats and Tangible Incomes)**
- Announced in the Union Budget 2023-24, the MISHTI initiative focuses on the planting of mangroves along India's coastline and in salt pan areas. This initiative seeks to enhance coastal ecosystems and improve the ability of mangroves to reduce the impact of cyclones and other extreme events.

U
P
S
C

December - 2024

➤ Mangrove Alliance for Climate (MAC)

- The Mangrove Alliance for Climate, which includes nations like the UAE, Indonesia, India, Sri Lanka, Australia, Japan, and Spain, aims to raise global awareness of the vital role mangroves play in combating climate change. This alliance seeks to promote the preservation of mangroves as a natural solution to global warming.

➤ Blue Carbon Initiative

- The Blue Carbon Initiative is an international effort focused on the restoration and conservation of coastal and marine ecosystems, including mangroves, seagrasses, and salt marshes. Coordinated by organizations such as Conservation International (CI), IUCN, and UNESCO's IOC, this initiative aims to use coastal ecosystems to mitigate climate change by sequestering carbon.

Challenges in Mangrove Conservation

- Despite their vital ecological services, mangrove ecosystems face numerous challenges that threaten their survival and ability to protect coastal areas.

➤ Commercial Development of Coastal Areas

- Increasing human activity along coastlines, such as aquaculture, industrialization, and agricultural expansion, is replacing mangrove forests. Coastal developments such as rice and palm oil farming are rapidly eroding these critical ecosystems, leaving coastal communities more vulnerable to disasters.

➤ Temperature Sensitivity

- Mangroves are particularly sensitive to temperature changes. A rise or drop in temperature of even 10°C in a short period can stress mangrove trees. Freezing temperatures, even for brief periods, can lead to the death of some mangrove species, threatening the overall health of these ecosystems.

➤ Soil Oxygen Deficiency

- Mangroves grow in soils with low oxygen levels, which pose a challenge for their root systems. The lack of sufficient oxygen in the mud hampers the growth of these plants, making them more vulnerable to environmental stresses.

➤ Pollution and Contamination

- Mangrove habitats are increasingly threatened by pollution from agricultural runoff, industrial effluents, and untreated waste disposal. These pollutants degrade the health of mangroves, making them less effective in providing coastal protection.

➤ Lack of Coordinated Management

- Mangrove management often occurs in isolation, failing to consider the interconnectedness of coastal ecosystems, such as coral reefs and seagrass

meadows, which play complementary roles in supporting healthy coastal environments. An integrated approach is necessary for the long-term health of these ecosystems.

Bhitarkanika National Park: A Case Study of Mangrove Conservation

- Bhitarkanika National Park in Odisha is one of India's most significant mangrove areas. Covering an area of 672 square kilometers, it is characterized by a network of creeks and tidal rivers. This park is a haven for biodiversity, particularly for species like the saltwater crocodile and the Olive Ridley sea turtle.
 - **Crocodile Conservation:** The park has been a site for the conservation of saltwater crocodiles since 1975, making it an important location for reptile protection in India.
 - **Olive Ridley Sea Turtle Nesting:** Gahirmatha Beach, located on the park's eastern boundary, is the world's largest nesting site for Olive Ridley sea turtles.

Strategies for Preserving Mangroves

- To ensure the continued health of mangrove ecosystems and their ability to protect coastal areas, the following strategies should be implemented:
 - **Bio-Restoration Approaches**
 - Assisted Natural Regeneration (ANR) is an effective technique for mangrove restoration. This method supports the natural regrowth of mangroves by promoting the survival of existing seedlings and nurturing their natural growth cycles. ANR focuses on maintaining biodiversity while allowing ecosystems to recover organically.
 - **Policy Development and Enforcement**
 - Robust conservation policies are needed to preserve existing mangrove forests and rehabilitate degraded areas. Governments should enforce sustainable management practices that enhance the resilience of coastal regions, making them more adaptable to climate change.
 - **Community Participation**
 - Local communities must be actively involved in mangrove conservation efforts. By engaging coastal populations and fostering a sense of ownership, conservation efforts can be more successful. Educational and awareness programs are key to ensuring that local communities understand the importance of mangroves and take part in their protection.

Conclusion

- Mangroves are indispensable to the resilience of coastal regions in India. They provide crucial protection against cyclones, erosion, and flooding, while also

supporting biodiversity. Protecting these ecosystems requires a combination of ecological, infrastructural, and community-based efforts. By strengthening conservation programs, improving policy enforcement, and involving local populations, India can ensure the long-term survival of mangroves and enhance its coastal resilience in the face of increasing climate challenges.

Odisha Marks 25 Years of Resilience Since the 1999 Supercyclone

Relevance : GS I - Geography

- In News:** Odisha commemorates the 25th anniversary of the 1999 supercyclone, 'BoB 06,' which struck Paradip in Jagatsinghpur with winds reaching 250 km/h, resulting in over 9,000 fatalities and millions left homeless. Since then, Odisha's cyclone management has vastly improved, earning recognition in 2013 and 2014 as a "global example" by the UN.



Key Issues in the 1999 Disaster Response:

- Warnings Overlooked:** Despite alerts from the India Meteorological Department (IMD), authorities underestimated the storm's intensity.
- Preparedness Deficiencies:** The response suffered due to inadequate landfall-specific warnings, limited resources, and ineffective communication strategies.

Disaster Resilience Initiatives Since 1999:

- State-Level Initiatives**
 - Odisha State Disaster Management Authority (OSDMA):** Odisha established India's first state-level disaster management agency, leading to decentralized disaster response and reducing bureaucratic delays.
 - Mission Zero Casualty:** OSDMA introduced cyclone shelters, rapid response teams, and streamlined protocols to minimize human casualties in cyclones and floods.
 - Community-Centered Approaches:** Engaged local volunteers, including members from gram panchayats and women's self-help groups (SHGs), in rescue operations to reduce disaster risks.
- National-Level Efforts**
 - Enhanced Early Warning and Response Systems:** Unlike 1999, when cloud imagery from IMD was delayed, IMD now provides real-time updates every 15 minutes.

December - 2024

UPSC

- ✓ **Disaster Management Act (DMA), 2005:** Established the National Disaster Management Authority (NDMA), institutionalizing disaster management at the national level.

About Cyclones:

- **Formation:** Cyclones arise due to atmospheric disturbances around a low-pressure area, characterized by rapid, often destructive air circulation.
- **Types:**
 - ✓ **Extratropical Cyclones:** Occur in temperate zones and high latitudes.
 - ✓ **Tropical Cyclones:** Develop between the Tropics of Capricorn and Cancer.
- **Terminology Used by IMD:** Based on wind speed, the IMD categorizes low-pressure systems in the Bay of Bengal as follows:
 - ✓ Super Cyclone: ≥ 221 km/h
 - ✓ Severe Cyclonic Storm: 88–117 km/h
 - ✓ Cyclonic Storm: 61–88 km/h.

Conclusion:

- Through decades of dedicated efforts, Odisha has transformed its disaster response framework, becoming a model of effective cyclone management and community-centered resilience.

Central Water Commission Report Highlights Expanding Himalayan Glacial Lakes

Relevance: GS I - Geography

- **In News:** The recent Central Water Commission (CWC) report has raised alarms about the expanding glacial lakes in the Himalayan region, a phenomenon driven by climate change.
- This expansion poses serious risks to both local communities and biodiversity due to the heightened likelihood of Glacial Lake Outburst Floods (GLOFs).



Key Findings of the Report:

- **Expansion of Glacial Lakes**
 - ✓ The report notes a 10.8% increase in the surface area of glacial lakes in the Himalayan region between 2011 and 2024.
 - ✓ In India, the expansion has been even more significant, with a 34% increase

in the surface area of these lakes.

- **High-Risk Lakes**
 - ✓ A total of 67 lakes in India have experienced an expansion of over 40%, placing them at high risk of GLOFs, which could lead to severe consequences downstream.
- **Transboundary Risks**
 - ✓ The report also highlights the transboundary risks posed by the expanding glacial lakes in regions such as Bhutan, Nepal, and China, where shared water bodies are prone to similar risks.
- **Monitoring Tools**
 - ✓ The expansion and associated risks were closely monitored using advanced satellite technology, including the Sentinel-1 (Synthetic Aperture Radar) and Sentinel-2 satellites.

What are Glacial Lakes?

- Glacial lakes are bodies of water formed as glaciers retreat, eroding land and creating depressions that subsequently fill with water. These lakes are typically found in regions where glaciers have retreated, and they can vary in size.

About Glacial Lake Outburst Floods (GLOFs):

- GLOFs occur when a glacial lake releases a massive amount of water due to the failure of the ice dam or other natural barriers. This sudden release of water can cause rapid flooding in nearby rivers, often resulting in significant destruction.
 - ✓ **Example:** In October 2023, a GLOF occurred in Sikkim when the South Lhonak Lake burst, causing widespread disruption in the region.

About the Central Water Commission (CWC):

- **Headquarters:** New Delhi
- **Establishment:** The CWC was founded in 1945 following the recommendations of Dr. B. R. Ambedkar.
- **Ministry:** Ministry of Jal Shakti
- **Leadership:** The CWC is headed by a Chairman, who serves as an Ex-officio Secretary to the Government of India.
- **Objective:** The primary aim of the CWC is to promote the integrated and sustainable development and management of India's surface water resources.
 - ✓ The CWC is responsible for surface water management, while the Central Groundwater Board (CGWB) manages groundwater resources.



Concerns Raised Over Falling Birth Rates in Some States

Relevance: GS I - Geography

- **In News:** The Chief Ministers of Andhra Pradesh and Tamil Nadu have recently raised alarms about the low birth rates and the resulting slow population growth in their states.
- This growing demographic shift is becoming a key issue, with significant implications for future development.



Birth Rate in India:

- According to the National Family Health Survey (NFHS-5), conducted between 2019-2021, India has seen a notable drop in the **Total Fertility Rate (TFR)**, now standing at **2.0**.
- TFR refers to the average number of children born to women during their childbearing years. This figure is **below the replacement-level fertility of 2.1**, which is the rate required to sustain the population size over generations without it either growing or shrinking.
- However, this reduction in fertility rates is **not uniform across India**. Southern states and certain smaller northern states have seen a more significant decrease.
- For instance, Tamil Nadu and Andhra Pradesh report TFRs of 1.4 and 1.5, respectively, while northern states like Uttar Pradesh and Bihar still have higher TFRs of 2.7 and 3.0, respectively.

Reasons for the Declining Birth Rates:

- **Family Planning Initiatives:** The execution of family planning programs has significantly increased adoption, with the demand among married women rising from 66% in 2015-16 (NFHS-4) to 76% in 2019-21 (NFHS-5).
- **Empowerment of Women through Education:** The growing access to education for women and their greater participation in the workforce have increased the opportunity costs of having more children, as women increasingly prioritize career advancement and financial independence.
- **Rising Living Expenses:** The growing cost of living and housing has emerged as a major obstacle to larger family sizes, as many families find it difficult to manage the financial burdens of raising children in an increasingly expensive and competitive environment.

Issues Arising from Declining Fertility Rates:

- **Aging Population:** As fertility rates decrease, the proportion of elderly citizens rises, exerting pressure on governments to allocate more resources toward pension systems, healthcare services, and other forms of elder care. Additionally, an increasing old-age dependency ratio places a heavier economic and emotional burden on the younger, working population.
- **Political Implications:** States with lower population growth may see a reduction in their political representation. This issue will become more critical after the current freeze on the allocation of parliamentary seats ends in 2026, potentially diminishing the political influence of these states.
- **Labour Shortages:** A sustained decline in fertility rates can lead to long-term labour shortages, similar to the demographic challenges faced by countries like Japan, where a shrinking workforce creates barriers to economic growth as businesses struggle to fill vacancies.

Villages in Odisha Recognized as 'Tsunami Ready' by UNESCO-IOC

Relevance: GS I - Geography

- **In News:** Twenty-four coastal villages in Odisha received recognition as Tsunami Ready during the 2nd Global Tsunami Symposium held in Indonesia. This recognition was based on verification by the National Tsunami Ready Recognition Board (NTRB).
 - ✓ The NTRB includes experts from the Indian National Centre for Ocean Information Services (INCOIS) and officers from the National Disaster Management Authority (NDMA), which implement the Tsunami Ready Recognition Programme.



UNESCO-IOC Tsunami Ready Recognition Programme (TRRP):

- **Overview:** A voluntary, global community-based initiative aimed at enhancing risk prevention and mitigation in coastal areas.
- **Aim:** To foster tsunami resilience by creating awareness and implementing preparedness strategies to safeguard lives, livelihoods, and property from tsunamis.
- **Methodology**
 - ✓ Uses 12 preparedness indicators to ensure consistent evaluation of communities.
 - ✓ Recognition is renewable every four years to maintain standards.



About Tsunamis:

- **Definition:** Tsunamis are massive waves triggered by underwater disturbances such as: Earthquakes, Volcanic eruptions, Landslides, Coastal rock falls
- **Origin:** The term “tsunami” comes from the Japanese words:
 - ✓ “Tsu” (harbour), “Nami” (wave)
- **Characteristics**
 - ✓ **Speed:**
 - Over 500 miles per hour (mph) in deep waters.
 - Slows to 20–30 mph in shallow waters, causing the wavelength to decrease and wave height to increase.
 - ✓ **Wave Speed:**
 - Depends on ocean depth rather than the distance from the source.

Steps Taken by India:

- **Indian Tsunami Early Warning Centre (ITEWC)**
 - ✓ Provides tsunami advisories to 25 Indian Ocean countries for last-mile connectivity.
 - ✓ Operates a network of tsunami buoy systems for real-time data transmission.
- **Real-Time Monitoring**
 - ✓ INCOIS has set up a real-time network of tide gauge stations along India’s coastline.
- **Guidelines and Preparedness**
 - ✓ NDMA has issued guidelines for Tsunami Management in India.
- **Modeling and Mapping of Tsunamis**
 - ✓ Comprehensive tsunami modeling and mapping have been conducted along the Indian coastline to improve preparedness.

Conclusion:

- The recognition of Odisha’s villages as Tsunami Ready is a testament to India’s efforts in strengthening disaster risk reduction frameworks. With initiatives like the TRRP and advancements in early warning systems, the country is setting a global example in tsunami preparedness and resilience.

COP-16 of the Convention on Biological Diversity

Context:

- The 16th Conference of Parties (COP 16) to the Convention on Biological Diversity (CBD) recently concluded in Cali, Colombia, marking a significant advancement in global biodiversity conservation. During the event, India introduced its revised National Biodiversity Strategy and Action Plan (NBSAP), aligning it with the Kunming-Montreal Global Biodiversity Framework (KMGBF). This update signifies India's commitment to enhancing its biodiversity conservation efforts in line with international objectives.

**Key Developments at COP-16 to the CBD**

- **Establishment of the Cali Fund**
 - One of the notable outcomes of COP 16 was the creation of the Cali Fund, aimed at ensuring equitable sharing of benefits derived from the utilization of digital sequence information (DSI) related to genetic resources.
 - Focus on Indigenous Communities: At least half of the Cali Fund will prioritize addressing the needs of Indigenous Peoples and local communities, with particular attention to women and youth.
- **Creation of a Permanent Subsidiary Body**
 - COP 16 agreed on the establishment of a permanent subsidiary body focused on Article 8j of the CBD. This article pertains to the protection of the traditional knowledge, innovations, and practices of indigenous communities. The meeting also adopted a new Programme of Work, designed to ensure the meaningful involvement of these communities in the conservation and sustainable use of biodiversity.
- **Strategy for Resource Mobilization**
 - A key decision at COP 16 was the development of a Strategy for Resource Mobilization, with the aim to generate USD 200 billion annually by 2030 to

support global biodiversity initiatives. Additionally, there was an objective to redirect USD 500 billion per year in harmful subsidies that negatively impact biodiversity.

➤ **Synthetic Biology Action Plan**

- The conference introduced a new thematic action plan for addressing the challenges of synthetic biology, focusing on capacity building, technology transfer, and knowledge exchange among developing nations. Synthetic biology, which involves the engineering of new organisms or modifying existing ones through DNA manipulation, has raised concerns regarding its implications for biodiversity.

➤ **Managing Invasive Alien Species**

- COP 16 proposed the development of guidelines for managing invasive alien species. These guidelines will include the establishment of databases, improved border trade regulations, and greater coordination with e-commerce platforms to prevent the spread of non-native species that threaten local ecosystems.

➤ **Identifying Ecologically or Biologically Significant Marine Areas (EBSAs)**

- COP 16 agreed on an updated process for identifying Ecologically or Biologically Significant Marine Areas (EBSAs). These areas are crucial for marine conservation and are recognized for their ecological or biological significance. The identification and protection of these areas play a pivotal role in ocean conservation.

➤ **Sustainable Wildlife and Plant Conservation**

- A decision was made to focus on sustainable wildlife management, emphasizing the importance of monitoring, capacity-building, and the inclusive participation of indigenous peoples, local communities, and women in conservation efforts. The progress in plant protection should be measurable and aligned with global biodiversity targets.

➤ **Global Action Plan on Biodiversity and Health**

- The Global Action Plan on Biodiversity and Health was endorsed at COP 16. The plan aims to prevent the emergence of zoonotic diseases, reduce non-communicable diseases, and promote the sustainability of ecosystems. It adopts a holistic "One Health" approach, recognizing the interconnectedness of human, animal, and environmental health.

➤ **Risk Assessment for Living Modified Organisms (LMOs)**

- COP 16 welcomed new voluntary guidelines for assessing the risks associated with living modified organisms (LMOs), particularly those with engineered

genes. These guidelines are important for evaluating the potential environmental and health impacts of genetically modified organisms.

➤ Recognition of People of African Descent

- A decision was also made to formally recognize the role of people of African descent in the implementation of the Convention, acknowledging their significant contributions to biodiversity conservation efforts.

Kunming-Montreal Global Biodiversity Framework (KMGBF)

➤ Overview of the KMGBF

- The Kunming-Montreal Global Biodiversity Framework (KMGBF) is an international treaty aimed at halting and reversing biodiversity loss by 2030. Adopted during the 15th Conference of the Parties (COP 15) in December 2022, the framework builds on the Strategic Plan for Biodiversity (2011–2020) and supports the Sustainable Development Goals (SDGs).

➤ Objectives of the KMGBF

- The KMGBF outlines a global target to restore at least 30% of degraded ecosystems (terrestrial, inland water, marine, and coastal) by 2030. The framework includes 23 action-oriented global targets, focusing on urgent actions needed to preserve biodiversity worldwide.

➤ Long-Term Vision

- The framework envisions that by 2050, humanity will live in harmony with nature, marking a significant shift toward sustainable development and biodiversity conservation. It provides a guiding principle for nations to develop and implement biodiversity-related policies.

India's Role in Global Biodiversity Conservation

- India, as one of the most biodiverse countries in the world, plays a crucial role in global biodiversity efforts. The country is home to a vast number of species, and their preservation is essential for both ecosystem stability and human welfare.

Historical Context of India's NBSAP

- India's first National Biodiversity Strategy and Action Plan (NBSAP) was developed in 1999, with subsequent updates in 2008 and 2014 to align with the Aichi Biodiversity Targets. The NBSAP remains a key instrument for integrating biodiversity conservation into India's development policies.

➤ Importance of NBSAP

- With over 55,000 plant species and 100,000 animal species, India's biodiversity

is of immense ecological, economic, and cultural value. Safeguarding these species is crucial for the well-being of both the natural environment and the people who depend on it.

India's Updated NBSAP: Key Features

➤ Framework of the Updated NBSAP

- The revised NBSAP outlines 23 national biodiversity targets, in alignment with the KMGBF's global objectives. These targets focus on reducing biodiversity threats, promoting sustainable use, ensuring ecosystem resilience, recovering species, and fostering sustainable management practices.

➤ Comprehensive Strategy

- The updated NBSAP consists of seven chapters, covering various aspects such as:
 - Contextual analysis
 - Capacity-building
 - Financing mechanisms
 - Biodiversity monitoring frameworks

➤ Implementation and Governance

- The Ministry of Environment, Forest, and Climate Change (MoEFCC) is responsible for the implementation of the NBSAP, supported by various entities like the National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs), and Biodiversity Management Committees (BMCs).

➤ Key Targets of India's NBSAP

- Conservation Areas: Aiming to conserve 30% of India's biodiversity-rich areas.
- Invasive Species Management: Targeting a 50% reduction in the spread of invasive species.
- Sustainable Consumption: Promoting sustainable consumption choices and halving food waste by 50%.
- Pollution Control: India is committed to cutting nutrient loss and pesticide risks by half.
- Benefit Sharing: Promoting fair and equitable benefit-sharing from genetic resources, digital sequence information, and traditional knowledge.

➤ Financing

- India plans to allocate around Rs 81,664 crore for biodiversity conservation from 2025 to 2030. However, international funding will also be required to meet these ambitious targets.

➤ Community Participation

- Engaging local communities, especially those in forest-dependent regions, will

be crucial for the success of the NBSAP. Community involvement will help ensure that conservation efforts are sustainable in the long term.

Conclusion

- COP 16 of the Convention on Biological Diversity marked significant progress in global biodiversity conservation, especially with the establishment of the Cali Fund, the update of National Biodiversity Strategy and Action Plans, and the commitment to the Kunming-Montreal Global Biodiversity Framework. India's updated NBSAP reflects a comprehensive approach to biodiversity conservation, emphasizing the need for collaborative action, financing, and community participation. These efforts will play a key role in addressing the global biodiversity crisis and ensuring the long-term health of the planet's ecosystems.

Biological Diversity Rules, 2024

Relevance : GS III - Environment

- **In News:** The Ministry of Environment, Forest, and Climate Change has released the updated Biological Diversity Rules, 2024, under the Biological Diversity Act of 2002.
- These new rules replace the 2004 guidelines & support the Biological Diversity (Amendment) Act, 2023, which aims to streamline research processes and encourage traditional Indian medicine systems.



Key Highlights of the Rules:

- **National Biodiversity Authority (NBA):**
 - ✓ **Appointment:** The Central Government will designate the Chairperson for a three-year term, with the possibility of reappointment.
- **Functions of the NBA:**
 - ✓ Manages the National Biodiversity Fund (NBF) established under the 2002 Act.
 - ✓ Provides approvals for biodiversity-related agreements.
 - ✓ Offers technical advice and assistance to state-level biodiversity bodies.
 - ✓ Develops and maintains databases on biological resources and indigenous knowledge.
- **Intellectual Property Rights (IPR):** NBA approval will be required before

granting IPRs that involve biological resources.

- **Penalties for Non-Compliance:** Penalties for violations range from ₹1 lakh to ₹50 lakh, with additional fines for repeat offenses. Collected fines will be allocated to the NBF or relevant state funds, supporting biodiversity preservation efforts.

About the Biological Diversity Act, 2002:

- The Act was established to help India meet its obligations under the United Nations Convention on Biological Diversity (CBD) of 1992. It sets up a decentralized, three-tier structure for regulation:
 - ✓ **National Level:** National Biodiversity Authority (NBA)
 - ✓ **State Level:** State Biodiversity Boards (SSB)
 - ✓ **Local Level:** Biodiversity Management Committees (BMC)

Negative Environmental Effects of AI:

- The Biological Diversity Rules, 2024, mark a significant advancement in India's commitment to preserving its biodiversity in line with global standards, particularly under the Convention on Biological Diversity (CBD).
- By empowering the National Biodiversity Authority (NBA) and refining mechanisms for research, traditional knowledge protection, and intellectual property rights, the new rules reinforce India's framework for sustainable biodiversity management.
- This regulatory update not only simplifies procedures but also strengthens biodiversity governance at national, state, and local levels, supporting India's vision of inclusive and efficient biodiversity conservation.

December - 2024

UPSC

Marine Protected Areas as Key to Biodiversity Conservation and Nutritional Security

Relevance : GS III - Environment

- **In News:** A recent study underscores the role of effective MPA management and governance in conserving marine biodiversity while enhancing nutritional security.



Key Highlights of the Study:

- **Sustainable-Use MPAs:** Contribute to 13.6% of global fish catch, 14% of

fisheries revenue, and 13.7% of global nutrient supply.

- **Exclusive Economic Zones (EEZs):** Account for 7% of total global catches.
- **Health Benefits for Coastal Communities:** Establishing MPAs in nutritionally vulnerable coastal areas can promote health and nutrition.

Marine Protected Areas (MPAs) and Their Importance:

- **Definition:** MPAs are ocean areas with stricter regulations on human activities than in surrounding waters (as defined by ENVIS).
- **Protected by Various Authorities:** Local, state, regional, and national bodies enforce special protections for marine resources within these areas.

Significance of MPAs:

- **Genetic Reservoirs:** Serve as genetic reserves aiding the natural or assisted recovery of regions impacted by pollution.
- **Refuges for Marine Species:** Provide essential protection against overfishing, habitat destruction, and pollution.
- **Scientific Reference Sites:** Serve as benchmarks for studying marine ecosystems.
- **Recreation and Tourism:** Support sustainable, nature-based tourism.
- **Climate Mitigation:** Play a role in climate change adaptation & mitigation efforts.

Challenges in Conserving MPAs:

- **Enforcement Issues:** Ensuring adherence to regulations is challenging.
- **Resource Intensity:** MPAs require significant resources for effective management.
- **Impact on Local Communities:** Restrictions can affect the livelihoods of fishing communities.

Global Initiatives for Marine Biodiversity Protection:

- **Kunming-Montreal Global Biodiversity Framework:** Targets 30% protection of global oceans and lands by 2030.
- **High Seas Treaty:** Focuses on safeguarding marine biodiversity beyond national jurisdictions.

Marine Protected Areas in India:

- **Examples:** Gulf of Mannar Marine Park (Tamil Nadu), Lothian Island (West Bengal), and Gahirmatha (Odisha).

Conclusion:

- By enhancing and expanding MPAs, countries can support biodiversity conservation, bolster marine ecosystem health, and improve food security, especially for vulnerable coastal populations.

Alstonia Scholaris: A Tree of Significance

Relevance: GS III - Environment

- **In News:** Heavy rains from Cyclone Dana have caused Chhatim trees (*Alstonia Scholaris*) to shed their fragrant flowers recently, drawing attention to this tree's ecological and medicinal importance.



General Information:

- **Family Name:** Apocynaceae
- **Synonyms:** *Echites scholaris*, *Alstonia kurzii*, *Tabernaemontana alternifolia*, *Acokanthera scholaris*, *Echites pala*
- **Common Names:** Indian Pulai, White Cheesewood, Devil Tree, Blackboard Tree, Milkwood Pine, Dita Bark, Bitter Bark.

Description and Characteristics:

- **Size:** *Alstonia Scholaris* is a medium-sized evergreen tree, typically reaching heights of 12–18 meters, although it can grow as tall as 27 meters in optimal conditions.
- **Appearance:** The tree has a rough, greyish-white bark, which is yellowish inside and exudes bitter latex when damaged. Its leaves are thick, oblong, and arranged in whorls of 4 to 7. They are dark green on the upper side and pale, covered with brownish hairs on the underside.
- **Floral Characteristics:** The flowers are fragrant, typically greenish-white or greyish-yellow, and appear in umbrella-shaped clusters. The fruit is a narrow, cylindrical follicle, approximately 30 cm long and 3 cm wide, with seeds that have brown hair.

Habitat and Climate Preferences:

- **Climate:** *Alstonia Scholaris* can grow in a variety of climates across India, from dry tropical to sub-temperate regions. It thrives best in areas with an annual

rainfall of 100–150 cm, preferring a moist environment.

- **Soil Requirements:** It flourishes in red alluvial soil with good aeration and can also grow in black cotton soils, although its growth is slower in moist conditions during the monsoon.

Therapeutic Uses:

- **Medicinal Benefits:** The tree is used as a substitute for cinchona and quinine in the treatment of intermittent periodic fever. An infusion made from the bark is used to treat conditions such as fever, dyspepsia, skin diseases, liver disorders, chronic diarrhea, and dysentery.

Conclusion:

- The *Alstonia Scholaris*, or Chhatim tree, serves as both a valuable ecological resource and a traditional remedy, contributing to its importance in both natural and medicinal contexts.

Decline in Migratory Bird Arrival at Hokersar Wetland

Relevance: GS III - Environment

- **In News:** The seasonal arrival of migratory birds at the Hokersar Wetland, a critical habitat for various bird species, has been significantly impacted due to inadequate rainfall.



About Hokersar Wetland:

- **Ramsar Site:** Designated as a Ramsar Wetland of International Importance in 2005.
- **Geographical Location:** The wetland is situated in the flood plains of the Jhelum River, to the west of Srinagar, Jammu & Kashmir.
- **Water Sources:** Fed by two perennial streams, Dood-Ganga and Sukhnag, which provide a constant flow of water to the wetland.
- **Ecological Importance:** The Hokersar Wetland is the last remaining area with reedbeds unique to Kashmir, serving as a vital ecosystem for wildlife.

Migratory Birds at Hokersar:

- **Major Bird Species:** The wetland hosts a diverse range of migratory birds, including the Large Egret, Great Crested Grebe, Little Cormorant, Common Shelduck, Tufted Duck, and the endangered White-eyed Pochard.

- **Migratory Routes:** These birds typically migrate from regions such as Siberia, China, Central Asia, and Northern Europe to seek refuge in the wetland.

‘Guru Ghasidas-Tamor Pingla Tiger Reserve

Relevance: GS III - Environment

- **In News:** The Guru Ghasidas-Tamor Pingla Tiger Reserve (TR) has been officially notified as the 56th Tiger Reserve of India, following the recommendation of the National Tiger Conservation Authority (NTCA).



Key Details:

Tiger Reserve Composition

- ✓ The Guru Ghasidas-Tamor Pingla Tiger Reserve has been established by combining the Guru Ghasidas National Park and the Tamor Pingla Wildlife Sanctuary.

Chhattisgarh now has four Tiger Reserves:

1. Indravati TR
2. Udanti-Sitanadi TR
3. Achanakmar TR
4. Guru Ghasidas-Tamor Pingla TR

Notification and Legal Framework

- ✓ A Tiger Reserve is notified by State Governments under the Wildlife (Protection) Act, 1972, on the advice of the National Tiger Conservation Authority (NTCA).
- ✓ This makes it India's third-largest Tiger Reserve, after Nagarjunasagar-Srisailem TR (Andhra Pradesh) and Manas TR (Assam).

Tiger Reserve Structure

✓ A Tiger Reserve is composed of two main zones:

- **Core/Critical Area:** This area is inviolate and must be protected without affecting the rights of Scheduled Tribes or forest dwellers, as per the Forest Rights Act, 2006.
- **Buffer/Peripheral Area:** This zone promotes human-wildlife coexistence with lesser protection, recognizing local rights, determined through the Gram Sabha.

Location & Landscape of Guru Ghasidas-Tamor Pingla TR:

- **Geography:** The Tiger Reserve spans parts of the Chota Nagpur Plateau and the Baghelkhand Plateau, providing a diverse landscape for flora and fauna.
- **Fauna:** The reserve is home to a rich diversity of wildlife, including leopards, hyenas, jackals, wolves, and sloth bears.
- **Rivers:** Key rivers flowing through the reserve include Hasdeo Gopad and Baranga, which add to the ecological richness of the area.
- **Conservation Approach**
 - ✓ The reserve adopts a Landscape Approach to conservation, as outlined in the National Wildlife Action Plan (2017-31).
 - ✓ It is connected to other protected areas through corridors, including the Sanjay Dubri TR (Madhya Pradesh), Bandhavgarh TR (Madhya Pradesh), and Palamau TR (Jharkhand).

About the Landscape Approach to Tiger Conservation:

- The Landscape Approach focuses on creating interconnected networks of protected areas to support viable tiger populations. These interconnected populations are referred to as metapopulations, and the strategy aims to:
 - ✓ Improve habitat connectivity across different reserves.
 - ✓ Facilitate gene flow between populations, reducing risks of inbreeding depression.
- Avoid the need for translocation of tigers by ensuring continuous corridors and suitable habitats. This approach is vital for sustainable tiger conservation and has been instrumental in the management of the Guru Ghasidas-Tamor Pingla Tiger Reserve.

National Landslide Risk Mitigation (NLRM) Project

Relevance : GS III - Disaster Management

- **In News:** The High-Level Committee (HLC), chaired by the Union Home Minister, has approved funding for disaster mitigation projects under the National Disaster Mitigation Fund (NDMF) across various states.
- Additionally, the HLC sanctioned a project aimed at training and capacity building for civil defense personnel in all States and Union Territories, under the Preparedness and Capacity Building component



of the National Disaster Response Fund (NDRF).

Need for the NLRM Project:

- Unlike earthquakes and tsunamis, landslides can be predicted and prevented effectively.
- The initiative aims to foster a scientific approach toward landslide investigation, analysis, and management.

About the National Disaster Mitigation Fund (NDMF):

- **Constitution:** Formed in 2021 under the Disaster Management Act, 2005, based on recommendations from the 15th Finance Commission.
- **Implementation:** Administered by the National Disaster Management Authority (NDMA).
- **Purpose:** Exclusively dedicated to funding mitigation projects for disaster risk reduction.

Landslide Management in India:

- **Technological Measures**
 - ✓ **Remote Sensing and GIS:** Used for landslide hazard zonation mapping to identify high-risk areas.
 - ✓ **Real-Time Monitoring:** Deployment of sensors, satellite imagery, and drones to develop early warning systems.
- **Preventive Measures**
 - ✓ **Structural Interventions:** Construction of retaining walls and implementation of slope stabilization techniques.
 - ✓ **Non-Structural Methods:** Promoting land use regulations and curbing deforestation to minimize risks.
- **Coordination Efforts:** Collaboration between key agencies like the NDMA, Geological Survey of India (GSI), and State Disaster Management Authorities (SDMAs) to streamline operations.

About Landslides in India:

- **Definition:** The downward movement of rocks, debris, or earth due to gravitational forces.
- **Examples:** Frequently reported in regions like Wayanad, Kerala.
- **Risk Status:** India ranks among the top four countries globally with the highest landslide risk (ISRO Landslide Atlas of India).



- **Causes:**
 - ✓ **Natural:** Heavy rainfall, seismic activity, snowmelt, etc.
 - ✓ **Anthropogenic:** Deforestation, unplanned urbanization, improper drainage systems, etc.

Other Initiatives for Landslide Management:

- **National Landslide Susceptibility Mapping Program (2014-15):** Launched by the Geological Survey of India for comprehensive risk mapping.
- **Landslide Risk Mitigation Scheme:** Provides financial assistance for site-specific mitigation projects.
- **NDMA Guidelines:** Issued for effective management of landslides and snow avalanches, offering technical and procedural support to authorities.



3rd Indian Space Conclave & India's First Mars and Moon Analog Mission

Introduction:

- The 3rd Indian Space Conclave held in New Delhi served as a major platform to showcase India's growing space capabilities, highlighting advancements in Satellite Communication (Satcom) and the burgeoning partnership between India and the European Union (EU) in space exploration. In addition, India took a significant step towards preparing for extraterrestrial missions with the inauguration of its first Mars and Moon analog mission in Leh, Ladakh. This mission is aimed at simulating conditions for space habitat testing, contributing to India's ambitious space goals.



Key Highlights from the 3rd Indian Space Conclave

- Satellite Communication (Satcom): A Pillar of Digital India**
 - The Indian Space Conclave emphasized the critical role of Satellite Communication (Satcom) in the development of Digital India. Satcom is pivotal for enhancing connectivity, especially in remote and underserved regions. The Minister of State for Communications and Rural Development elaborated on the transformative power of Satcom, which supports diverse sectors such as telecommunications, disaster management, agriculture, healthcare, and education.
 - The Satcom Reform 2022 policy was highlighted as a key initiative that seeks to foster innovation and encourage public-private partnerships within the space sector, boosting India's position in global space technology.
- India's Rise as a Global Space Power**
 - India's advancements in space exploration were underscored, particularly its successes with the Chandrayaan-3 lunar mission and the upcoming Gaganyaan



human spaceflight mission. These developments signal India's growing influence in space research and exploration. India is positioning itself as a key global partner in space, focusing on creating a robust space infrastructure that complements terrestrial networks.

➤ **Indo-European Union (EU) Space Collaboration**

- The Indo-EU space partnership was another significant focus of the conclave. The European Union Ambassador commended India for its dynamic space capabilities and stressed the importance of shared goals in space exploration. Proposed initiatives include collaborative efforts in Earth observation, space security, and training. The upcoming 2025 EU-India Summit is expected to further strengthen the ties between India and the EU in space governance and the peaceful use of outer space.
- A key milestone in this partnership is the launch of the EU's Proba-3 satellite by ISRO, which will focus on solar observation. This launch marks India's third collaboration with the EU following the successful Proba-1 and Proba-2 missions, enhancing ISRO's reputation as a trusted partner on the global stage.

➤ **Emergence of Space Startups in India**

- The rise of space-focused startups in India was also acknowledged. Following the 2020 Space Sector Reforms, over 300 startups have emerged, contributing significantly to India's innovation landscape and economic growth. These reforms have not only fostered entrepreneurship but have also reversed the brain drain, with talented professionals returning from agencies like NASA to join India's growing space ecosystem.

➤ **India's Space Program Ambitions**

- India's long-term space goals were outlined, with key milestones set for the coming decades. These include the Gaganyaan human spaceflight mission, the first crewed lunar landing by 2040, the establishment of an Indian Space Station by 2035, and the potential for space tourism by 2040. These ambitious plans underscore India's commitment to advancing space exploration and technology on a global scale.

Space Sector Reforms 2020: Transforming India's Space Ecosystem

➤ **Involvement of Private Players**

- The Space Sector Reforms of 2020 were a landmark step in transforming India's space industry. By promoting greater private sector participation, India has expanded its space capabilities and is striving to capture a larger share of

the global space economy. Key reforms include the establishment of the Indian National Space Promotion and Authorization Center (IN-SPACe) and the enhanced role of New Space India Limited (NSIL).

- IN-SPACe serves as a regulatory body aimed at fostering innovation in space, collaborating with the private sector, academia, and startups to achieve space-related goals.
 - NSIL is responsible for enabling Indian industries to take on high-technology space activities, ensuring the commercialization of space ventures, and facilitating the growth of India's space economy.
- **Satcom Reforms 2022: Boosting Innovation and Participation**
- The Satcom Reforms of 2022, introduced by the Department of Telecommunications (DoT), were designed to streamline the satellite communication process and facilitate private sector participation. By reducing processing time from six to eight months down to just six weeks, these reforms aim to simplify the setup of satellite communication systems, enhancing the Ease-of-Doing-Business environment and fostering further innovation in India's space sector.

India's First Mars & Moon Analog Mission: Simulating Extraterrestrial Life

- U
P
S
C
- **Overview of the Mars and Moon Analog Mission**
- India has launched its first Mars and Moon Analog Mission, a groundbreaking initiative designed to simulate the conditions astronauts would face on the Moon and Mars. Led by the Indian Space Research Organisation (ISRO) in collaboration with AAKA Space Studio and the University of Ladakh, this mission aims to tackle the challenges of creating sustainable human habitats beyond Earth. It focuses on studying life support systems, psychological well-being, and sustainability in isolated environments that resemble the harsh conditions of space.
- **Why Ladakh? Ideal Conditions for Space Habitat Testing**
- Ladakh was selected as the testing ground for this analog mission due to its unique environmental conditions, which closely mimic those of Mars and the Moon. The region's high altitude, arid climate, and extreme temperature fluctuations make it an ideal location for testing the technologies required for space habitation.
 - Key environmental conditions in Ladakh that support space habitat simulation include:
 - **Temperature Variability:** Ladakh experiences temperatures ranging from 15°C during the day to -10°C at night, mimicking the thermal conditions of

outer space.

- **Low Oxygen Levels:** The oxygen levels in Ladakh are just 40% of those at sea level, making it an ideal location to test life support systems for low-pressure environments like those on Mars.
- **Mars-like Terrain:** The region's rocky, sandy soil mirrors the regolith found on the Moon and Mars, providing an excellent opportunity for research into rover mobility and in-situ resource utilization.

➤ **Technological Innovations in Space Habitat Simulation**

- The analog mission will focus on testing several advanced technologies to support long-duration space missions:
- **Circadian Lighting:** A system designed to simulate natural daylight cycles to maintain astronaut health and well-being.
- **Hydroponics Systems:** A sustainable method for growing food in space, ensuring astronauts receive adequate nutrition during extended missions.
- **Standalone Solar Power Systems:** These systems provide renewable energy to the habitat, ensuring its independence from Earth-based power sources.

➤ **Significance of Analog Missions for Future Space Exploration**

- Analog missions are crucial for solving challenges related to space travel, including the physical, mental, and operational conditions astronauts will face on Mars, the Moon, or other deep-space missions. By conducting analog missions on Earth, space agencies can test technologies, simulate conditions, and gain insights into how humans can adapt to life in space before actual missions are launched.

➤ **Global Analog Mission Initiatives**

- India's Mars and Moon Analog Mission joins a series of global analog missions conducted in extreme environments to prepare for future space exploration:
- **Desert Research and Technology Studies (Desert RATS)** by NASA tests rovers and astronaut operations in desert environments simulating Mars and Moon conditions.
- **NASA Extreme Environment Mission Operations (NEEMO)** allows astronauts to live in Aquarius, the world's only underwater research station, simulating deep-sea and space conditions.
- **Hawai'i Space Exploration Analog and Simulation (HI-SEAS)** focuses on simulating long-duration Mars missions, studying crew dynamics, isolation, and habitat technology.



Conclusion:

- The 3rd Indian Space Conclave and the launch of India's first Mars and Moon Analog Mission mark significant steps in the country's ambitious space agenda. The focus on Satcom as a driver of Digital India, the strengthening of Indo-EU space collaborations, and the emergence of India as a global space leader, alongside cutting-edge technological advancements in space habitat testing, all reflect India's commitment to advancing space exploration.

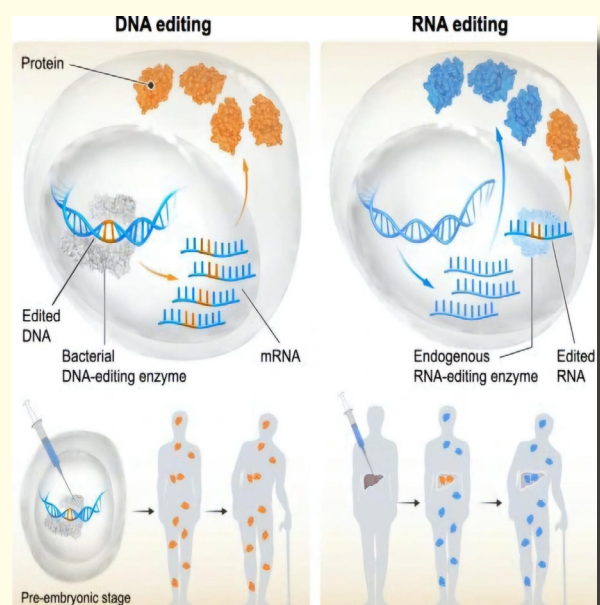
First Successful RNA Editing Clinical Trial in Humans

Relevance: GS III - Science & Technology

- In News:** Wave Life Sciences, a US-based biotechnology company, has successfully conducted the first clinical demonstration of RNA editing in humans, aimed at treating alpha-1 antitrypsin deficiency (AATD), a genetic disorder.
- AATD leads to abnormal levels of the α -1 antitrypsin protein, which negatively impacts the liver and lungs.

About RNA Editing:

- RNA editing is a process in which the genetic information in RNA sequences is modified through insertion, deletion, or substitution of nucleotides.
- This technique allows for targeted changes in the genetic code, potentially correcting genetic mutations and restoring normal cellular function.
 - ✓ **Techniques Used:** The editing process employed by scientists involves the use of Adenosine Deaminase Acting on RNA (ADAR) with guide RNA (gRNA).
 - ✓ **Guide RNA (gRNA):** These small RNA molecules direct the editing machinery by pairing with messenger RNA (mRNA) at specific regions, guiding the modification process.
- RNA Editing Process**
 - ✓ **RNA's Building Blocks:** RNA is made up of four building blocks: Adenine (A), Guanine (G), Uracil (U), and Cytosine (C).
 - ✓ **Role of ADAR:** The ADAR enzyme converts adenosine (A) in the mRNA



sequence to inosine (I). Inosine mimics guanosine (G), and when detected by the cell, it triggers a response to correct the mismatch.

- ✓ **Cellular Response:** As a result, the mRNA's original function is restored, and the cell starts producing normal proteins.
- **Challenges in RNA Editing**
- Despite its promising potential, RNA editing faces several challenges:
 - ✓ **Lack of Specificity:** The ADAR enzyme can sometimes cause unintended changes in the mRNA sequence due to the lower accuracy of gRNA, potentially leading to side effects.
 - ✓ **Transient Nature:** RNA editing effects are temporary, and repeated treatments may be required to maintain the therapeutic benefits.

RNA vs. DNA Editing: A Comparison:

- **Form of Change:** DNA editing makes permanent changes to the genetic code, whereas RNA editing only makes temporary modifications, which may dissipate over time. This makes RNA editing safer and more flexible, as it avoids the risk of irreversible errors associated with DNA editing.
- **Risk of Allergic and Immune Reactions:** RNA editing has a lower risk of undesirable immune reactions compared to DNA editing. DNA editing often uses bacterial proteins to cut the DNA, while RNA editing relies on ADAR enzymes, which are naturally occurring in the human body.

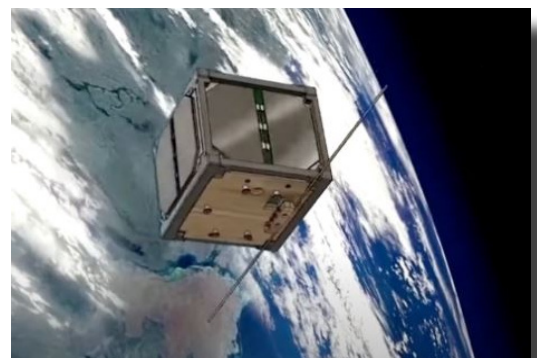
Conclusion:

- The successful clinical demonstration of RNA editing in humans marks a significant milestone in genetic medicine, opening new avenues for treating genetic disorders like AATD.
- However, challenges related to specificity and the transient nature of RNA editing still need to be addressed in future research and treatment development.

Lignosat: The First Wood-Panelled Satellite

Relevance: GS III - Space Technology

- **In News:** The recent launch of Lignosat, the world's first wood-panelled satellite, into space by a Japanese spacecraft, marks a significant milestone in space technology.
- This satellite aims to test the durability



of wood in extreme temperatures and evaluate the potential of timber as a renewable building material for future space missions.

Objective of the Mission:

- **Durability Testing:** The primary goal of the mission is to assess how wood performs in the harsh environment of space, where temperatures fluctuate dramatically.
- **Renewable Material:** The satellite also aims to explore the feasibility of using timber as a sustainable material for constructing spacecraft in the future.

Development and Launch:

- **Collaborators:** Lignosat was developed by Kyoto University in collaboration with the logging company Sumitomo Forestry.
- **Launch Details:** The satellite was launched aboard SpaceX's Falcon 9 Block 5 rocket and will remain in orbit for six months to undergo testing.

Satellite Specifications:

- **Size and Weight:** Lignosat is a small, palm-sized satellite, measuring 4 inches (10 cm) on each side and weighing just 900 grams.
- **Material:** The satellite is primarily made of Honoki Wood, a type of magnolia tree native to Japan. However, it is not entirely made of wood, as aluminium structures and electronic components are also incorporated into the wood-panel casing.

Tests to be Conducted:

- **Extreme Temperature Exposure:** The satellite will be tested for the durability of wood in space, where temperatures can fluctuate between -100°C to 100°C every 45 minutes.
- **Radiation Protection:** The ability of the timber to reduce the impact of space radiation on semiconductors will be assessed.
- **Structural Integrity:** Researchers will examine the changes in the wood's structure, integrity, and resilience during its time in orbit.

Benefits of Wooden Satellites:

- **Enhanced Durability:** Wood, in the absence of water and oxygen in space, becomes more durable as it is less prone to rot or inflammation compared to its behavior on Earth.
- **Sustainability:** Wooden satellites represent a renewable solution for space travel, reducing reliance on non-renewable materials like metals.

- **Environmental Safety:** When the satellite eventually returns to Earth, it will not release harmful pollutants such as aluminium oxides, unlike conventional materials used in spacecraft.
- **Safety in Space:** Wooden materials may also reduce the risk of damage to active satellites, space stations, and astronauts by minimizing the risk of harmful debris upon re-entry.

Conclusion:

- The successful deployment of Lignosat provides valuable insights into the use of sustainable materials for space technology and lays the groundwork for future research on the viability of timber-based structures in space exploration.

Operation Dronagiri and Geospatial Data Interface

Relevance : GS III - Science & Technology

- **In News:** The Ministry of Science & Technology has launched Operation Dronagiri & the Integrated Geospatial Data Sharing Interface (GDI) as part of its efforts to liberalize geospatial data and enhance geospatial infrastructure, skills, and knowledge.



About Geospatial Data:

- **Definition:** Geospatial data refers to information that describes objects, events, or features with a specific location on or near the Earth's surface.
- **Examples:** Satellite imagery, census information, social media data, etc.
- **Significance:** Geospatial data is recognized as a vital component of national infrastructure and an essential resource for decision-making.

About Operation Dronagiri:

- **Overview:**
 - ✓ A pilot initiative under the National Geospatial Policy 2022, implemented by the Geospatial Innovation Cell within the Department of Science and Technology.
 - ✓ Aimed at demonstrating the potential of geospatial technologies in enhancing the quality of life and ease of doing business.
- **Implementation:**

- ✓ Initial phase in Uttar Pradesh, Haryana, Assam, Andhra Pradesh, and Maharashtra.
- ✓ Focus on pilot projects across three sectors:
 1. Agriculture
 2. Livelihoods
 3. Logistics and Transport
- Purpose: Showcase the integration of geospatial data and technology for innovative solutions in targeted sectors.

About the Integrated Geospatial Data Sharing Interface (GDI):

- Key Features:
 - ✓ Facilitates access to geospatial data using advanced data exchange protocols and privacy-preserving mechanisms.
- Significance:
 - ✓ Promotes seamless data sharing.
 - ✓ Empowers data-driven decision-making for public welfare.
 - ✓ Encourages responsible use of geospatial data across domains.

Highlights of the National Geospatial Policy 2022:

- Vision:
 - ✓ Establish India as a global leader in the geospatial sector.
 - ✓ Create a robust national geospatial framework.
 - ✓ Facilitate easy accessibility to valuable geospatial data.
- Institutional Framework:
 - ✓ Geospatial Data Promotion and Development Committee (GDPDC): Apex body overseeing the geospatial sector.
 - ✓ Survey of India: Central nodal agency for geospatial data management.
 - ✓ Introduction of a National Digital Twin Strategy and Geospatial Knowledge Infrastructure to foster innovation and integration in the sector.

'One Day One Genome' Initiative Launched by Department of Biotechnology

Relevance: GS III - Science & Technology

- **In News:** The Department of Biotechnology and the Biotechnology Research and Innovation Council have launched the 'One Day One Genome' initiative.
- This initiative aims to publicly release a fully annotated bacteriological genome, contributing to the enhancement of scientific knowledge, fostering innovation, and improving accessibility of microbial genomics data for researchers.



About Genome and Genome Sequencing:

- **What is a Genome?**
 - ✓ A genome refers to the complete set of genetic material (either DNA or RNA) of an organism. It contains the entire hereditary information of the organism, encoded in unique nucleotide base sequences.
- **What is Genome Sequencing?**
 - ✓ Genome sequencing is the process of determining the precise order of nucleotide bases (Adenine (A), Cytosine (C), Guanine (G), and Thymine (T) in DNA; A, C, G, and Uracil (U) in RNA) within an organism's genetic material.

Applications of Genome Sequencing (GS):

- **Disease Detection:** Genome sequencing is crucial in the detection and evaluation of rare disorders and preconditions for diseases. Examples include genetic conditions like cystic fibrosis and thalassemia.
- **Pharmacogenomics:** This field evaluates the effectiveness and safety of drugs based on the genomic information of individuals, helping tailor personalized treatment plans.
- **Metagenomic Sequencing:** Metagenomic sequencing explores the collective genomes of multiple species in a specific environment, allowing for:
 - ✓ Rapid species identification
 - ✓ Environmental impact analysis
- **Agriculture:** In agriculture, genome sequencing is employed to:

- ✓ Identify genetic markers for traits like disease resistance and drought tolerance in crops.
- ✓ Reduce the time required for developing new crop varieties.
- ✓ Study host-pathogen relationships in crops.
- **Microbial Sequencing:** Microbial genome sequencing aids in:
 - ✓ The development of advanced biofuels.
 - ✓ Creating innovative diagnostic tools and improving vaccines.
 - ✓ Developing sophisticated environmental cleanup techniques.

Significance of Microbes:

- **Environmental Contributions:** Microbes play an essential role in biogeochemical cycles, including soil formation, and contribute to the environment in numerous ways. For example, algae are key in producing food via sunlight and releasing oxygen into the atmosphere.
- **Role in the Human Body:** Microbes are vital for various bodily functions, including Digestion, Immune system functioning, Mental health regulation
- **Contribution to Household Products:** Microbes are used in the development of flavors, foods, and beverages. For example, Lactic Acid Bacteria (LAB) are used in food fermentation processes.
- **Industrial Applications:** Microbial applications are significant in various industries:
 - ✓ Baker's yeast is used for bread making and the production of alcoholic beverages like beer.
 - ✓ Microbes also play a role in biofuel production and sewage treatment.

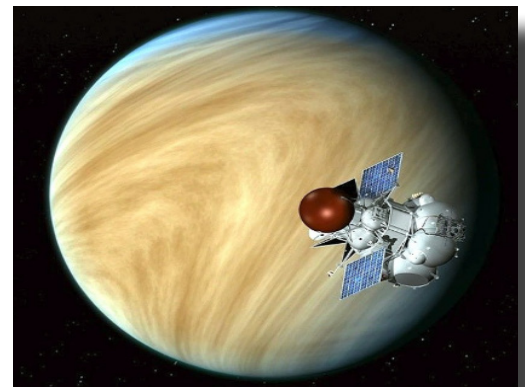
December - 2024

UPSC

ISRO Receives Green Light for Venus Mission: Shukrayaan

Relevance: GS III - Space Technology

- **In News:** The Indian Space Research Organisation (ISRO) has received government approval for its ambitious Venus Orbiter Mission (VOM), titled Shukrayaan, aimed at studying the atmosphere, surface, and solar interaction of Venus.



About the Venus Orbiter Mission (VOM):

- **Launch Timeline**

✓ Scheduled for 2028 by the Department of Space.

• Primary Objectives

✓ Scientific Research:

- Analyzing the Venusian atmosphere, focusing on dust content and airglow phenomena.
- Mapping the planet's surface topography.
- Studying the solar X-ray spectrum in proximity to Venus.

✓ Technology Demonstration:

- Testing aero-braking techniques: Using the planet's atmosphere to decelerate and modify spacecraft orbits.
- Enhancing thermal management systems to withstand Venus's hostile conditions.

Mission Payloads:

- **Indian Payloads:** Sixteen payloads developed domestically.
- **Collaborative Payloads:** Two Indian-international collaborative payloads: VISWAS and RAVI.
- **International Contribution:** One global payload: VIRAL (Venus Infrared Atmospheric Gases Linker).

Significance of Shukrayaan:

- **Scientific Exploration:** Offers insights into the solar system's evolution and planetary atmospheric dynamics.
- **Climate Change Studies:** Venus's CO₂-dominated atmosphere serves as a model to study greenhouse effects and climate phenomena on Earth.
- **Earth's Evolution:** Provides comparative analysis to understand Earth's atmospheric and geological evolution.

Challenges of the Mission:

- **Harsh Environmental Conditions:** Venus's extreme temperatures and atmospheric pressure pose risks to spacecraft functionality.
- **Corrosive Atmosphere:** Sulfuric acid clouds can degrade spacecraft components, including those made of resistant materials like steel and titanium.
- **Other Technical Challenges:** Navigating rugged terrain, limited sunlight for solar panels, and designing systems to endure Venus's hostile environment.

Global Missions to Venus:

- **Previous Missions**
 - ✓ **Mariner 2 (USA, 1962):** The first successful Venus flyby.
 - ✓ **Venus Express (ESA):** Focused on atmospheric studies.
 - ✓ **Magellan (NASA):** Mapped the Venusian surface.
 - ✓ **Akatsuki (Japan):** An ongoing mission studying Venus's atmosphere.
- **Future Missions**
 - ✓ **Venus Life Finder Mission:** Collaboration between Rocket Lab and MIT.
 - ✓ **DAVINCI and VERITAS (NASA):** Investigating atmospheric composition and surface geology.
 - ✓ **EnVision (ESA):** Aimed at understanding Venus's geological activity.

U
P
S
C

December - 2024

India-Spain Bilateral Relations

Relevance: GS II - Bilateral Relations

- **In News:** A joint statement was issued following the visit of the Spanish President to India, marking the first such visit in 18 years.



Major Outcomes:

- **Defense Collaboration:** The two nations jointly launched the C295 Aircraft Final Assembly Line in Vadodara, developed by Tata Advanced Systems in partnership with Airbus Spain.
- **Investment Promotion:** A streamlined Fast Track Mechanism was established between India's Department for Promotion of Industry and Internal Trade (DPIIT) and Spain's Directorate General of International Trade and Investment to enhance bilateral investment opportunities.
- **Consular Expansion:** Spain announced the opening of a new Consulate in Bengaluru, while an Indian Consulate will soon commence operations in Barcelona.
- **Cultural Partnership:**
 - ✓ A Cultural Exchange Programme was launched, covering 2024–2028.
 - ✓ 2026 was designated as the India-Spain Year of Culture, Tourism, and Artificial Intelligence.

Importance of Bilateral Relations:

- **Defense Cooperation:** Defense ties have strengthened through the India-Spain Defence Joint Working Group and projects like the C295 aircraft manufacturing collaboration.
- **Economic and Commercial Relations:** Spain is India's 6th largest trade partner within Europe, with trade volumes reaching close to \$9.9 billion in 2023.
- **Multilateral and Global Collaboration:**
 - ✓ Mutual support for each other's candidacies for the United Nations Security Council.
 - ✓ Shared commitment to addressing global issues, including climate change, counter-terrorism, and sustainable development goals.

Conclusion:

- The recent India-Spain joint statement underscores the strengthening of a comprehensive partnership between the two nations. The focus on defense manufacturing, economic investment, consular ties, and cultural exchange highlights a shared vision for mutual growth and collaboration.
- By fostering deeper engagement across multiple sectors, India and Spain are positioning themselves as strategic allies on both bilateral and multilateral fronts, committed to addressing global challenges and fostering sustainable development.
- This partnership not only enriches diplomatic relations but also promotes stability, innovation, and prosperity for both nations.

India Joins Steering Committee of Asset Recovery Interagency Network-Asia Pacific

Relevance: GS II - Regional Groups

- **In News:** India, through the Directorate of Enforcement (ED), has been inducted into the Steering Committee of ARIN-AP.
- This membership strengthens India's role in shaping ARIN-AP's policy direction and managing its administrative duties, enhancing global efforts against economic crimes.
- India will hold the presidency of ARIN-AP and is set to host its Annual General Meeting in 2026.



December - 2024

About ARIN-AP:

- **Mandate:** ARIN-AP is a significant interagency network focused on addressing crime proceeds across the Asia-Pacific region.
- **Global Link:** It is part of the broader CARIN Network, a global, informal network of law enforcement and judicial experts skilled in asset tracing, freezing, seizure, and confiscation.
- **Membership:** ARIN-AP consists of 28 member jurisdictions, including India, and has nine observer members.

Conclusion:

- India's inclusion in the ARIN-AP Steering Committee signifies a strengthened commitment to combating economic crimes on a global scale. By taking on a leadership role, including hosting responsibilities in 2026, India is poised to make significant contributions to asset recovery efforts and international cooperation within the Asia-Pacific region.

U
P
S
C

India Holds First Official Meeting with Taliban Defense Minister

Relevance : GS II - Bilateral Relations

- **In News:** India's recent diplomatic engagement with Afghanistan, marked by an official visit, signals India's evolving strategy towards Afghanistan since the Taliban assumed power in 2021.



India's Engagement with Afghanistan Post-Taliban Takeover:

- While India has not formally recognized the Taliban-led government, it has gradually adopted a more realistic approach to safeguard its interests in Afghanistan and the broader region. Since 2022, this engagement has included:
 - ✓ **Technical Presence in Kabul:** A technical team has been stationed at the Indian Embassy to oversee humanitarian assistance and other essential activities.
 - ✓ **Educational Support:** Through the Indian Council for Cultural Relations (ICCR), over 3,000 Afghan students have been granted admissions (as of December 2023).
 - ✓ **Regional Cooperation Efforts:** India participated in the 2024 Afghanistan Regional Cooperation Initiative meeting in Kabul.

Why is India's Engagement with Afghanistan Crucial?

- **Geopolitical Interests**
 - ✓ India's interest in Afghanistan extends to countering Pakistan's influence and securing access to Central Asia for strategic and economic gains.
- **Regional Stability**
 - ✓ India is concerned about potential instability from Afghanistan spilling into the region. Notably, Afghanistan accounted for over 80% of the world's opium production in 2021, with potential proceeds fueling terrorist activities.
- **Protection of Indian Investments**
 - ✓ India has made significant investments in Afghan infrastructure, underscoring the need to secure these assets.

Key Indian-Supported Infrastructure Projects in Afghanistan:

- **Salma Dam (Afghan-India Friendship Dam):** Inaugurated in 2016, this dam symbolizes India's commitment to Afghan infrastructure and development
- **Zaranj-Delaram Highway:** Built by India's Border Roads Organisation, this highway, located near Afghanistan's border with Iran, provides India with an



U
P
S
C

December - 2024

alternative access route to landlocked Afghanistan via Iran's Chabahar port, effectively bypassing Pakistan.

Conclusion:

- India's renewed engagement with Afghanistan through pragmatic diplomacy reflects its strategic need to maintain influence, safeguard investments, and promote regional stability.
- By establishing ties and supporting infrastructure, India seeks to balance regional dynamics while contributing to Afghanistan's development amidst the complexities of Taliban rule.

Unified Complex Radio Antenna (UNICORN)

Relevance: GS II - Bilateral Relations

- **In News:** India and Japan have signed a Memorandum of Understanding (MoU) for the joint design and manufacturing of the Unified Complex Radio Antenna (UNICORN) mast, tailored for Indian Navy warships.



What is the UNICORN Mast?

- The UNICORN Mast is a cutting-edge antenna system engineered to improve the concealment and operational effectiveness of naval vessels.
- **Key Features:**
 - ✓ **Integrated Antennas:** Merges several antennas, typically mounted separately, into a single radar enclosure (radome).
 - ✓ **Improved Stealth:** Reduces the electromagnetic signatures of ships, minimizing their visibility and making them less susceptible to detection.
 - ✓ **Collaborative Development:**
 - **Created by three Japanese firms:** NEC Corporation, Sampa Kogyo K.K., and The Yokohama Rubber Co., Ltd.
 - Jointly developed in India by Bharat Electronics Limited (BEL).
 - ✓ **Proven Efficiency:** Currently utilized on Mogami-class frigates of the Japan Maritime Self-Defense Force.

Mission Objectives:

- **Enhancing Ship Stealth**
 - ✓ Refine stealth capabilities by reducing radar and electronic detectability.

- **Fortifying Defence Relations**
 - ✓ Strengthen India-Japan collaboration in co-creating sophisticated defence equipment.
- **Boosting Operational Performance**
 - ✓ Upgrade radar & communication systems for enhanced surveillance & preparedness.
- **Encouraging Domestic Innovation**
 - ✓ Reinforce India's autonomy in defence manufacturing through BEL's participation.

Significance of the Initiative:

- **Groundbreaking Defence Partnership**
 - ✓ Marks Japan's first export of military technology to India under their 2015 strategic agreement.
- **Stealth Technology for Indian Navy**
 - ✓ Equips naval ships with advanced concealment capabilities, increasing survivability and mission effectiveness.
- **Augmenting Regional Stability**
 - ✓ Strengthens maritime security and deterrence efforts in the Indo-Pacific region.
- **Empowering Indigenous Defence Sector**
 - ✓ Promotes technology sharing and innovation, reinforcing the Make in India initiative for self-reliance in defence production.

Conclusion:

- The UNICORN mast project signifies a pivotal step in India-Japan defence collaboration, advancing naval technology, fostering innovation, and reinforcing maritime security in the Indo-Pacific.

Russia's Revised Nuclear Doctrine

Relevance: GS II International Issue

- **In News:** Russia's President has approved a revised Nuclear Doctrine (ND), updating its 2020 framework to expand the scope of nuclear deterrence and redefine scenarios for potential nuclear use.



About Nuclear Doctrine (ND)

- **A Nuclear Doctrine outlines a nation's policies regarding:**

- ✓ Purpose and deployment of nuclear weapons.
- ✓ Development and conditions for their potential use.

Russia's Revised Nuclear Doctrine (ND):

• Broader Definition of Nuclear Attack

- ✓ **Joint Aggression Clause:** Any attack on Russia by a non-nuclear state supported by a nuclear state will now be treated as a joint nuclear threat, warranting nuclear retaliation.
- ✓ Explicitly targets nations allowing their territories to be used for hostile actions against Russia.

• Lowering the Nuclear Threshold

- ✓ Shift in focus from defending the state's existence to protecting sovereignty and territorial integrity.
- ✓ Belarus has been formally placed under Russia's nuclear umbrella.

• New Triggers for Nuclear Response

- ✓ Potential risks that could provoke a nuclear reaction include:
 - Expansion of military coalitions hostile to Russia.
 - Large-scale military exercises near Russia's borders.
 - Deployment of enemy military infrastructure closer to Russian territory.

Potential Impacts of Russia's Revised ND:

- **Increased Risk of Escalation:** The doctrine raises the likelihood of tactical nuclear warfare, blurring the line between conventional and nuclear conflicts.
- **Weakening of the Non-Proliferation Regime:** By lowering the nuclear use threshold, the doctrine may undermine global efforts to curb nuclear proliferation.
- **Rising Global Distrust:** The expanded definition of "extreme circumstances" could heighten mistrust between Russia and other global powers, especially the United States.

India's Nuclear Doctrine (2003):

- **No First Use (NFU):** India commits to not using nuclear weapons unless first attacked by a nuclear adversary.
- **Credible Minimum Deterrence (CMD):** Ensures a minimum but effective nuclear arsenal to deter aggression.
- **Massive Retaliation Policy:** Any nuclear attack against India will be met with a massive and punitive response.
- **Civilian Control:** Nuclear weapons remain under the exclusive control of civilian leadership via the Nuclear Command Authority (NCA).



- **Non-Use Against Non-Nuclear States:** India pledges not to use nuclear weapons against nations that do not possess them.

Conclusion:

- Russia's updated Nuclear Doctrine represents a significant shift in its nuclear strategy, emphasizing increased flexibility and expanded response scenarios. While India's nuclear doctrine remains anchored in principles like No First Use and Credible Minimum Deterrence, Russia's revisions highlight evolving global nuclear dynamics, underscoring the need for robust international dialogue to prevent escalation and strengthen non-proliferation norms.

World Bank Releases "Jobs at Your Doorstep" Report

Relevance : GS II - Global Groups

- **In News:** The World Bank has released the "Jobs at Your Doorstep" report, prepared as part of the Strengthening Teaching-Learning and Results for States (STARS) program.



Key Features of the Report:

- **Objective**
 - ✓ The report is a skills gap analysis aimed at aligning school-based vocational training with the specific industrial and economic needs of the districts where the schools are located.
- **Key Findings**
 - ✓ **Opportunities in Services and Agriculture:** Jobs in the services sector and efforts to enhance agricultural income provide significant avenues for school-based skill development.
 - ✓ **High-Demand Sectors and Trades:** Fourteen key sectors—such as electronics and hardware, beauty and wellness, healthcare, and fashion—offer opportunities to address high-demand jobs through vocational education in schools.
 - ✓ **Factors Contributing to Skill Gaps:**
 - Learning deficiencies in foundational education.
 - Employability challenges, including lack of digital literacy, problem-solving skills, and communication abilities.
 - Mismatch between vocational training programs and the dynamic needs of industries.

About STARS Program:

- **Overview**
 - ✓ **Launch Year:** Approved in 2020 for a five-year period (FY 2024–25).
 - ✓ **Funding:** Centrally sponsored, with support from the World Bank.
 - ✓ **States Covered:** Implemented in six states—Himachal Pradesh, Maharashtra, Odisha, Rajasthan, Madhya Pradesh, and Kerala.
- **Objectives**
 - ✓ Improve the quality and governance of school education.
 - ✓ **Focus on areas like:**
 - Early childhood education.
 - Learning assessments to track progress.
 - Enhancing teacher performance.
 - Facilitating school-to-work transitions.
 - Promoting decentralized management.
 - ✓ Aligns with the Samagra Shiksha Scheme and supports the operationalization of the National Education Policy (NEP) 2020.

Suggested Measures to Address Skill Gaps:

- **Expand Skill Education Access**
 - ✓ Include more schools under vocational education initiatives.
 - ✓ Establish Skill Hubs for regional skilling support.
- **Realign Trade Offerings**
 - ✓ Match school-level trades with the local economy and existing industrial capacity.
- **Upgrade Learning Infrastructure**
 - ✓ Enhance facilities for skill training.
 - ✓ Introduce experiential learning methods to foster practical skills.
- **Strengthen Assessment Mechanisms**
 - ✓ Implement skill proficiency assessments.
- Build public-private partnerships with industry stakeholders to ensure relevant and updated vocational curricula.

India Endorses Final Act of Riyadh Design Law Treaty (DLT)

Relevance: GS II - Bilateral Relations

- **In News:** India has officially endorsed the Final Act of the Riyadh Design Law Treaty (DLT), reaffirming its dedication to fostering inclusive development and enhancing its intellectual property (IP) framework.



- This treaty, finalized after nearly two decades of discussions by member nations of the World Intellectual Property Organization (WIPO), marks a pivotal achievement in harmonizing and simplifying the global design registration process.

Key Features of the Design Law Treaty (DLT):

- **Streamlined Application Process:** Allows submission of multiple designs within a single application under specified parameters.
- **Filing Date Requirements:** Establishes definitive criteria for determining a filing date, preventing forfeiture of rights due to delays.
- **Design Confidentiality:** Permits applicants to maintain their designs as confidential for a minimum of six months post-filing.
- **Grace Period for Public Disclosure:** Provides a 12-month buffer period after the initial public disclosure of a design, ensuring such disclosure does not compromise its registration validity.
- **Digital Filing Systems:** Incorporates online application mechanisms and facilitates the digital exchange of priority documents, enhancing efficiency.

Importance of the Design Law Treaty:

- **Supporting Startups and SMEs:** Safeguards their designs internationally, boosting competitiveness and growth opportunities.
- **Uniform Procedures:** Reduces complexity and expenses, ensuring processes are more reliable and accessible.
- **Cultural Safeguarding:** Links design protection with indigenous knowledge and cultural heritage, strengthening their preservation.
- **Global Collaboration:** Harmonizes procedural standards, lessens administrative challenges, and encourages international innovation in design.

About Intellectual Property (IP):

- **Definition:** Intellectual Property refers to original creations, including inventions, industrial designs, artistic works, and trademarks, utilized in commerce.
- **Objective:** IP rights enable creators or owners to derive economic benefits from their innovations.
- **Categories of IP**
 - ✓ Patents, Copyrights, Trademarks, Trade Secrets, Geographical Indications.

About World Intellectual Property Organization (WIPO):

- **Formation:** Established in 1967 as a specialized branch of the United Nations.
- **Headquarters:** Geneva, Switzerland.
- **Members:** Comprises 193 member states, including India.
- **Mandate:** Promotes worldwide awareness and enforcement of intellectual property rights (IPRs).

Conclusion:

- India's ratification of the Riyadh DLT signifies a major step in aligning its IP ecosystem with global norms.
- This move not only strengthens domestic design protections but also positions India as a key contributor to advancing global creativity and innovation.

Stagnant Rural Wages: A Paradox Amid Economic Growth

Context

- Despite robust growth in the Indian economy and the agricultural sector—with average annual rates of 4.6% and 4.2% respectively from 2019-20 to 2023-24—rural wages have remained stagnant. This creates a paradox where, in spite of Gross Domestic Product (GDP) growth, wages in both agricultural and non-agricultural sectors in rural areas have either stagnated or declined.



Current State of Rural Wages

➤ Nominal Wages

- Between April 2019 and August 2024, rural wages increased at an average annual rate of 5.2% in nominal terms (without inflation adjustments).
- For agricultural wages specifically, nominal growth was slightly higher at 5.8%, reflecting a somewhat stronger demand or changing labour dynamics in agriculture.

➤ Real Wages

- Over the same period, real wage growth (adjusted for inflation) for rural workers overall was negative at -0.4%, with agricultural wages seeing a marginal increase of 0.2%.
- This disparity suggests that inflation has eroded the purchasing power of rural wages, impacting the real income of rural workers despite nominal wage growth.

➤ Recent Trends (2023-24 Fiscal Year)

- In the initial five months of the 2023-24 fiscal year (April-August), agricultural wages grew by 5.7% nominally and 0.7% in real terms.

➤ Note on Data Collection

- Data Source: Compiled by the Labour Bureau, which monitors daily wage data across 25 agricultural and non-agricultural occupations.
- Scope: Collected from 600 villages across 20 states.
- Occupations Tracked: Includes 25 different roles, such as horticulture, animal

husbandry, irrigation, and plant protection activities.

- Methodology: Wages are measured both nominally and in real terms (adjusted for inflation based on the rural consumer price index).

Reasons for Rural Wage Stagnation

➤ Higher Female Labour Force Participation Rate (LFPR)

- Female LFPR has significantly risen from 26.4% in 2018-19 to 47.6% in 2023-24. This increase in rural female labour has led to more people willing to work at existing or lower wage rates, placing downward pressure on wages.

➤ Low Agricultural Productivity

- Agriculture, especially in rural regions, typically exhibits low marginal productivity, meaning the influx of additional labour does not proportionally increase output or productivity.

➤ Capital-Intensive Technology

- Technological advances across industries are replacing manual labour, thus reducing demand for rural non-agricultural jobs (e.g., mechanization in threshing and harvesting). This shift benefits capital owners but restricts wage growth and job creation for rural workers.

➤ Decline in Non-Agricultural Labour Demand

- Labour-intensive sectors like Fast-Moving Consumer Goods (FMCG) and household appliances are facing reduced sales and profitability, reinforcing low rural wage growth. Additionally, the manufacturing and services sectors, which typically absorb rural labour, have not grown in proportion to GDP.

➤ Limited Non-Farm Employment Opportunities

- Small-scale and cottage industries, which could offer non-farm jobs in rural areas, remain underdeveloped or lack adequate support and financing.

➤ Weaknesses in Wage Guarantee Programs

- Delays in payments, budget limitations, and implementation issues in programs like MGNREGA reduce their effectiveness in addressing rural wage challenges.

➤ Inflationary Pressure

- Rising inflation erodes real wages, as nominal wage growth remains insufficient to keep up with increases in prices of essential commodities, fuel, and other goods.

➤ Impact of Climate Change

- Frequent climate challenges, such as droughts and floods, diminish agricultural income, which limits landowners' ability to offer higher wages and creates wage instability in rural labour markets.

Implications of Stagnant Rural Wages

➤ Weak Domestic Demand

- Given that a significant portion of India's population resides in rural areas, limited spending power in these areas suppresses demand for goods, especially from small and medium enterprises, impacting their viability and slowing the economic growth cycle.

➤ Financial Strain and Rising Debt

- High inflation and stagnant wages push rural households into debt cycles, reducing disposable income and increasing dependence on informal lenders.

➤ Underemployment

- Limited non-farm job opportunities and stagnant wages force many rural workers to return to agriculture, even when it is not economically rewarding.

➤ Gender Wage Inequality

- Wage stagnation affects both men and women, but women, who typically earn less than men for equivalent work, bear a disproportionate impact.

➤ Forced Migration

- Low wages and limited rural job prospects push rural workers to migrate to cities in search of better opportunities, which leads to urban overcrowding and strains infrastructure, housing, and public services.

➤ Hindered Human Development

- Low wages reduce access to quality healthcare, education, and nutrition, particularly for children, thereby affecting long-term rural development.

Strategies to Address Rural Wage Stagnation

➤ Enhancing Income Support Programs

- Expanding and increasing payouts under schemes like PM-KISAN and providing free grain distributions can alleviate financial burdens on low-income households.

➤ Periodic Wage Adjustments

- Regular revisions of rural minimum wages to account for inflation can help ensure wages grow in line with living costs. Utilising data from wage studies and Labour Bureau surveys can help guide policymakers in making informed decisions.

➤ Addressing the Gender Wage Gap

- Targeted programs like Maharashtra's Ladki Bahin Yojana (offering ₹1,500/month for families earning under ₹2.5 lakh) can provide specific support to women and low-income households impacted by wage stagnation.

➤ Promoting Rural Non-Farm Employment

- Policies should encourage labour-intensive sectors like textiles, food processing, and tourism. Programs such as MGNREGA can serve as a safety net during economic slowdowns or periods of seasonal unemployment.

➤ Modernising Agriculture

- Increasing agricultural productivity through improved access to technology, irrigation, and high-quality seeds can elevate wages by raising output and income per worker.

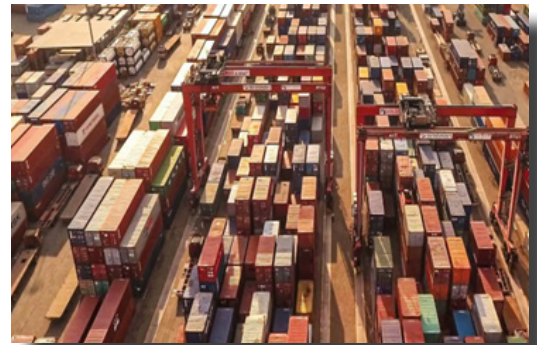
Conclusion

- Rural wage stagnation endures despite notable economic and agricultural growth, driven by factors such as an increased labour supply, low agricultural productivity, and limited non-farm job opportunities. Addressing this issue requires a multifaceted approach that includes targeted income support schemes, wage adjustments, skill development, and agricultural modernisation to ensure sustainable wage growth and rural development.

India's Trade Deficit: An Opportunity in Disguise

Context:

- India's trade deficit has often been viewed as a challenge, reflecting a gap between imports and exports. However, recent analyses by economists suggest a different narrative—India's trade deficit is a sign of strength in services, strategic investments, and economic integration. By examining its trade dynamics, India can leverage this perceived weakness as an opportunity for sustained growth.



Understanding India's Trade Deficit

➤ What is a Trade Deficit?

- A trade deficit occurs when a country's imports exceed its exports over a defined period. While traditionally seen as an economic weakness, a nuanced view recognizes the broader economic interplay, including capital inflows, sectoral strengths, and global competitiveness.

➤ India's Trade Performance (FY23-FY24)

- Overall Trade Deficit:
 - Reduced significantly from USD 121.6 billion (FY23) to USD 78.1 billion (FY24), indicating a narrowing gap.
- Services Trade:

- Services Exports: Reached USD 339.62 billion (FY24).
- Services Trade Surplus: Stands at USD 162.06 billion, reflecting India's dominance in global services, particularly in IT and pharmaceuticals.
- Global Rank: India's share in world services exports grew from 0.5% (1993) to 4.3% (2022), making it the 7th largest exporter globally.
- Merchandise Trade:
 - Merchandise Exports: Valued at USD 776 billion (FY23).
 - Merchandise Trade Deficit: Narrowed to USD 238.3 billion (FY24) from USD 264.9 billion (FY23).
- Current Account Deficit (CAD):
 - Reduced from USD 67 billion (2% of GDP, FY23) to USD 23.2 billion (0.7% of GDP, FY24), reflecting improved trade dynamics and external stability.
- Capital Account Balance:
 - Net inflows rose from USD 58.9 billion (FY23) to USD 86.3 billion (FY24), driven by foreign portfolio investments (FPIs), signaling India's attractiveness as an investment destination.

Reevaluating India's Trade Deficit: Why It's Not a Weakness

➤ Strength in Services Exports

- India has established itself as a global leader in IT, pharmaceuticals, and other services.
- A strong services surplus allows India to import goods without destabilizing its economy, balancing the trade deficit.

➤ Attractiveness as an Investment Destination

- India's ability to attract foreign investments results in a capital account surplus, which inherently balances the current account deficit (CAD).
- The CAD reflects India's strategy to draw investments for economic growth, rather than an inherent economic weakness.

➤ Boost to Export Competitiveness

- A trade deficit exerts downward pressure on the domestic currency, making exports cheaper and more competitive in global markets.
- This fosters growth in export-oriented industries, particularly in manufacturing and services.

➤ Sustainability of CAD

- India has maintained a modest CAD (around 2% of GDP), which is considered economically sustainable.
- Such a deficit is not alarming, provided it is matched by stable capital inflows and investments.

➤ Comparative Advantage

- India's trade deficit reflects its reliance on the principle of comparative advantage, focusing on exporting services where it has a global edge and importing goods where domestic production is less efficient.

➤ Support for Manufacturing Growth

- The deficit does not imply stagnation in manufacturing. Instead, imports of capital goods like machinery bolster manufacturing under initiatives like Make in India.

➤ Enhanced Economic Integration

- A trade deficit signals global economic integration, allowing access to diverse imports that support domestic industries and meet consumer demand.

Challenges of Persistent Trade Deficits

- While trade deficits have advantages, persistent deficits can create vulnerabilities:

➤ Loss of Economic Sovereignty:

- Prolonged deficits may lead to opportunistic takeovers of domestic assets by foreign entities, risking control over critical sectors.

➤ Higher Unemployment:

- Cheap imports can undermine local industries, leading to job losses and economic stagnation.

➤ Twin Deficits Hypothesis:

- Persistent trade deficits are often linked to fiscal deficits, as governments may rely on borrowing to meet economic needs.

➤ Deindustrialization:

- Domestic manufacturing may suffer as industries struggle to compete with more affordable or superior-quality imports.

➤ Risk of Balance of Payments Crisis:

- If deficits are financed through borrowing, a loss of investor confidence could trigger a crisis, as seen in India's 1991 economic crisis.

Steps Towards a Balanced Trade Strategy

➤ Export Credit Support

- Expand credit facilities for MSMEs to enhance their ability to compete in global markets, improving export performance.

➤ Strengthening Logistics Infrastructure

- Initiatives like the PM GatiShakti National Master Plan and National Logistics Policy (NLP) can reduce logistics costs, enhancing the competitiveness of domestic goods.

- **Effective Free Trade Agreements (FTAs)**
 - Negotiate FTAs that provide favorable terms for essential imports while supporting export growth.
- **Participation in Global Value Chains (GVCs)**
 - Integrate Indian firms into international supply chains to expand market access and improve export volumes.
- **Boosting Domestic Manufacturing**
 - Expand Production-Linked Incentive (PLI) schemes and initiatives like Districts as Export Hubs (DEH) to reduce reliance on imports.
- **Promoting High-Value Exports**
 - Encourage exports of electric vehicles (EVs), renewable energy technologies, and other high-value goods to generate greater revenue per unit exported.
- **Diversification of Export Basket**
 - Focus on emerging sectors like defense equipment, aerospace, and renewable energy to broaden India's export portfolio.
- **Addressing Non-Tariff Barriers**
 - Resolve sanitary and phytosanitary (SPS) barriers to open markets in developed countries, enhancing export opportunities.

Conclusion: Transforming Deficits into Strengths

- India's trade deficit, far from being a liability, reflects its evolving economic dynamics. By leveraging its strengths in services, enhancing domestic manufacturing, and fostering global economic integration, India can convert this challenge into an opportunity. Strategic reforms, balanced trade policies, and targeted investments will ensure that India remains resilient, competitive, and poised for sustainable growth in a globalized world.

December - 2024

RBI introduces framework for reclassification of FPI to FDI

- ☛ **Relevance : GS III - Economy**
- **In News:** The Reserve Bank of India (RBI) and the Securities and Exchange Board of India (SEBI) have issued a new framework to enable foreign portfolio investments (FPIs) to reclassify as foreign direct investments (FDI) when their holdings exceed 10% of a company's total paid-up equity capital.



Current Regulations:

- FPIs can currently hold a maximum of 10% of an Indian company's paid-up equity capital, representing the total amount received from shareholders in exchange for shares. Exceeding this limit previously required FPIs to either divest the surplus shares or reclassify them as FDI.

New Operational Framework for FPI-to-FDI Reclassification:

- **Sector Restrictions**
 - ✓ Reclassification is prohibited in sectors where FDI is not allowed, such as chit funds and gambling.
- **Approval Requirements**
 - ✓ Investments from FPIs require approvals, especially from investors from land-bordering countries, and need the concurrence of the Indian investee company.
- **Regulatory Compliance**
 - ✓ Investments must comply with entry routes, sectoral caps, pricing guidelines, and other FDI-related regulations as per the Foreign Exchange Management (Mode of Payment and Reporting of Non-Debt Instruments) Regulations, 2019.
- **Significance**
 - ✓ This framework makes it easier to attract foreign investments, provides greater flexibility for FPIs to transition to strategic investments, and enhances transparency and clarity for foreign investors in the Indian market.

Comparison of FDI and FPI:

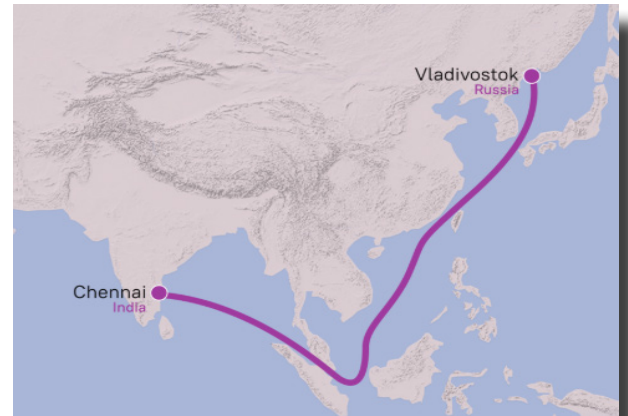
- **1. Investment Approach**
 - ✓ FDI: Involves direct involvement in ownership, control, and management with a focus on sustained engagement.
 - ✓ FPI: Passive investment with no role in management; emphasizes easily tradable financial assets without granting influence over the company.
- **2. Mode of Entry**
 - ✓ FDI: Occurs when a corporation sets up production facilities or operational infrastructure abroad.
 - ✓ FPI: Achieved through acquiring equity stakes in companies via stock exchanges.
- **3. Level of Control**
 - ✓ FDI: Provides investors with partial control over the company's operations.
 - ✓ FPI: Does not grant control over decision-making or company direction.
- **4. Investment Threshold**
 - ✓ FDI: Investments exceeding a 10% equity stake are classified as FDI.

- ✓ FPI: Limited to holding less than 10% of a company's paid-up capital.
- **5. Ease of Withdrawal**
 - ✓ FDI: Difficult to liquidate due to its long-term orientation and fixed commitments.
 - ✓ FPI: Highly liquid, allowing for swift exits and easier sell-offs.
- **6. Sources of Investment**
 - ✓ FDI: Primarily initiated by multinational companies.
 - ✓ FPI: Attracts diverse investors, including pension funds, mutual funds, and individual stakeholders.
- **7. Market Type**
 - ✓ FDI: Directed toward the primary market, promoting direct company investment.
 - ✓ FPI: Inflows typically go to the secondary market, such as public stock exchanges.
- **8. Duration of Investment**
 - ✓ FDI: Generally intended as a long-term commitment.
 - ✓ FPI: Often regarded as a short-term financial venture.
- **9. Types of Assets Involved**
 - ✓ FDI: Includes financial and non-financial assets, such as technology and intellectual property.
 - ✓ FPI: Limited to financial assets, like stocks and bonds.
- **10. Objective of Investment**
 - ✓ FDI: Targets specific enterprises for growth and strategic development.
 - ✓ FPI: Primarily serves to enhance overall capital availability in financial markets.
- **11. Stability and Market Sensitivity**
 - ✓ FDI: Considered more stable, with reduced sensitivity to market fluctuations.
 - ✓ FPI: More volatile and sensitive to short-term market dynamics.
- **12. Economic Impact**
 - ✓ FDI: Contributes significantly to economic progress, technology transfer, and employment opportunities.
 - ✓ FPI: Primarily enhances capital flows but has a limited effect on long-term economic advancement.

Chennai-Vladivostok Eastern Maritime Corridor

Relevance : GS II&III - Economy

- **In News:** The Union Minister of Ports, Shipping & Waterways recently announced the operational commencement of the Chennai-Vladivostok Eastern Maritime Corridor (EMC).
- This strategic corridor is designed to significantly enhance maritime relations between India and Russia.



About the Eastern Maritime Corridor (EMC):

Origin and Vision

- ✓ **Inception:** The EMC was conceptualized during the Eastern Economic Forum 2019 held in Vladivostok, Russia.
- ✓ **Objective:** To establish a maritime route connecting the Indian port of Chennai with Vladivostok via Northeast Asia.
- ✓ **Route Details:**
 - **Distance:** Approximately 10,300 kilometers.
 - **Pathway:** Traverses the Sea of Japan, the South China Sea, and the Malacca Strait, among other significant maritime zones.

Significance of the Eastern Maritime Corridor:

Cost Efficiency in Logistics

- ✓ **Reduction in Logistics Costs:** The EMC reduces transportation time by about 16 days and shortens the distance by roughly 40%.
- ✓ **Comparison with Existing Routes:** The current trade route from Mumbai to St. Petersburg via the Suez Canal takes approximately 40 days and covers around 16,066 kilometers.

Boost to India's Maritime Sector

- ✓ **Trade Volume and Value:** The maritime sector accounts for nearly 95% of India's trade by volume and 70% by value.
- ✓ **Alignment with Maritime Vision 2030:** The corridor supports India's Maritime Vision 2030, which encompasses over 150 initiatives across all areas of the maritime industry.

Countering China's Influence

- ✓ **Strategic Route:** The corridor passes through the South China Sea, a region

where China exerts significant maritime dominance.

- ✓ **Proximity to Russia-China Border:** Vladivostok is strategically situated near the Russia-China border, enhancing India's strategic presence in the region.
- **Enhancement of India's Act Far East Policy**
 - ✓ **Access to Resources:** Provides India with improved access to Russian resources.
 - ✓ **Strengthening Pacific Trade Network:** Facilitates a more robust presence in the Pacific trade network, reinforcing India's economic and strategic interests.

India-Uzbekistan Relations:

- The activation of the Chennai-Vladivostok Eastern Maritime Corridor marks a pivotal advancement in India's maritime strategy, strengthening bilateral ties with Russia, enhancing trade efficiency, and supporting broader strategic objectives in the Indo-Pacific region.
- This corridor, alongside other major maritime initiatives like the IMEEC and INSTC, underscores India's commitment to building robust and sustainable maritime networks, fostering economic growth, and ensuring strategic autonomy.

India-Maldives Pact on Cross-Border Transactions Using Local Currencies

Relevance : GS III - Economy

- **In News:** The Reserve Bank of India (RBI) and the Maldives Monetary Authority (MMA) signed a Memorandum of Understanding (MoU) to establish a framework for conducting cross-border transactions using local currencies.
- This is part of India's broader strategy to internationalize the rupee and minimize dependence on the US dollar in trade and financial exchanges.



About Internationalization of Currency (Rupee):

- **Definition:** Currency internationalization refers to the process by which a national currency extends its functions as a unit of account, medium of exchange, and store of value beyond domestic borders.
- **Key Example:** Promoting the rupee for current account transactions and foreign trade is a notable effort toward internationalizing the currency.

Significance of Rupee Internationalization:

- **Mitigating Trade Risks:** Enables Indian firms to invoice and settle international trade directly in rupees, reducing exchange rate volatility risks.
- **Enhancing Financial Access:** Facilitates domestic entities in accessing international markets, reducing the cost of capital and expanding financing options.
- **Efficient Reserve Management:** Reduces the reliance on maintaining large foreign exchange reserves, thereby lowering associated costs and external economic vulnerabilities.

Challenges in Internationalizing the Rupee:

- **Currency Fluctuations**
 - ✓ Initial adoption may cause exchange rate volatility, potentially impacting trade and investment.
- **Triffin Dilemma**
 - ✓ The obligation to supply rupees globally could conflict with domestic monetary policy objectives, creating a delicate balance between international and national priorities.
- **External Economic Shocks**
 - ✓ Greater exposure to global financial risks due to unrestricted cross-border capital flows.

Steps Taken to Promote Rupee Internationalization:

- **Invoicing and Payments in Rupee**
 - ✓ RBI has enabled Indian Rupee invoicing and payment for international trade transactions.
- **Special Rupee Vostro Account System**
 - ✓ Aimed at fostering the rupee as an international trading currency, allowing partner countries to maintain accounts in INR for trade settlements.
- **Currency Swap Agreements**
 - ✓ India has entered into currency swap agreements with nations such as Japan, Sri Lanka, and Bhutan to promote local currency trade.

Conclusion:

- The recent agreement between India and Maldives marks another step in India's efforts to reduce dependence on foreign currencies and strengthen the rupee's role in the global financial system.
- The internationalization of the rupee not only mitigates trade risks but also enhances India's economic resilience, though challenges like currency fluctuations and external shocks require careful management.

Indian MSMEs: Job Creation and Sectoral Importance

Relevance: GS III - Employment

- **In News:** Indian MSMEs have generated approximately 100 million jobs in the last 15 months, as reported by the Udyam Portal.

About Udyam Portal:

- **Introduced by:** Ministry of Micro, Small, and Medium Enterprises (MSME).
- **Objective:** Aims to streamline the registration and categorization of businesses as micro, small, or medium enterprises.



Current Scenario of the MSME Sector:

- **Expansion in Registered MSMEs:** The total registered MSMEs have increased from 2.33 crore (August 2023) to 5.49 crore.
- **Employment Growth:** Employment figures have risen from 13.15 crore to 23.14 crore, with 5.23 crore positions held by women

Relevance of MSMEs:

- **Economic Role**
 - ✓ Contribute approximately 30% to the nation's GDP.
 - ✓ Account for 46% of India's overall exports.
- **Regional Advancement:** Promotes decentralized economic development, encouraging balanced progress in rural and semi-urban regions.
- **Industry Diversification:** Reduces reliance on singular industries by fostering growth across various sectors.
- **Support to Larger Industries:** Supplies specialized goods and services, enhancing the value chain.

Government Measures for MSMEs:

- **Credit Support:** Enables MSMEs to access unsecured loans up to ₹5 crore, with 85% guarantee coverage under the Credit Guarantee Scheme.
- **Updated Classification Framework:** Implements a hybrid criterion integrating turnover to determine classification, eliminating distinctions between manufacturing and service sectors.
- **Public Procurement Policy:** Requires Central Ministries to procure at least 25% of their annual purchases from Micro and Small Enterprises.
- **PM Vishwakarma Scheme:** Focuses on empowering traditional artisans and

craftspeople, connecting them to domestic and international value chains.

Challenges Confronting MSMEs:

- **Lack of Formal Integration:** Many MSMEs remain unregistered, restricting access to government schemes and benefits.
- **Restricted Access to Credit:** Reliance on informal financing persists due to limited availability of affordable institutional credit.
- **Limited Technological Adoption:** Restricted access to modern tools and technology undermines competitiveness and efficiency.
- **Infrastructure Constraints:** Insufficient availability of logistical networks and connectivity impacts productivity.

Conclusion:

- MSMEs play a pivotal role in India's economic framework by driving job creation, exports, and inclusive development. While the sector has witnessed considerable progress due to government initiatives, addressing persistent issues like formalization, credit access, and digital empowerment is critical to unlocking its full potential.

Rise in Drone Seizures at Punjab Border Signals Growing Security Challenge

Relevance: GS III - Security Issue

- In News:** The Border Security Force (BSF) reports an unprecedented increase in drone seizures at the Punjab border, doubling to around 200 incidents.



Reasons for Increased Drone Activity:

- Enhanced Anti-Drone Measures:** The BSF credits the rise in detections to improved anti-drone tactics and advanced technical capabilities.
- Shift from Land Routes to Drones:** Pakistani syndicates previously relied on land routes but have shifted to using Chinese-manufactured drones for smuggling drugs, arms, and ammunition to disrupt security in India.
- Limitations of Traditional Security:** Conventional measures, like surveillance cameras, often lack the range or capability to detect drones effectively at a distance.

Security Threats Posed by Drones:

- Weaponized Drones:** Small commercial drones can be modified to transport explosives or weapons, making them a potent threat.
- Critical Infrastructure Disruption:** Drones are capable of executing cyber-attacks, electronic jamming, or even physical attacks on infrastructure networks.
- Privacy Concerns:** Drones equipped with high-definition cameras can invade the privacy of individuals and communities.
- Drone Swarms:** Swarm technology enables large numbers of drones to operate autonomously in coordinated formations, potentially overwhelming defense systems.

Anti-Drone Technologies Employed:

- Radio Frequency (RF) Sensors:** These sensors can detect known drone radio

signals over large areas, improving detection capabilities.

- **High-Power Microwave (HPM) Systems:** HPM systems release concentrated microwave energy, effective for area denial by disrupting small electronics, including drones.
- **Integrated Detection and Interdiction Systems (IDD&IS):** Deployed along the northern borders with China, these systems offer both “soft kills” through jamming and “hard kills” using lasers to neutralize drones..

Additional Measures to Counter Drone Security Threats:

- **Anti-Rogue Drone Technology Committee (ARDTC):** Formed by the Ministry of Home Affairs, ARDTC evaluates and certifies technologies to counter rogue drones effectively.
- **Drone Rules 2021:** Indian airspace is divided into Green, Yellow, and Red zones, with Red zones designated as restricted areas for drones.
- **Vulnerability Mapping:** Detailed mapping along the Indo-Pak border strengthens surveillance and aids in addressing vulnerabilities.

Conclusion:

- The surge in drone seizures at the Punjab border highlights the growing security threat posed by drones in smuggling and destabilization activities.
- While India has enhanced its defense measures with advanced technologies and legal frameworks, continued innovation, inter-agency collaboration, and robust border surveillance are essential to effectively counter evolving drone-based security challenges.

AFSPA in Violence-Hit Areas of Manipur, Including Jiribam

☛ Relevance: GS III - Internal Security

- **In News:** The Armed Forces (Special Powers) Act (AFSPA), 1958, has been reimposed in certain areas of Manipur to restore law and order in “disturbed areas.”



Key Highlights of AFSPA:

- **Definition of Disturbed Areas:** A region (partially or fully) within a State or Union Territory can be declared disturbed by:
 - ✓ The Governor of the State,

- ✓ The Administrator of the Union Territory, or
- ✓ The Central Government,
- If it is deemed necessary to deploy armed forces to restore order.
- **Special Powers Granted to Armed Forces:**
- Armed forces personnel are empowered to:
 - ✓ Open fire against individuals violating the law.
 - ✓ Conduct arrests and searches without a warrant.
- **Immunity for Armed Forces Personnel:** Legal proceedings against personnel are prohibited unless prior approval is obtained from the Central Government.
- **Treatment of Arrested Persons:** Individuals arrested under AFSPA must be handed over to the nearest police station officer without unnecessary delay.
- **Current Applicability:**
- AFSPA is in force in parts of:
 - ✓ Assam
 - ✓ Manipur
 - ✓ Nagaland
 - ✓ Arunachal Pradesh
- **Special Provision for Jammu & Kashmir:** The Armed Forces (Jammu & Kashmir) Special Powers Act, 1990 applies to disturbed areas within Jammu & Kashmir.
- **Concerns and Criticisms:**
- Allegations of:
 - ✓ Abuse of power.
 - ✓ Violations of human rights, including instances of rape and sexual assault.

Judicial and Committee Perspectives on AFSPA:

- **Supreme Court Judgments:**
 - ✓ Naga People's Movement for Human Rights Case (1997):
 - ✓ Armed forces' power to cause death must be exercised only under specific circumstances.
- **Extra Judicial Execution Victim Families Association Case (2016):**
 - ✓ Armed forces personnel cannot claim immunity from investigation for excesses committed, even in disturbed areas.
- **Committee Recommendations:**
 - ✓ **Justice B.P. Jeevan Reddy Committee (2004):** Advocated for the repeal of AFSPA.

- ✓ **Santosh Hegde Committee (2013):** Suggested a review of the Act every six months.
- ✓ **Justice Verma Committee (2013):** Recommended bringing sexual violence by armed forces under regular criminal law.

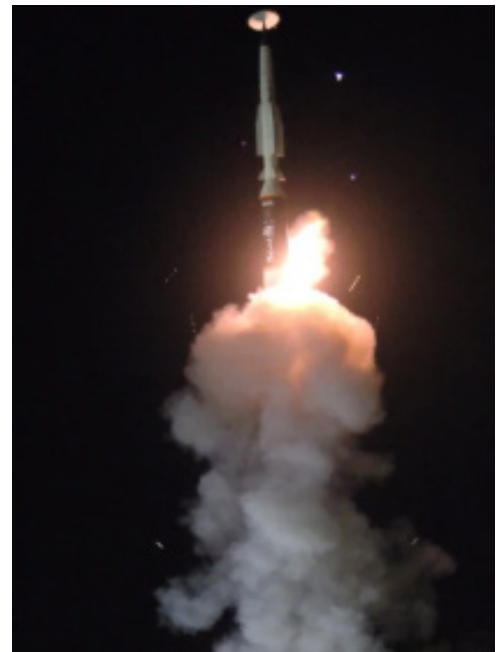
Conclusion:

- While AFSPA aims to restore peace in disturbed areas, it has faced criticism for alleged human rights violations and calls for reforms. Balancing national security with human rights remains a key challenge in its implementation.

India's First Long-Range Hypersonic Missile

Relevance : GS III - Defence Sector

- **In News:** The Defence Research and Development Organisation (DRDO) successfully conducted the test-firing of India's first long-range hypersonic missile off the coast of Odisha. This breakthrough places India among a select group of nations—the US, Russia, and China—with hypersonic missile technology.



Key Features of the Hypersonic Missile:

- **Range and Speed**
 - ✓ The hypersonic missile has a range exceeding 1,500 km.
 - ✓ Hypersonic speeds are defined as Mach 5 or more, which is at least five times the speed of sound.
- **Technological Milestones Demonstrated During the Test**
 - ✓ **Aerodynamic Configuration for Stability and Control:**
 - Enabled precise hypersonic manoeuvres to ensure stability during flight.
 - ✓ **Scramjet Propulsion Technology:**
 - Achieved ignition and sustained combustion in hypersonic airflow.
 - Scramjets are advanced air-breathing jet engines that use the vehicle's forward motion to compress incoming air for combustion.
 - ✓ **Thermo-Structural Characterisation:**
 - Designed to withstand extreme aerothermal environments encountered at hypersonic speeds.

✓ Separation Mechanism at Hypersonic Velocities:

- Successfully demonstrated stage separation during high-speed flight.

About Hypersonic Missiles:

• Definition and Speed

- ✓ Hypersonic missiles travel at speeds greater than Mach 5 (over five times the speed of sound).
- ✓ **For reference:**
 - **Mach 1:** Speed of sound.
 - **Mach 1-5:** Supersonic speeds.
 - **Mach 5 and above:** Hypersonic speeds.

• Advantages of Hypersonic Missiles

- ✓ **Manoeuvrability:** Can change trajectory mid-flight, making them highly unpredictable.
- ✓ **Stealth:** Their combination of high speed and manoeuvrability makes detection and interception extremely challenging.

India's Other Missile Systems:

• Inducted Missile Systems

- ✓ **AKASH:** Surface-to-Air Missile System.
- ✓ **BRAHMOS:** Long-Range Supersonic Cruise Missile.

• Missiles in Advanced Stages of Induction

- ✓ **NAG:** Anti-Tank Guided Missile.
- ✓ **ASTRA:** Air-to-Air Missile.
- ✓ **AGNI:** Long-Range Ballistic Missile Series.

Conclusion:

- India's successful test of a long-range hypersonic missile marks a significant leap in its defence capabilities, enhancing strategic deterrence and positioning the nation as a global leader in advanced missile technology.

