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A Strategic Forum: The Role of the 21st East Asian Summit in Regional Dynamics

WHY IN THE NEWS?

The 19th East Asia Summit on 11 October 2024 in Vientiane, Lao PDR, the Prime Minister highlighted ASEAN's crucial role in the Indo-Pacific regional framework. The Prime Minister highlighted ASEAN's crucial role in the Indo-Pacific regional framework and its alignment with India's Indo-Pacific Vision and Quad cooperation. He emphasized that India's engagement in the summit is vital to its Act East Policy, advocating for a free, open, and inclusive Indo-Pacific as essential for regional peace and development. The Prime Minister pointed out the shared perspectives between India's Indo-Pacific Ocean Initiative and the ASEAN Outlook on Indo-Pacific, urging a development-focused approach over one based on expansionism.

KEY FACTS:

1. **Established:** 2005
2. **Members:** 18 countries (10 ASEAN + Australia, China, India, Japan, New Zealand, Russia, South Korea, USA)
3. **Objectives:** Promote dialogue on political, security, and economic issues; enhance regional stability; address global challenges.
4. **Chairmanship:** Rotates annually among member countries.
5. **Working Groups:** Focus on specific areas like fi-

nance, security, and disaster management.

6. **Economic Impact:** Members account for ~60% of global GDP and ~50% of global trade.
7. **Security Issues:** Addresses maritime security, counter-terrorism, and nuclear non-proliferation.
8. **Climate Change Focus:** Emphasizes sustainable development and environmental cooperation.
9. **Indo-Pacific Focus:** Highlights strategic dynamics in the Indo-Pacific region.

BACKGROUND ON THE EAST ASIAN SUMMIT (EAS):

1. **Regional Security:** Tensions in the South China Sea and the Korean Peninsula were prominent topics, with calls for peaceful resolutions and adherence to international laws.
2. **Economic Recovery:** Discussions highlighted the need for coordinated efforts to recover from the COVID-19 pandemic, including vaccine distribution and economic support for the most affected countries.
3. **Climate Change:** Environmental issues were also addressed, with participants emphasizing commitments to combat climate change and promote sustainable development.
4. **Geopolitical Dynamics:** The summit reflected ongoing geopolitical rivalries, particularly between the U.S. and China, influencing discussions around trade and security alliances.
5. **Health Security**: Beyond COVID-19, the summit emphasized strengthening health systems and improving pandemic preparedness to mitigate future health crises.
6. **Trade Agreements:** Discussions often include the Regional Comprehensive Economic Partnership (RCEP) and other trade initiatives aimed at enhancing economic integration and reducing trade barriers among member states.
7. **Technology and Cybersecurity:** The increasing importance of technology in international relations led to dialogues about cybersecurity threats, digital economy collaboration, and the need for regulations to protect data privacy.

8. **Maritime Cooperation:** Issues related to maritime security were underscored, with discussions around ensuring freedom of navigation and the lawful use of sea resources, particularly in contested waters.

9. **Counter-Terrorism:** Member states frequently reaffirm their commitment to combating terrorism and violent extremism through enhanced cooperation and intelligence sharing.

10. **Humanitarian Issues:** The summit has also addressed regional humanitarian challenges, including responses to natural disasters and support for refugee crises in various parts of East Asia.

EAST ASIAN SUMMIT MEMBERS:

ASEAN Members (10):
Brunei
Cambodia
Indonesia
Laos
Malaysia
Myanmar
Philippines
Singapore
Thailand
Vietnam

Additional Members (8):
Australia
China
India
Japan
New Zealand
Russia
South Korea
United States

SIGNIFICANCE OF THE EAST ASIAN SUMMIT :

1. **Regional Cooperation:** Facilitates dialogue and collaboration among diverse countries in East Asia and the Indo-Pacific.

2. **ASEAN Centrality:** Reinforces ASEAN's pivotal role in shaping regional security and economic frameworks.

3. **Addressing Security Challenges:** Provides a platform for discussing pressing security issues, including maritime security, terrorism, and nuclear non-proliferation.

4. **Economic Integration:** Promotes economic cooperation and trade among member states, enhancing regional prosperity.

5. **Inclusive Dialogue:** Encourages participation from major powers and smaller nations, fostering a balanced approach to regional governance.

6. **Rules-Based Order:** Advocates for a free, open, and inclusive Indo-Pacific region based on international law and norms.

7. **Sustainable Development**: Addresses global challenges such as climate change and disaster management, promoting sustainable practices.

8. **Geopolitical Stability:** Contributes to regional stability amid evolving geopolitical dynamics, particularly in the context of U.S.-China relations.

9. **Cultural Exchange:** Fosters cultural understanding and people-to-people connections among member states.

SIGNIFICANCE OF INDIA IN THE EAST ASIAN SUMMIT:

1. **Counter China's Influence:** ASEAN's strategic location makes it a critical partner for balancing China's growing influence in the region.

2. **Trade and Investment:** In 2021-2022, trade between India and ASEAN stood at around $110 billion. ASEAN countries are also a significant destination for Indian investments.

3. **Indo-Pacific Region:** ASEAN is central to India's Indo-Pacific strategy, which seeks to promote a free, open, and rules-based order in the region. India's Act East Policy places ASEAN at its core to enhance connectivity, maritime cooperation, and economic engagement.

4. **Counter-Terrorism:** India collaborates with ASEAN on counter-terrorism, transnational crime, and cybersecurity initiatives. These efforts are crucial in maintaining regional security.

5. **Connectivity and Infrastructure:** Initiatives such as the India -Myanmar-Thailand Trilateral Highway and the Kaladan Multimodal Transit Transport Project aim to improve physical connectivity between India and ASEAN, promoting trade and economic integration.

6. **ASEAN-led Mechanisms:** India is part of key ASEAN-led platforms like the;

7. **Cultural Diplomacy:** Fosters cultural exchange and people-to-people connections, enhancing mutual understanding and cooperation.

8. **Sustainable Development:** Advocates for sustainable practices and climate change initiatives, aligning with global environmental goals.

SIGNIFICANCE OF BOP, UNCLOS, CHINA THREAT, MARITIME PEACE, REGIONAL POWER, AND INDO-PACIFIC ECONOMIC DYNAMICS:

1. **Balance of Power (BOP):** A stable balance of power stops any one country from dominating the region, helping maintain peace and encouraging countries to form alliances, especially to counter China's influence.

2. **United Nations Convention on the Law of the Sea (UNCLOS):** This provides rules for maritime rights, ensuring fair access to ocean resources and helping to peacefully resolve disputes over sea boundaries, which supports regional stability.

3. **China Threat:** China's strong actions in the South China Sea raise concerns for neighbouring countries about their territorial integrity. This can lead to collaboration among nations to enhance security against perceived threats.

4. **Maritime Peace:** Emphasizes the need for security initiatives to ensure safe navigation in international waters and encourages dialogue to prevent conflicts over maritime disputes.

5. **Regional Power:** Countries like India, Japan, and Australia are important for maintaining stability and countering threats, especially from China. Strong regional powers can lead efforts in economic cooperation and security.

6. **Indo-Pacific Economic Dynamics:** The Indo-Pacific region is crucial for global economic growth, offering opportunities for trade and investment. It promotes economic integration

and strengthens regional supply chains, making countries less dependent on external powers.

IRRITANTS OF THE 21ST EAST ASIA SUMMIT:

1. **South China Sea Tensions:** Disputes over territorial claims continued to be a major point of contention, particularly regarding China's assertive actions in the region.

2. **North Korea's Nuclear Activities:** Ongoing missile tests and nuclear development by North Korea raised concerns, leading to calls for stronger diplomatic efforts for denuclearization.

3. **U.S.-China Rivalry:** The growing strategic competition between the U.S. and China created friction, with member states balancing their relations amid pressures from both sides.

4. **Economic Recovery Disparities:** Uneven recovery from the COVID-19 pandemic caused tensions, especially regarding vaccine access and economic support for less developed nations.

5. **Cybersecurity Issues:** Increasing cybersecurity threats and state-sponsored cyberattacks prompted discussions about the need for improved international cooperation.

6. **Climate Change Commitments:** Disagreements arose over responsibilities for addressing climate change, particularly between developed and developing nations.

7. **Trade Barriers:** Protectionist measures and trade tensions created friction, with calls for open markets and fair trade practices.

8. **Human Rights Concerns:** Discussions on human rights violations in certain countries led to diplomatic disagreements on how to address these issues effectively.

WAY FORWARD:

1. Strengthen trade relations through RCEP and bilateral agreements to enhance economic growth.

2. Enhance cooperation on security issues, including counter-terrorism and maritime security, to maintain stability in the Indo-Pacific.

3. Promote cultural exchanges and people-to-people connections through educational initiatives and tourism.

4. Jointly work towards achieving the UN Sustainable Development Goals (SDGs), focusing on climate action and poverty alleviation.

5. Invest in regional infrastructure projects to facilitate trade and economic integration.

6. Collaborate in technology and digital transformation to drive economic growth and resilience.

7. Strengthen disaster management cooperation to improve regional preparedness for natural disasters.

8. Maintain regular high-level dialogues and participate in regional multilateral forums to address emerging challenges.

CONCLUSION:

The East Asia Summit highlighted the vital role of ASEAN in the Indo-Pacific framework and reinforced India's commitment to regional stability and cooperation. As member states confront challenges such as security tensions, economic disparities, and climate change, the summit provides a crucial platform for dialogue and collaboration. By focusing on trade relations, security cooperation, and sustainable development, the summit paves the way for a more integrated and resilient Indo-Pacific region, promoting peace and prosperity for all nations involved.

Prelims Question:

Q.Which of the following statements accurately reflects the significance of ASEAN in the context of the Indo-Pacific framework as highlighted in the 19th East Asia Summit?

A. ASEAN's role is primarily economic, focusing only on trade relations among its member states.

B. ASEAN is central to India's Act East Policy and aligns with India's Indo-Pacific Vision, emphasizing

regional stability and cooperation.

C. ASEAN has limited influence in the Indo-Pacific, mainly serving as a platform for cultural exchanges.

D. ASEAN operates independently of major powers like the U.S. and China in the Indo-Pacific context.

Answer: B

Mains Question:

Q. Analyze the implications of India's Act East Policy as discussed during the 21st East Asian Summit. In what ways does India's engagement with ASEAN countries contribute to regional stability and economic integration?

(250 words, 15 marks)

The Backbone of Indian Democracy: The Election Commission's Functionality

WHY IN THE NEWS?

The Election Commission of India is expected to announce the polling schedule for certain state assembly elections.

KEY FACTS ABOUT THE ELECTION COMMISSION OF INDIA (ECI)

1. **Establishment:** Founded on 25th January 1950.

Celebrated as National Voters' Day.

2. **Authority:** Autonomous constitutional body responsible for administering elections in India. Based in New Delhi.

3. **Elections Managed:**

    Lok Sabha, Rajya Sabha, State Legislative Assemblies.

    Offices of the President and Vice President.

4. **Not Responsible For:**

    Elections to panchayats and municipalities (handled by State Election Commissions).

5. **Constitutional Provisions:**

    Governed by Part XV (Articles 324-329) of the Constitution.

*   **Key Articles:**

    ○ **Article 324:** Superintendence and control of elections.

    ○ **Article 325:** Non-discrimination in electoral rolls.

    ○ **Article 326:** Adult suffrage for elections.

    ○ **Article 329:** Courts cannot interfere in electoral matters.

6. **Structure:** Originally a single-member body; now a multi-member body post-1989 amendment.

*   **Currently consists of:** Chief Election Commissioner (CEC)

*   Two Election Commissioners (ECs)

7. **Appointment & Tenure:**

*   Appointed by the President of India under the CEC and Other ECs (Appointment, Conditions of Service and Term of Office) Act, 2023.

*   Fixed tenure of six years or until age 65, whichever comes first.

*   Salary equivalent to that of a Supreme Court Judge.

8. **Removal Process:**

*   CEC can be removed via a process similar to that of a Supreme Court judge.

- ECs can be removed on the recommendation of the CEC.

9. Legal Framework:

- **Representation of the People Act, 1950 & 1951:** These Acts lay down the framework for the conduct of elections and the rights of voters.

- **Election Symbols (Reservation and Allotment) Order, 1968:** Governs the allotment of symbols to political parties and candidates.

ROLE OF ECI IN STRENGTHENING DEMOCRACY IN INDIA:

1. Conducting Free and Fair Elections

- **Elections Held:** Over 1,200 elections conducted since its establishment in 1950, including Lok Sabha (House of the People) and State Assembly elections.

- **Turnout Rates:** Voter turnout has averaged around 66% in recent Lok Sabha elections, reflecting robust engagement.

2. Voter Empowerment

- **Electoral Awareness:** Conducted campaigns like "Systematic Voters' Education and Electoral Participation" (SVEEP) to enhance voter awareness.

- **Registered Voters**: As of 2024, India has over 1.3 billion registered voters, indicating increased electoral participation.

3. Inclusivity Initiatives

- **Special Programs:** Initiatives like "Beti Padhao, Beti Bachao" encourage women's participation, contributing to a more than 50% increase in female voter registration since 2014.

- **Accessible Voting:** Introduced facilities for persons with disabilities, resulting in a 20% increase in their voter turnout.

4. Technological Integration

- **EVM Usage:** Over 1.5 million EVMs used in elections, enhancing transparency and efficiency.

- **Online Services:** 2024 saw the introduction of online voter registration, making the process quicker for millions.

5. Campaign Expenditure Monitoring

- **Expenditure Limits:** Imposed limits on campaign spending (e.g., ₹70 lakhs for Lok Sabha candidates), reducing the influence of money in politics.

- **Transparency Measures:** Candidates are required to declare expenses, with around 90% compliance observed in recent elections.

5. Civic Engagement

- **Awareness Programs:** Engaged over 100 million citizens through outreach initiatives in the last election cycle.

- **Feedback Mechanisms:** Implemented online platforms for voter grievances, ensuring accountability.

6. Adhering to International Standards

- **Global Best Practices:** ECI has been recognized by international bodies for adherence to democratic norms, improving India's standing in global democracy indices.

- **Collaborative Learning:** Engages with electoral bodies from over 30 countries, sharing insights and practices.

ISSUES CAUSING HINDRANCES IN THE WORKING OF ECI:

1. **Political Pressure:** The ECI often encounters pressure from political parties, which can compromise its autonomy and decision-making processes.

2. **Administrative Challenges:** Coordination with various state and central agencies can be cumbersome, leading to delays and inefficiencies in election management.

3. **Lack of Resources:** Inadequate funding and staffing can impede the ECI's ability to conduct comprehensive voter education and outreach programs.

4. **Technological Issues:** While technology has improved electoral processes, challenges such as cybersecurity threats to EVMs and data privacy concerns can undermine public confidence.

5. **Electoral Malpractices:** Issues like vote-buying, intimidation, and misinformation campaigns continue to plague elections, complicating the ECI's efforts to ensure integrity.

6. **Judicial Interference:** Frequent legal challenges and court interventions can disrupt the election

process and create uncertainties.

7. **Voter Apathy:** Despite efforts to engage voters, disinterest and apathy among certain demographics can limit participation, affecting the overall electoral landscape.

8. **Regional Disparities:** Varying levels of political awareness and infrastructure across states can lead to uneven electoral practices and challenges in implementing uniform policies.

9. **Social Media Influence:** The rise of social media has facilitated the spread of misinformation, making it difficult for the ECI to manage and counter false narratives effectively.

10. **Legal Framework:** Ambiguities in electoral laws and the absence of stringent regulations for political financing can limit the ECI's ability to enforce compliance.

WAY FORWARD:

1. **Strengthening Autonomy:** Ensure the ECI operates independently, free from political interference, by enshrining its autonomy in law.

2. **Enhancing Resources:** Allocate adequate funding and human resources to the ECI for effective election management, voter education, and outreach initiatives.

3. **Investing in Technology:** Upgrade technological infrastructure, including secure voting systems and robust cybersecurity measures, to safeguard electoral processes.

4. **Voter Awareness Campaigns:** Implement comprehensive and targeted voter education campaigns to engage underrepresented demographics and combat apathy.

5. **Tackling Misinformation:** Develop a proactive strategy to monitor and counter misinformation on social media platforms, possibly in collaboration with tech companies.

6. **Legal Reforms:** Introduce clearer electoral laws, including stricter regulations on political financing, to enhance transparency and accountability.

7. **Capacity Building:** Conduct training programs for ECI officials and staff to improve their skills in managing elections effectively and responding to challenges.

8. **Regional Focus:** Tailor strategies to address regional disparities, ensuring that electoral processes are consistent and fair across all states.

9. **Strengthening Monitoring Mechanisms:** Enhance monitoring of election campaigns and expenditures to prevent malpractices and ensure compliance with regulations.

10. **Engaging Civil Society**: Collaborate with NGOs and civil society organizations to promote civic engagement and encourage active participation in the electoral process.

CONCLUSION:

The Election Commission of India (ECI) is vital for maintaining the integrity of the country's democratic process, having successfully conducted over 1,200 elections since its inception in 1950. While it plays a crucial role in ensuring free and fair elections, the ECI faces significant challenges, including political pressure, misinformation, and resource limitations. To enhance its effectiveness, the ECI must strengthen its autonomy, invest in technology, and implement comprehensive voter awareness campaigns.

Prelims Question:

Q. Consider the following statements:

1. The Election Commission of India is a five-member body.

2. The Union Ministry of Home Affairs decides the election schedule for the conduct of both general elections and bye-elections.

3. The Election Commission resolves the disputes relating to splits/mergers of recognised political parties.

Which of the statements given above is/are correct?
A. 1 and 2 only
B. 2 only

C. 2 and 3 only

D. 3 only

Answer: D

Mains Question:

Q.Examine the challenges faced by the Election Commission of India in promoting voter participation, particularly among marginalized communities. What measures can be implemented to enhance voter engagement?

(250 words, 15 marks)

PRELIMS BITs: Biopolymer, Fortified rice, African Elephant.

AFRICAN ELEPHANT

WHY IN THE NEWS:

Union Minister of State for Environment, Forest, and Climate Change, Shri Kirti Vardhan Singh's efforts to improve the health and habitat of the African elephant 'Shankar' are showing results. Recently, 'Shankar' was freed from his chains and seen walking actively in his enclosure.

KEY FACTS ABOUT AFRICAN ELEPHANTS:

Genus and Species: Belong to the genus Loxodonta.

Two species: African bush elephant (L. africana) and African forest elephant (L. cyclotis).

Physical Characteristics:

Both species are social herbivores with grey skin. Differences include tusk size and color, ear shape and size, and skull structure.

Conservation Status: Both species are at risk of extinction according to the IUCN Red List:

African bush elephant: Endangered.

African forest elephant: Critically endangered. Threats include habitat loss, fragmentation, and poaching for ivory.

Size: The African bush elephant is the largest terrestrial animal, with females measuring 2.2–2.6 m (7.2–8.5 ft) at the shoulder.

Distribution and Habitat:

Found in Sub-Saharan Africa, inhabiting:

1. Sahelian scrubland

2. Arid regions

3. Tropical rainforests

4. Mopane and miombo woodlands

African forest elephants are primarily located in Central and West Africa.

Social Structure:

Both species live in family units led by a matriarch (an older female).

Family units consist of adult females, their daughters, and subadult sons.

African forest elephant groups are less cohesive compared to bush elephant groups, likely due to fewer predators.

Reproduction:

Female elephants have a long gestation period of about 22 months.

Typically, a single calf is born, although twins can occur rarely.

Calves are cared for by the mother and other females in the family unit, receiving support and protection.

COMPARISON TABLE BETWEEN THE INDIAN ELEPHANT AND THE AFRICAN ELEPHANT:

BIOPOLYMERS

WHY IN THE NEWS?

In a significant move to position India as a global economic leader and a key player in environmental sustainability, Minister Dr. Jitendra Singh inaugurated the country's first Demonstration Facility for Biopolymers in Pune.

Feature	Indian Elephant (*Elephas maximus indicus*)	African Elephant (*Loxodonta africana* and *Loxodonta cyclotis*)
Size	Smaller; males: ~3.2 m (10 ft), females: ~2.54 m (8.3 ft)	Larger; males: ~3.3 m (10.8 ft), females: ~2.7 m (8.9 ft)
Weight	Males: up to 5,400 kg (11,900 lb), females: up to 4,160 kg (9,170 lb)	Males: up to 6,000 kg (13,200 lb), females: up to 3,500 kg (7,700 lb)
Body Shape	Convex back with highest point on the head	Concave back with highest point on the head
Skull Shape	Broader skull with a concave forehead	More elongated skull
Ears	Large, laterally folded ears	Larger ears (especially in bush elephants)
Skin Color	Grey, smooth skin	Grey, rough skin
Trunk	Large trunk	Large trunk
Diet	Consumes up to 150 kg (330 lb) of plant matter per day; varied diet	Consumes a variety of vegetation, including leaves, fruits, and bark
Population	Estimated 23,000 to 41,000 individuals; ~27,312 in India (2017 census)	Approximately 415,000 individuals (as of recent estimates)
Conservation Status	Endangered (IUCN Red List since 1986)	African bush elephant: Endangered; African forest elephant: Critically endangered
Distribution	Primarily found in India; also in Nepal, Bangladesh, Bhutan, Myanmar, Thailand, Malaysia, Laos, Cambodia, Vietnam, and small populations in China	Found in Sub-Saharan Africa, inhabiting various ecosystems
Cultural Significance	Revered in Hinduism as a form of Lord Ganesha; a national heritage animal in India	Cultural significance varies across regions; often seen as a symbol of strength and wisdom
Social Structure	Lives in family units led by a matriarch	Lives in matriarchal family units; bush elephants have tighter social bonds than forest elephants

KEY FACTS:

Biopolymers are natural polymers produced by living organisms, consisting of monomeric units bonded together. They play crucial roles in various biological functions and processes and are found in all living organisms, including plants, animals, and microorganisms.

Examples of Biopolymers:

Polynucleotides: RNA and DNA, long chains of nucleotides.

Polypeptides: Proteins and shorter amino acid chains.

Polysaccharides: Starch, cellulose, and alginate, which are chains of sugar carbohydrates.

APPLICATIONS OF BIOPOLYMERS:

Food Industry: Used as hydrocolloids to enhance food shelf life and improve the stability and texture of emulsion-based products.

Manufacturing: Serve as matrices or substrates in bio-based plastics.

Packaging: Employed in environmentally friendly packaging solutions.

Biomedical Engineering: Applied in tissue engineering, drug delivery systems, and implantable devices.

Soil Stabilization: Help strengthen soil and combat desertification in drylands.

Gas and Vapor Sensors: Promising materials for sensors due to their biocompatibility and unique properties.

POLYLACTIC ACID (PLA): A BIOPOLYMER

Definition: Polylactic Acid (PLA) is a widely used bio-plastic derived from renewable resources, primarily corn starch or sugarcane. It is a biodegradable and compostable material that has gained popularity in various applications due to its eco-friendly properties.

Key Features of PLA:

Biodegradability: PLA breaks down into natural elements in industrial composting conditions, reducing plastic waste.

Renewable Resource: Made from plant-based materials, PLA is a sustainable alternative to petroleum-based plastics.

Properties:

Thermal Resistance: PLA has a lower melting temperature compared to traditional plastics, which can limit its use in high-heat applications.

Strength: It offers good tensile strength but can be brittle under certain conditions.

Environmental Impact: While PLA is compostable, it requires specific conditions to break down effectively, and its production still involves energy use and land resources.

APPLICATIONS:

Packaging: Commonly used for food packaging, disposable cutlery, and bags.

3D Printing: Popular among hobbyists and professionals due to its ease of use and variety of colors.

Biomedical Devices: Utilized in drug delivery systems and sutures because of their biocompatibility.

> **Prelims questions**

Q. With reference to the Indian and African ele-

phants, Consider the following statement:

1. The Indian elephant is heavier than the African elephant.

2. The Indian elephants show sexual dimorphism, unlike African elephants.

3. The Indian elephant is widely lives in the family like the African Elephant

4. Indian elephants are herbivores, unlike the African elephants.

How many of the above-given statements are correct?
A. Only one
B. Only two
C. Only three
D. All four

ANSWER: A

Q.2. Which of the following statements are correct about Polylactic Acid (PLA)?

1. The PLA is a non-degradable bioplastic obtained from Starch.

2. PLA is a sustainable alternative to petroleum-based plastics.

3. The PLA is widely used in food packaging, disposable cutlery, and bags.

Select the correct answer using the code given below:
A. Only one
B. Only two
C. All three
D. None

ANSWER: B

PM Gati Shakti: Transforming India's Infrastructure and Connectivity
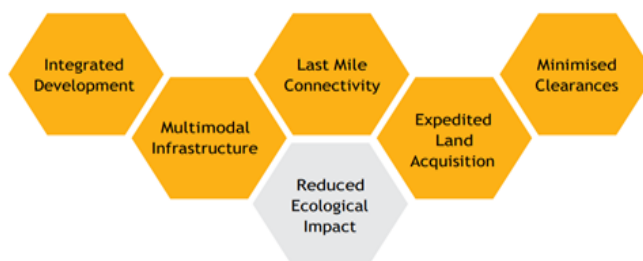
WHY IN THE NEWS?

The Prime Minister of India has emphasized the significance of the PM Gati Shakti Master Plan as it marks the completion of three transformative years. This ambitious initiative aims to enhance infrastructure and streamline connectivity across the nation, fostering economic growth and development.

WHAT IS PM GATI SHAKTI

PM Gati Shakti is a key initiative by the Government of India aimed at enhancing infrastructure and connectivity. It features the PM Gati Shakti National Master Plan, which integrates data from 44 Central Ministries and 36 States/UTs, streamlining planning and execution. Standard Operating Procedures (SOPs) ensure data accuracy across key sectors. The initiative has evaluated 208 major projects worth Rs. 15.39 lakh crores and assessed projects under three economic corridors.

SIX PRINCIPLES OF PM GATISHAKTI

Integrated Development

Multimodal Infrastructure

Last Mile Connectivity

Reduced Ecological Impact

Expedited Land Acquisition

Minimised Clearances

KEY FACTS:

1. **Launch Date:** The initiative was launched on October 13, 2021.

2. **National Master Plan (NMP):** Aims to create a comprehensive framework for integrated infrastructure planning and execution.

3. **Data Integration**: Involves 1,614 data layers from 44 Central Ministries and 36 States/UTs.

4. **Project Evaluation:** Assessment of 208 major infrastructure projects worth Rs. 15.39 lakh crores has been conducted.

5. **Economic Corridors:** Focuses on projects in Energy, Mineral, Cement, High Traffic Density, and Rail Sagar corridors.

6. **Achievements:** The Ministry of Road Transport and Highways (MoRTH) planned over 8,891 km of roads using NMP.

   The Ministry of Railways (MoR) planned more than 27,000 km of railway lines and accelerated the completion of Final Location Surveys (FLS), completing 449 FLS in FY '22 compared to 57 in FY '21.

   The Ministry of Petroleum and Natural Gas (MoPNG) streamlined the Detail Route Survey (DRS), reducing report creation time from 6-9 months to just one day using electronic DRS (eDRS).

7. **Sectors Involved:**

   Transport: Railways, roads, and ports.

   Energy: Renewable and conventional energy projects.

   Urban Development: Smart cities and urban infrastructure.

   Telecommunications: Improving digital connectivity.

   Social Infrastructure: Health, education, and housing sectors.

PM GATISHAKTI Driven by 7 engines:
- Roads
- Airports
- Mass Transport
- Logistics Infrastructure
- Railways
- Ports
- Waterways

To Pull Forward the economy & provide more jobs and opportunities for youth

8. **Committees:**

   Inter-Ministerial Coordination Committee: Facilitates collaboration among various ministries.

   Technical Advisory Committee: Provides expertise on project planning and execution.

   Monitoring Committees: Oversee project implementation and adherence to SOPs.

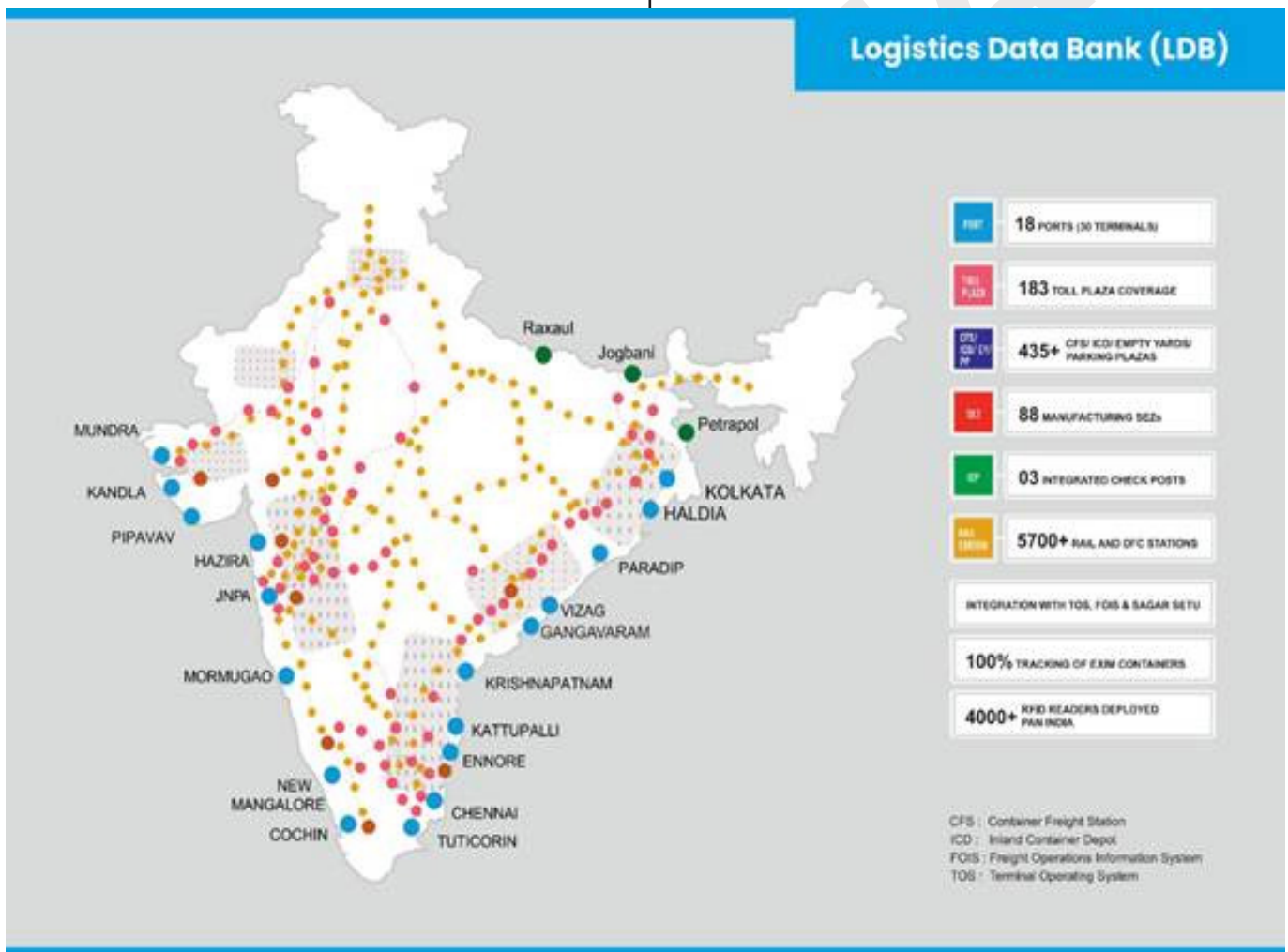**LAST THREE YEAR ACHIEVEMENTS:**

1. **Government Integration:** Onboarded 44 Central Ministries and 36 States/UTs onto a unified platform with 1,600+ data layers.

   Evaluated 200+ major infrastructure projects based on integrated planning principles.

2. **Social Sector Development:** Extended PM GatiShakti to Social Sector Ministries to identify gaps in infrastructure like schools and hospitals.

   Developed applications for improved planning in healthcare, education, and tribal development.

3. **State Master Plans:** All 36 States/UTs developed PM GatiShakti State Master Plan (SMP) portals, mapping 533 projects.

   Enhanced regional development and capital investment streamlining.

4. **Logistics and Trade Facilitation:** Aligned with the National Logistics Policy to reduce logistics costs and improve India's Logistics Performance Index (LPI), which rose from 44 to 38 in 2023.

5. **Stakeholder Engagement:** Conducted five regional workshops for knowledge sharing across all States/UTs, fostering cooperative federalism.

6. **Data-Driven Development:** Implemented GIS-

based tools for real-time monitoring, ensuring timely project completion and reducing delays.

7. **Training and Capacity Building:** Over 20,000 officials trained on PM GatiShakti, with courses integrated into Central Training Institutes' curricula. Conducted 150+ interactive training sessions with various ministries and states.

8. **District-Level Planning:** Developing PM GatiShakti District Master Plan (DMP) portal for collaborative planning at the district level, incorporating AI and IoT.

9. **International Collaboration:** Engaged with countries like Nepal, Bangladesh, and Sri Lanka to promote PM GatiShakti and geospatial technologies for infrastructure planning.

logistics network.

- **State Logistics Plans:** 26 States/UTs have aligned with the NLP by notifying their own State Logistics Policies.

- **LEADS Survey:** Fifth and sixth editions of the Logistics Ease Across Different States (LEADS) report released, assessing logistics ease in various states.

- **Unified Logistics Integrated Platform (ULIP):** Integrated 33 logistics-related systems across 10 ministries, facilitating real-time cargo tracking and innovation.

- **Logistics Data Bank (LDB):** Developed to track 100% of containerized EXIM cargo using RFID

Logistics Data Bank (LDB)

- 18 PORTS (30 TERMINALS)
- 183 TOLL PLAZA COVERAGE
- 435+ CFS/ ICD/ EMPTY YARDS/ PARKING PLAZAS
- 88 MANUFACTURING SEZs
- 03 INTEGRATED CHECK POSTS
- 5700+ RAIL AND DFC STATIONS
- INTEGRATION WITH TOS, FOIS & SAGAR SETU
- 100% TRACKING OF EXIM CONTAINERS
- 4000+ RFID READERS DEPLOYED PAN INDIA

CFS : Container Freight Station
ICD : Inland Container Depot
FOIS : Freight Operations Information System
TOS : Terminal Operating System

10. National Logistics Policy Highlights

- **Policy Launch:** Launched on September 17, 2022, to create an efficient, cost-effective

and IoT technologies, offering cloud-based visualization.

- **LPI Improvement Strategy:** Dedicated action

plan involving multiple ministries to enhance logistics efficiency and address challenges.

- **Global Collaboration:** Partnered with the Asian Development Bank and engaged with the World Bank to adopt best practices for logistics improvement.

PERSISTENT ISSUES IN INFRASTRUCTURE UNDER PM GATI SHAKTI:

1. **Data Sharing Problems:** Different ministries and states still struggle to share data effectively, leading to inefficiencies.

2. **Training Shortcomings:** Although training programs exist, many local officials lack the necessary skills to implement projects effectively.

3. **Project Delays:** Bureaucratic challenges and land acquisition issues often slow down project timelines.

4. **Funding Limitations:** Many states face difficulties in securing the necessary funds for large infrastructure projects.

5. **Uneven Development:** Infrastructure improvements vary widely between regions, leaving some areas behind.

6. **Sustainability Issues:** While there's a focus on green infrastructure, actual implementation of sustainable practices is inconsistent.

7. **Coordination Challenges:** Better collaboration is needed among central and state governments, private sectors, and local communities.

8. **Monitoring Gaps:** A stronger framework is required to track project progress and evaluate outcomes effectively.

9. **Technology Use:** While advanced tools like GIS are part of the plan, many officials still struggle to use them effectively.

POTENTIAL SOLUTIONS FOR SUSTAINABLE DEVELOPMENT UNDER PM GATI SHAKTI:

1. **Enhanced Data Integration:** Develop a centralized data-sharing platform that facilitates seamless integration and access to data across all ministries and states.

2. **Targeted Training Programs:** Implement ongoing, tailored training initiatives for local officials and stakeholders to build capacity in project management and technology use.

3. **Streamlined Approval Processes:** Simplify bureaucratic procedures and enhance coordination between departments to expedite land acquisition and project approvals.

4. **Innovative Funding Mechanisms**: Explore public-private partnerships (PPPs) and other financial models to attract investment and diversify funding sources for infrastructure projects.

5. **Balanced Regional Development:** Prioritize infrastructure projects in underdeveloped areas to ensure equitable growth and connectivity across all regions.

6. **Sustainability Guidelines:** Establish clear sustainability guidelines and standards for all infrastructure projects to promote the use of eco-friendly materials and practices.

7. **Strengthened Stakeholder Collaboration:** Foster regular dialogue and partnerships between government entities, the private sector, and local communities to ensure collective ownership of projects.

8. **Robust Monitoring Framework:** Create a comprehensive monitoring and evaluation system to track project progress, identify challenges early, and measure sustainability outcomes.

9. **Public Awareness Campaigns:** Launch campaigns to educate the public about the benefits of infrastructure projects, encouraging community involvement and support.

10. **Promotion of Smart Technologies:** Encourage the adoption of smart technologies, such as IoT and AI, for real-time monitoring and management of infrastructure projects.

CONCLUSION:

The PM Gati Shakti initiative represents a transformative approach to infrastructure development in India, aiming to create a seamless and efficient multimodal transportation network. By integrating the efforts of various ministries and leveraging

advanced technologies, this initiative seeks to en-hance connectivity and reduce logistics costs across the nation. The Gati Shakti Sanchar portal further supports this vision by streamlining the Right of Way approvals process, accelerating telecom in-frastructure rollout, and facilitating the rapid de-ployment of 5G services across the country. With these combined efforts, India is well-positioned to achieve its ambitious goals of Aatmanirbharta.

Prelims Question

Q.   Consider the following statements about PM Gati Shakti:

1.   PM Gati Shakti integrates various ministries and state departments to enhance infrastruc-ture planning and execution.

2.   The initiative aims to improve India's Logis-tics Performance Index (LPI) by 10 positions by 2025.

3.   PM Gati Shakti includes provisions for pub-lic-private partnerships to encourage invest-ment in infrastructure projects.

How many of the statements given above are correct?
A. Only one
B. Only two
C. All three
D. None

Answer:B

Mains Question

Q.   Discuss the significance of the PM Gati Shak-ti initiative in transforming India's infrastruc-ture and connectivity. Evaluate its potential impact on economic growth, regional devel-opment, and sustainable practices in infra-structure planning.

(250 words, 15 marks)

PRELIMS BITs: Countries in the news

WHY IN THE NEWS:

President Droupadi Murmu embarks on a 3-nation visit to Algeria, Mauritania, and Malawi.

ALGERIA:

Geography

Location: North Africa, bordered by Tunisia, Libya, Niger, Mali, Mauritania, Western Sahara, Morocco,

and the Mediterranean Sea.

Area: 2,381,741 square kilometers (919,595 sq mi) — the largest country in Africa and the tenth-largest in the world.

Topography: Dominated by the Sahara Desert, with the Tell Atlas and Saharan Atlas in the north and various mountain ranges, including the Hoggar Mountains.

Climate: Semi-arid, with a more fertile climate in the northern regions.

History

Colonial Era: Invaded by France in 1830; gained independence in 1962 after a brutal war.

Civil War: Experienced a civil war from 1992 to 2002.

Government and Politics

Political System: Semi-presidential republic consisting of 58 provinces (wilayas) and 1,541 communes.

Regional Influence: A regional power in North Africa and a member of multiple international organizations including the African Union and OPEC.

Economy

Economic Profile: One of Africa's largest economies, heavily reliant on petroleum and natural gas reserves.

Major Company: Sonatrach, the national oil company, is the largest company in Africa.

Human Development: Second-highest Human Development Index in continental Africa.

Major Cities

Capital: Algiers.

Other Major Cities: Oran, Constantine, and Annaba.

MALAWI:

General Information
Official Name: Republic of Malawi
Former Name: Nyasaland
Location: Southeastern Africa, landlocked
Borders: Zambia (west), Tanzania (north/northeast), Mozambique (east/south/southwest)

Capital: Lilongwe

Major Cities: Blantyre, Mzuzu, Zomba

History: Colonial Rule: Became a British protectorate in 1891, renamed Nyasaland in 1907. Independence: Gained independence in 1964 and renamed Malawi; Hastings Banda became the first Prime Minister.

Dictatorship: Banda established a one-party state, and declared himself President for life in 1971.

Political System

Government Type: Unitary presidential republic. Current President: Lazarus Chakwera (elected in 2020).

Constitution: Established in 1995, promoting a

multiparty system.

Political History: Transitioned to democracy in 1993; the first multiparty elections were held in 1994.

Economy

Economic Structure: Primarily agrarian, with agriculture employing the majority of the population.

Key Exports: Tobacco, tea, and sugar.

Development Needs: Heavily reliant on foreign aid; significant challenges in poverty, education, and healthcare.

Geography

Location: Landlocked country in southeastern Africa.

Borders:

Zambia: Northwest

Tanzania: Northeast

Mozambique: South, southwest, and southeast

Topography:

Great Rift Valley runs north to south through the country.

Lake Malawi: Forms over three-quarters of the eastern boundary, approximately 587 km (365 miles) long and 84 km (52 miles) wide.

Shire River: Flows from Lake Malawi and joins the Zambezi River in Mozambique.

Mountainous areas rise to altitudes of 914 to 2,438 meters (3,000 to 8,000 ft).

Notable peaks: Zomba (2,134 meters) and Mulanje (3,048 meters).

Climate:

Hot in the low-lying areas, and temperate in the northern highlands.

Wet season: November to April, with peak rains in

late March.

Dry season: May to September, characterized by mist and little rainfall.

LAKE MALAWI/CALENDER LAKE

Geographical Location:

Situated between Malawi, Mozambique, and Tanzania.

It is the southernmost lake in the East African Rift system.

Size and Volume:

1. Fourth largest freshwater lake in the world by volume.

2. Ninth largest lake in the world by surface area. Contains a major depression in the north-central region, with another depression reaching 528 m (1,732 ft) in the far north.

Biodiversity:

Home to over 700 species of fish, primarily cichlids, making it the lake with the highest fish species diversity in the world.

The lake is crucial for local fisheries and biodiversity.

Water Characteristics:

Classified as a meromictic lake, meaning its water layers do not mix.

Maintains a permanent stratification with oxic-anoxic boundaries.

Hydrology:

The largest inflow: the Ruhuhu River.

Main outflow: Shire River, which feeds into the Zambezi River in Mozambique.

Over 80% of water loss is due to evaporation.

Economic Importance:

The outflows support hydropower, irrigation, and

biodiversity downstream.

Vital for local economies dependent on fishing and agriculture.

MAURITANIA:

General Information

Official Name: Islamic Republic of Mauritania

Location: Northwest Africa

Borders:

Atlantic Ocean: West

Western Sahara: North and northwest

Algeria: Northeast

Mali: East and southeast

Senegal: Southwest

Capital: Nouakchott (largest city)

History

Ancient Background: The name is derived from the ancient Berber kingdom of Mauretania.

Colonial Era: Colonized by France in the early 20th century as part of French West Africa.

Independence: Achieved in 1960; has experienced recurrent coups and military rule.

Recent Political Transition: In 2019, General Mohamed Ould Ghazouani succeeded General Mohamed Ould Abdel Aziz, marking the first peaceful transition of power since independence.

Ethnic Composition:

Bidhan (White Moors): ~30% of the population

Haratin (Black Moors): ~40%

Sub-Saharan ethnic groups: ~30%

Government Structure

Type: Unitary presidential republic.

Parliament:

National Assembly: A single chamber with 176 members elected for five-year terms in single-seat constituencies.

Political Leadership

President: Elected by an absolute majority in a two-round system if necessary.

Prime Minister: Appointed by the President.

Economy

Natural Resources: Abundant resources, including iron ore and petroleum.

Economic Activities: Primarily based on agriculture, livestock, and fishing.

Challenges: Despite resources, Mauritania remains poor and faces human rights issues.

Geography

Terrain: Generally flat, characterized by vast arid plains interspersed with occasional ridges and cliffs.

Desert Regions: Approximately three-quarters of

the country consists of desert or semidesert, with desertification increasing since the mid-1960s.

Topography

Scarps: A series of scarps bisect the plains, separating sandstone plateaus.

Adrar Plateau: The highest plateau, reaching about 500 meters (1,600 feet).

Isolated Peaks:

Guelbs: Smaller peaks rich in minerals.

Kedias: Larger peaks, with Kediet ej Jill being the highest at 915 meters (3,000 feet).

Guelb er Richat: A prominent geological feature known as the "Eye of the Sahara," located in the north-central region.

Vegetation and Ecoregions

Natural Vegetation: Varies with rainfall; includes traces of tropical forest along the Sénégal River, and savanna in the southeast.

Desert: Sandy desert dominates the center and north.

Climate

Rainfall Pattern: Influences the distribution of natural vegetation, with vegetation belts extending from east to west.

Unique Features

El Djouf (Empty Quarter): A vast region of large dunes merging into the Sahara.

Coastal Areas: Along the coast, alternating clayey plains (regs) and shifting dunes (ergs), influenced by high winds, are found.

PRELIMS QUESTION

Q. Consider the following pairs:

	Country	Features
1	Algeria	OPEC member
2	Mauritania	Part of the Maghreb region
3	Malawi	Only Landlocked country in Africa

How many of the above pairs are correctly matched?

A. Only one

B. Only two

C. All three

D. None

ANSWER: B

Empowering Rural India: NABARD Survey on Rural Financial Inclusion

WHY IN THE NEWS?

NABARD has published the findings from its second All India Rural Financial Inclusion Survey (NAFIS) for 2021-22, which offers primary data based on a survey of 1 lakh rural households, covering various economic and financial indicators in the post-COVID period.

WHAT IS THE NABARD SURVEY ON RURAL FINANCIAL INCLUSION?

The NABARD Survey on Rural Financial Inclusion, conducted by the National Bank for Agriculture and Rural Development, assesses financial inclusion in rural India. It examines access to banking services, usage patterns, and barriers to inclusion. Key findings indicate that many rural households lack basic financial services, and low financial literacy hinders the effective use of available products. Self-help groups (SHGs) are crucial for improving credit access, particularly for rural women. Geographical and cultural barriers further impact inclusion.

KEY FINDINGS:

1. Survey Overview:

Conducted by NABARD (National Bank for Agriculture and Rural Development) to assess financial inclusion in rural India.

Focuses on access to financial services, usage, and barriers faced by rural populations.

2. Access to Financial Services:

Approximately 66% of rural households have access to banking services.

Increase in the number of banking correspondents and micro ATMs in rural areas.

3. Financial Literacy:

Financial literacy among rural populations is low, with only about 30% understanding basic financial concepts.

NABARD has initiated various programs to enhance financial literacy.

4. Usage of Financial Products:

Around 58% of rural households maintain savings accounts.

Approximately 40% of farmers have access to formal credit, relying significantly on informal sources.

5. Self-Help Groups (SHGs):

Over 8.5 million SHGs were formed, benefiting around 100 million women.

SHGs linked to banks, improving access to credit for members.

6. Barriers to Financial Inclusion:

Difficulties in accessing banking facilities due to distance and poor infrastructure.

Gender disparities and social norms hinder women's access to financial services.

7. Digital Financial Inclusion:

Growing adoption of mobile banking, with over 50% of rural households using mobile phones for transactions.

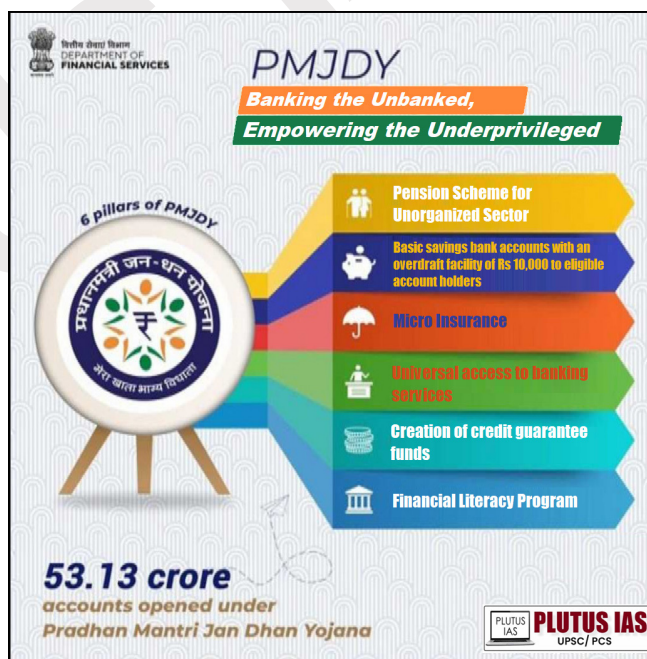Government initiatives like PMGDISHA aim to enhance digital literacy.

8. Impact on Livelihoods:

Financial inclusion positively impacts income generation, asset building, and improving living standards for rural families.

9. Future Recommendations:

Strengthening banking infrastructure and expanding the reach of financial services.

Enhancing financial literacy programs targeting diverse demographics, especially women and marginalized communities.

GOVERNMENT INITIATIVES:

1. **Pradhan Mantri Mudra Yojana (PMMY)**: Provides micro-financing support to small entrepreneurs in rural areas, enabling them to start or expand their businesses.

2. **Deendayal Antyodaya Yojana:** National Rural Livelihoods Mission (DAY-NRLM): Aims to reduce poverty by promoting self-employment and organization of rural poor into Self-Help

Groups (SHGs).

3. **Pradhan Mantri Awaas Yojana:** Gramin (PMAY-G): Focuses on providing affordable housing for the rural poor, ensuring secure living conditions that support economic activities.

4. **Financial Literacy Initiatives:** NABARD and the government implement various programs to enhance financial literacy among rural populations, enabling better use of financial services.

5. **National Rural Livelihood Mission (NRLM):** Encourages skill development and self-employment opportunities in rural areas to improve livelihoods and financial stability.

6. **Digital India Initiative:** Promotes digital literacy and the use of technology in financial services, making banking more accessible to rural communities.

7. **Rural Credit Schemes:** Various credit schemes are provided through NABARD and commercial banks to facilitate easy access to loans for agricultural and non-agricultural activities.

KEY ISSUES STILL PERSIST:

1. **Limited Access to Banking Infrastructure:** Many rural areas still lack sufficient banking facilities, leading to difficulties in accessing financial services.

2. **Low Financial Literacy:** A significant portion of the rural population lacks basic financial knowledge, hindering their ability to utilize financial products effectively.

3. **Dependence on Informal Sources:** Rural households often rely on informal lenders for credit, which can lead to high interest rates and increased debt burdens.

4. **Cultural and Social Barriers:** Gender disparities and social norms can restrict women's access to financial services, limiting their economic empowerment.

5. **Geographical Challenges:** Remoteness and poor transportation infrastructure make it difficult for rural residents to reach banking facilities.

6. **Inadequate Product Offering:** Financial products may not be tailored to the specific needs of rural populations, leading to lower usage rates.

7. **Economic Vulnerability:** Rural economies are often susceptible to shocks from climate change, market fluctuations, and health crises, affecting their financial stability.

WAY FORWARD:

1. **Strengthening Banking Infrastructure:** Increase the number of banking outlets and mobile banking units in remote areas to enhance access to financial services.

2. **Enhancing Financial Literacy:** Implement targeted financial literacy programs, particularly for women and marginalized groups, to improve understanding and usage of financial products.

3. **Promoting Digital Financial Services:** Leverage technology to provide digital banking solutions, making it easier for rural populations to access services remotely.

4. **Tailoring Financial Products:** Develop customized financial products that cater specifically to the needs of rural communities, including micro-loans and insurance options.

5. **Encouraging Self-Help Groups (SHGs):** Strengthen the SHG movement by providing training and resources to enhance their capacity to provide financial services and support to members.

6. **Policy Support and Regulation:** Create favourable policies and regulatory frameworks that encourage financial institutions to invest in rural areas and offer affordable services.

7. **Collaboration with NGOs and Community Organizations:** Partner with NGOs and local organizations to reach underserved populations and facilitate access to financial services.

8. **Building Resilience Against Econom-

ic Shocks: Develop programs that provide financial safety nets and support mechanisms to help rural populations withstand economic shocks, such as crop insurance and emergency funds.

CONCLUSION:

The NAFIS 2021-22 results show significant advancements in rural financial inclusion since 2016-17, with improvements in income, savings, insurance coverage, and financial literacy. Key government schemes, such as the Pradhan Mantri Kisan Samman Nidhi and MGNREGS, have greatly enhanced rural livelihoods. As access to financial services expands, the outlook for economic empowerment in these households is positive. The survey emphasizes the need for continued investment in rural development to ensure a financially secure and prosperous future for India's rural communities.

Prelims Question

Q. Which of the following statements are true regarding the NAFIS 2021-22 results and rural financial inclusion?

1. The survey indicates significant improvements in income, savings, insurance coverage, and financial literacy among rural households since 2016-17.

2. Government welfare schemes have had no impact on the lives of the rural population.

3. The survey emphasizes the need for ongoing support and investment in rural developmen

Select the correct answer using the code given below:

A. 1 only

B. 2 only

C. 1 and 3 only

D. All of the above

Answer: C

Mains Question

Q. Examine the role of technology in promoting financial inclusion in rural India as highlighted in the NABARD survey. What are the potential benefits and challenges of using technology in this context?

(250 words, 15 marks)

Prelims Bits: Lothal: An Ancient Hub of Metallurgy and Trade.

WHY IN THE NEWS:

The Union Cabinet, chaired by Prime Minister Shri Narendra Modi, has approved the development of the National Maritime Heritage Complex (NMHC) at Lothal, Gujarat. The project will be completed in two phases.

LOTHAL: AN ANCIENT HUB OF METALLURGY AND TRADE

1. **Location and Early Settlement:** Lothal, situated in the Indus Valley near the Gulf of Khambhat, began as a small village with a prosperous economy before 3000 BCE, evidenced by copper objects, beads, and semi-precious stones. The indigenous culture developed fine ceramic wares and a unique firing technique known as black-and-red ware.

2. **Town Planning and Architecture:** After a devastating flood around 2350 BCE, Harappans

established a planned township with an acropolis for rulers featuring advanced facilities and a complex drainage system, alongside a lower town for residential and commercial activities. Structures were made of kiln-fired bricks and mortar, contributing to their preservation over 4,000 years.

3. **Economy and Culture:** Lothal thrived as a trade hub, exporting beads, gemstones, and ivory while importing raw materials like copper and chert. High-quality tools and ornaments were produced with a uniform standard, though trade declined after the major flood around 1900 BCE, leading to a shift from independent businesses to a factory system.

4. **Engineering and Sanitation:** The city featured an advanced drainage system with underground drains, cesspools, and inspection chambers, reflecting sophisticated urban planning. Artifacts like ivory scales with decimal divisions and stone weights indicate advanced engineering practices.

5. **Religion and Cultural Practices:** The people practiced fire worship and animal sacrifice, with evidence of private and public fire-altars. There is speculation about the worship of a horned deity and possible cremation practices due to limited burial sites.

6. **Later Developments:** After the decline of the Indus civilization, a smaller, less urbanized community persisted in Lothal, maintaining some Harappan traditions but experiencing significant cultural and economic degradation.

7. **Metallurgy and Jewelry:** Lothal was known for its notably pure copper, with minimal arsenic, distinguishing it from other Indus Valley sources, and imported copper ingots from the Arabian Peninsula. Artisans created tools like celts and chisels and jewelry including bangles and rings, utilizing advanced casting methods and innovative tools unique to the time.

8. **Shell and Ivory Crafting:** The city became a prominent center for shell working, crafting various products for local use and export. An

organized ivory workshop was discovered, revealing seals and pieces used for boxes, combs, and ear-studs.

9. **Gold Jewelry:** Lothal produced an array of gold ornaments, with unique items such as microbeads less than 0.25 mm in diameter, and rings resembling modern Hindu wedding rings made from twisted copper wire.

10. **Art and Bead Industry:** Lothal's etched carnelian beads were highly sought after, with evidence of their trade in regions as far as Iraq, Afghanistan, and Iran. The advanced bead-making techniques used by artisans remained unchanged for over 4,000 years, producing unique designs like double-eye agate beads.

11. **Seals and Pottery:** A significant number of seals (213) were discovered, featuring engravings of animals and short inscriptions. Lothal introduced new pottery forms, with realistic depictions of animal scenes showcasing advanced artistic skills.

12. **Terra-Cotta Artifacts:** Excavations revealed complete sets of terra-cotta gamesmen and realistic human and animal figures, indicating a sophisticated understanding of anatomy and motion.

13. **Urban Planning:** The city covered an area of approximately 285 m (north-to-south) by 228 m (east-to-west) at its peak, primarily constructed with mud bricks. Remains of houses, drains, wells, and paved bathing platforms are still visible.

14. **Dockyard Features:** Lothal's trapezoidal dock, measuring 215 m (north-to-south) by 35 m (east-to-west), featured an inlet and sluice gates, indicating advanced engineering for cargo movement, facilitated by a mudbrick wharf leading directly to a warehouse.

15. **Acropolis and Lower Town:** The political and commercial center of Lothal featured well-structured mud-brick buildings, bathing platforms, and residences, while the lower town marketplace was organized along a main street lined with workshops, including bead

and metalworking facilities.

Q. With reference to the Lothal an IVC city, Consider the following statement:

1. Settlement at Lothal started during the Early Indus Valley Civilization.

2. Buddhism was prevalent in the Lothal settlement during the mature Harappan period.

3. There was no evidence of the metallurgical and engineering work found at Lothal.

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

ANSWER: B

Revitalizing Policies for Biodiversity and Food: A Global Call to Action"

WHY IN THE NEWS?

This report highlights the urgent need for countries to reassess and reform their agricultural and conservation policies to better protect biodiversity while ensuring food security for growing populations. It emphasizes the interconnectedness of food systems and environmental health, advocating for sustainable practices that can address both ecological degradation and food production challenges.

WHAT IS IUCN?

The International Union for Conservation of Nature (IUCN) is a global authority dedicated to nature conservation and sustainable resource management. Established in 1948, IUCN brings together governments, NGOs, scientists, and other stakeholders to address critical environmental issues. It is best known for its Red List of Threatened Species, which assesses the conservation status of species worldwide, guiding conservation efforts. IUCN also implements programs to protect ecosystems and wildlife, advocates for effective environmental policies, and conducts research to promote sustainable practices.

KEY FINDINGS:

1. Positive Findings:

- **Integrated Approaches:** Effective policies that combine agricultural practices with biodiversity conservation can lead to more resilient ecosystems and improved food security.

- **Sustainable Practices:** The adoption of sustainable farming techniques, such as agroecology, has been shown to enhance biodiversity while maintaining productivity.

- **Community Engagement:** Involving local communities and indigenous knowledge in policy formulation can lead to more effective conservation strategies and greater compliance.

- **Climate Resilience:** Biodiversity-rich ecosystems are better equipped to adapt to climate change, ensuring stable food supplies in shifting environmental conditions.

2. Negative Findings:

- **Policy Fragmentation:** Many countries face fragmented policies that do not adequately address the interconnectedness of agriculture and biodiversity, leading to ineffective outcomes.

- **Economic Pressures:** Short-term economic incentives often prioritize intensive farming practices over sustainable methods, resulting in habitat loss and decreased biodiversity.

- **Lack of Funding:** Insufficient financial resources for implementing conservation measures hinder progress in integrating biodiversity into agricultural policies.

- **Data Gaps:** Limited data on the impacts of agricultural practices on biodiversity complicates the formulation of effective policies and strategies.

WHAT ARE THE COMMON GROUNDS FOR THREATENING BIODIVERSITY?

1. **Habitat Loss:** Urbanization, deforestation, and land conversion for agriculture reduce natural habitats, leading to species extinction.

2. **Climate Change:** Altered weather patterns and rising temperatures affect species distribution, migration, and breeding cycles.

3. **Pollution:** Chemicals, plastics, and waste contaminate ecosystems, harming wildlife and disrupting food chains.

4. **Overexploitation:** Unsustainable hunting, fishing, and resource extraction deplete species populations faster than they can recover.

5. **Invasive Species:** Non-native species can outcompete, prey on, or introduce diseases to native species, disrupting local ecosystems.

6. **Agricultural Practices:** Intensive farming, monocultures, and pesticide use can degrade soil health and reduce biodiversity.

7. **Infrastructure Development:** Roads, dams, and industrial sites fragment habitats and create barriers for wildlife movement.

8. **Land Use Change:** Conversion of natural landscapes for development or agriculture impacts ecosystem services and biodiversity.

APPROACHES TO SUSTAINABLE AGRICULTURE:

1. **Crop Rotation:** Alternating different crops in a specific sequence to improve soil fertility, reduce pest and disease cycles, and enhance ecosystem resilience.

2. **Conservation Tillage:** Reducing tillage to maintain soil structure, minimize erosion, and enhance carbon sequestration while promoting healthier soil ecosystems.

3. **Organic Farming:** Avoiding synthetic chemicals and fertilizers, focusing on natural inputs and practices to foster biodiversity and soil health.

4. **Holistic Perspective:** Sustainable agriculture recognizes the interconnectedness of environmental health and food security, promoting practices that benefit both.

5. **Diverse Strategies:** Various approaches, such as agroecology, organic farming, and permaculture, cater to different local contexts and priorities, allowing for tailored solutions.

6. **Biodiversity Enhancement:** Sustainable

agriculture practices encourage biodiversity, which is crucial for ecosystem resilience and pest management.

7. **Soil Health Improvement:** Techniques like crop rotation and conservation tillage enhance soil fertility and structure, leading to more productive agricultural systems.

8. **Water Conservation:** Efficient water management practices help to conserve this vital resource, ensuring sustainable farming in the face of climate variability.

9. **Economic Viability:** Sustainable agriculture can enhance the economic stability of farming communities by promoting local markets and reducing reliance on expensive inputs.

CONCLUSION:

The IUCN report highlights the urgent need to align agricultural and conservation policies to balance food security with biodiversity preservation. Sustainable practices such as crop rotation, organic farming, and community engagement offer promising solutions, yet challenges like policy fragmentation and economic pressures persist.

Effective collaboration among governments, communities, and stakeholders is essential to create supportive environments for sustainable agriculture. By prioritizing ecological integrity alongside food production, we can foster resilient ecosystems and secure a sustainable food future for growing populations. Adapting diverse approaches to local contexts will be crucial in achieving these goals.

Prelims Question

Q. Which of the following statements accurately reflects key findings from the IUCN report on sustainable agriculture and biodiversity?

1. Sustainable agriculture primarily focuses on maximizing short-term economic gains through intensive farming practices.

2. Involving local communities and indigenous knowledge in policy formulation can enhance conservation strategies.

3. Fragmented policies have been shown to effectively address the interconnectedness of agriculture and biodiversity.

4. Sustainable practices, such as organic farming, have no significant impact on biodiversity enhancement.

Select the correct answer

A. 1 and 3 only

B. 2 only

C. 1, 3, and 4

D. 2 and 4 only

Answer: B

Mains Question

Q. Discuss the key challenges and opportunities in aligning agricultural policies with biodiversity conservation efforts. How can sustainable agriculture practices contribute to addressing these challenges while ensuring food security?

(250 words, 15 marks)

"Revolutionizing Broadcasting: Embracing Immersive Technologies, 5G, and Digital Radio Innovations"

WHY IN THE NEWS?

A symposium on 'Emerging Trends and Technologies in the Broadcasting Sector' meeting was held on the sidelines of the India Mobile Congress (IMC-2024). The symposium explored the transformative potential and practical applications of emerging technologies within the broadcasting industry, with a particular focus on immersive technologies, D2M 5G broadcasting, and digital radio.

RECENT ADVANCEMENT IN THE BROADCASTING TECHNOLOGY:

1. Immersive Technologies: VR and AR enhance viewer engagement with interactive content. The 360-degree video provides a panoramic viewing experience.

2. D2M Broadcasting: Enables personalized content delivery based on user preferences. Facilitates real-time interaction between broadcasters and audiences.

3. 5G Broadcasting: Offers high-speed connectivity for improved streaming quality. Reduces latency, enhancing live event experiences.

4. Digital Radio Technology: Provides clearer audio quality and more reliable reception. Integrates multimedia features with audio broadcasts.

5. HDR (High Dynamic Range) and Wide Color Gamut: Enhances the visual quality of broadcasts by improving contrast and providing richer, more vibrant colors. Elevates the viewing experience, especially for high-definition content like sports, movies, and nature documentaries.

6. Next-Generation TV (ATSC 3.0): It provides ultra-high-definition (4K) video, enhanced sound, and interactive content, making broadcast television more immersive. It also supports hybrid content delivery, combining over-the-air broadcasting with internet-based services.

7. Cloud-Based Broadcasting: Streamlines content production and distribution by leveraging scalable cloud infrastructure, reducing costs, and increasing flexibility. It also enables remote production and collaboration, enhancing broadcasters' efficiency.

8. AI-Driven Content Personalization: Utilizes artificial intelligence to tailor content recommendations and advertisements based on viewer preferences. Enhances user engagement and retention by offering personalized broadcast experiences across platforms.

9. Low-Latency Streaming Protocols (LL-HLS, CMAF): Reduces delays between live broadcast and online streaming, ensuring near real-time content delivery. Improves viewer experience, especially for live sports, news, and interactive content by synchronizing online and TV feeds.

SIGNIFICANCE OF EMERGING BROADCASTING TECHNOLOGY FOR INDIA'S ECONOMIC GROWTH

1. **Improved Information Access:** Digital broadcasting enhances access to information, empowering citizens and promoting informed participation in the economy.

2. **Creative Economy Boost:** The sector fosters job creation in content production, advertising, and marketing, driving economic diversification.

3. **Digital Transformation:** Aligns with initiatives like Digital India, increasing connectivity and

productivity across sectors.

4. **Attracting Foreign Investment:** Advanced technologies draw FDI into media and entertainment, spurring growth and job creation.

5. **Rural Connectivity:** Mobile and community radio enhance information access in rural areas, supporting agriculture, health, and education.

6. **Entrepreneurship Promotion:** Lower barriers for new ventures encourage start-ups in digital content and broadcasting, diversifying the economy.

7. **Increased Advertising Revenue:** Digital platforms enable targeted ads, boosting revenue for content creators and reducing consumer costs.

8. **Cultural Preservation:** Broadcasting technologies promote and preserve India's cultural heritage, enhancing cultural tourism.

9. **Employment Generation:** The expanding sector creates jobs in production, tech, and marketing, supporting local economies.

IRRITANTS TO HARNESSING BROADCASTING TECHNOLOGY IN INDIA

1. Regulatory Challenges:

Complicated licensing processes can take months, deterring new broadcasters. Frequent policy changes create uncertainty, complicating long-term planning.

2. Infrastructure Issues:

Over 600 million people in rural India still lack reliable internet access, hindering digital reach. Many broadcasting facilities use outdated technology, impacting quality.

3. High Adoption Costs:

Upgrading to advanced technologies like 5G re-
quires significant investment, often out of reach for smaller players. Maintenance costs for new technology can strain budgets, especially for regional broadcasters.

4. Content Quality and Diversity:

National broadcasters often overlook local stories, leading to viewer disengagement. The demand for rapid content production can compromise quality and trust.

5. Global Competition:

Platforms like Netflix and Amazon Prime dominate the market, making it challenging for local broadcasters. Piracy remains a significant issue, costing the industry billions in lost revenue.

6. Skilled Workforce Shortage:

Limited training programs focus on digital content creation and broadcasting technology. A lack of qualified technicians hampers innovation.

7. Consumer Awareness:

Nearly 50% of rural audiences need help with digital literacy, limiting their access to new platforms. Educational campaigns about the benefits of digital broadcasting are still underdeveloped.

8. Resistance to Change:

Many viewers prefer traditional media, slowing the transition to digital formats. Some industry professionals resist adopting new technologies because they fear obsolescence.

WAYS TO UNTAP THE POTENTIAL OF BROADCASTING TECHNOLOGIES IN INDIA

1. Leverage PM-WANI Initiative:

Enhance internet connectivity through the Pradhan Mantri Wi-Fi Access Network Interface (PM-WANI) to ensure wider access to digital broadcasting, especially in rural and underserved areas.

2. Supportive Policies and Acts:

Develop comprehensive broadcasting and digital media policies that foster innovation and integrate

broadcasting within the framework of the National Digital Communications Policy.

3. Enhance Common Service Centers (CSCs):

Utilize CSCs to deliver digital literacy programs and support local content creation, promoting regional stories and improving access to broadcasting technologies.

4. Encourage Private Sector Participation:

Facilitate public-private partnerships (PPP) to drive infrastructure investments and offer incentives for startups in the media sector, fostering innovation and competitiveness.

5. Strengthen Regulatory Framework:

Implement the pending Broadcasting Bill to create a unified framework for all forms of broadcasting, ensuring fair competition and high content quality standards.

6. Establish Clear Content Regulations:

Utilize the Cable Television Networks (Regulation) Act, 1995 to ensure guidelines for licensing and consumer protection are effectively enforced in the broadcasting sector.

7. Promote Digital India Programme:

Support initiatives under the Digital India Programme to enhance broadcasting infrastructure and accessibility and ensure the use of advanced digital technologies.

8. Combat Piracy Effectively:

Strengthen laws against piracy and launch public awareness campaigns to promote legal content consumption, addressing significant revenue losses in the industry.

9. Accelerate Technological Advancements:

Push for the rapid rollout of 5G technology to improve streaming quality and invest in AI and data analytics to deliver personalized content to viewers.

10. Focus on Content Localization:

Provide subsidies for producing regional content in various languages and collaborate with local creators to engage diverse audiences, enriching the broadcasting landscape.

CONCLUSION

Emerging broadcasting technologies have the potential to significantly impact India's economy by enhancing access to information, fostering job creation, and promoting cultural diversity. By leveraging advancements such as 5G, immersive technologies, and digital radio, the country can transform its media landscape and ensure that diverse voices are heard. Addressing current irritants—such as regulatory challenges, infrastructure limitations, and skill shortages—will be essential for fully harnessing this potential.

Prelims Questions

Q. Which of the following technologies is primarily associated with enhancing viewer engagement in broadcasting through interactive content?

A. Digital Radio Technology

B. Immersive Technologies

C. D2M Broadcasting

D. 5G Broadcasting

ANSWER: B

MAINS QUESTIONS

Q. Evaluate the role of public-private partnerships in driving innovation within the Indian broadcasting industry. What strategies can be implemented to attract investment and encourage collaboration among stakeholders?

(Answer in 250 words)