Today's Prelims Topics

Bonnet macaque

Context

Kerala is planning to sterilise **bonnet macaques to control their population** and reduce crop damage, seeking central approval since the species is protected and classified as vulnerable.

About the Bonnet Macaque

- **Scientific Name**: *Macaca radiata*
- **Endemic to**: South India
- **Conservation Status**:
  - **Schedule I** species under the *Wildlife Protection Act*, 1972 (highest protection)
  - **"Vulnerable"** as per IUCN Red List due to declining population
- **Habitat**: Commonly seen in forests, human settlements, and eco-tourism areas
- **Behavior**: Moves in troops; often enters human areas in search of food
- **Conflict with Humans**:
  - Causes **significant crop damage**, especially in forest-fringe villages
  - Known to raid coconut and other crops
- **Feeding Habits**:
  - Natural diet supplemented by leftover human food
  - Often seen in eco-tourism areas due to improper waste disposal

Source: TheHindu

Sariska Tiger Reserve

Context

The proposed redrawing of Sariska Tiger Reserve boundaries to reopen 50 closed mines has sparked criticism from the Congress, calling it an ecologically harmful move threatening tiger conservation efforts.

About Sariska Tiger Reserve

- **Location**: Rajasthan
- **History**: Formerly a royal hunting ground of the Maharaja of Alwar, it was declared a wildlife reserve in 1955 and later designated a national park in 1979.
- **Historical and Scenic Landmarks:** Pandu Pol, Bhangarh Fort, Ajabgarh, Pratapgarh, Siliserh Lake, and Jai Samand Lake.
- **Vegetation Type**: The forest mainly represents the **Northern Tropical Dry Deciduous Forests** and **Northern Tropical Thorn Forests**.
- **Flora**: The reserve is predominantly covered with **dhok** trees. Other plant species include **s**alar, kadaya, gol, ber, banyan, gugal, bamboo, kair, and adusta.
- **Fauna**: In addition to **tigers**, the reserve is home to a wide range of wildlife such as leopards, sambar deer, chital, nilgai, four-horned antelope, and wild boars.

Source: TheHindu

Synthetic genome

Context

Scientists in the UK have launched the Synthetic Human Genome Project (SynHG) to build human DNA from scratch.

What is a Synthetic Genome?

- A **synthetic genome** is a completely **artificially created or modified DNA sequence**, built in the lab.
- Scientists design and assemble these genomes to **alter or create life forms** by inserting the synthetic DNA into a host cell.
- It allows for **precise control** over the genetic makeup of an organism.
- **Example**: Scientists have synthesized the genome of *Mycoplasma mycoides*, resulting in a **synthetic bacterium** capable of replication — often called **synthetic life**.
- **Significance:**
    - **Manufacturing & Biotechnology**: Enables the creation of microbes that can produce **biofuels, pharmaceuticals, and chemicals** at industrial scale.
    - **Medical Science** :Opens doors to **gene therapies**, **personalized medicine**, and **synthetic vaccines** tailored to individual needs.
    - **Scientific Research**: Helps in understanding the **evolution and functioning of life** by creating minimal or custom genomes.
        - Aids in testing hypotheses about **gene functions** and **life's origin**.
    - **Understanding AMR (Antimicrobial Resistance)**: Synthetic organisms can be used to study how bacteria **evolve drug resistance**, helping design **better antibiotics**.
    - **Environmental Remediation**: Engineered organisms with synthetic genomes can **clean up pollutants**, degrade plastic, or absorb toxic waste.

Source: TheHindu

Registered Parties

Context

The Election Commission of India (ECI) has begun the process of **removing 345 Registered Unrecognised Political Parties (RUPPs) from its records**, as they have not participated in any elections since 2019 and cannot be physically located.

About Registered Unrecognised Political Parties (RUPPs)

- Political parties registered under **Section 29A of the Representation of the People Act, 1951**, but not granted recognition as State or National parties.
- **Privileges**:
  - Eligible for **income tax exemptions**.
  - Can legally **receive political donations**, even without contesting elections.
- **Common Symbol Allotment**: They are eligible for common symbols if they commit to put up at least 5% of the total candidates in the relevant Legislative Assembly election of a State.
- **Scale**:
  - As of 2025, India has over **2,800 RUPPs**.
  - According to ADR, their number rose from **1,112 in 2010** to **2,301 in 2019**—more than doubling in a decade.
- **Status**:
  - Around **97%** of all registered political parties in India are **unrecognised**.
  - Majority **fail to file mandatory financial reports** and disclosures.

Criteria for Recognition as a Political Party

- **For State Party Recognition (Must meet any one):**
  - **6% Vote + 2 Assembly Seats**
  - **6% Vote + 1 Lok Sabha Seat (from that state)**
  - **Minimum 3% of Assembly Seats or 3 seats**, whichever is higher
  - **1 Lok Sabha seat for every 25 seats** allocated to the state
  - **8% of total valid votes** in the state (Lok Sabha or Assembly), even without winning a seat
- **For National Party Recognition (Must meet any one):**
  - **6% Valid Votes in 4+ States + 4 Lok Sabha Seats**
  - **2% of Total Lok Sabha Seats (i.e., 11 seats)** from at least 3 different states
  - **Recognised as a State Party in 4 or more states**

Structural and Functional Issues with RUPPs

- **Electoral Inactivity**: Many RUPPs have not contested a single election since 2019, questioning their genuine political intent.
- **Lack of Financial Transparency**: Less than **5% submitted donation reports** between 2013–2016, reflecting poor financial compliance.
- **Tax Misuse**: Exploit **Section 13A of the Income Tax Act** to enjoy tax exemptions despite being politically inactive.
- **No Verifiable Presence**: Many parties have no functional offices or staff and fail to meet basic requirements under **Section 29A of RPA, 1951**.
- **Election-Time Surge**: Sharp rise in party registrations during election years often indicates misuse for **illicit donations or proxy candidates**.

Source: TheHindu

National Turmeric Board

Context

The Union Home Minister inaugurated the National Turmeric Board headquarters in Nizamabad, Telangana, fulfilling a 40-year-long demand of local turmeric farmers.

National Turmeric Board

- **Type:** Statutory body
- **Headquarters:** Located in **Nizamabad, Telangana** (known as the **Turmeric Capital of India).**
- **Ministry Involved:** Functions under the **Ministry of Commerce and Industry**.
    - Coordinates with Ministry of AYUSH, Ministry of Agriculture, Department of Pharmaceuticals, Ministry of Cooperation
- **Governing Body Composition:**
    - **Chairperson**: Appointed by the Central Government
    - **Secretary**: From the Department of Commerce
    - **Members** include:
        - Officials from the Ministries mentioned above
        - Representatives from major turmeric-producing states: **Telangana, Maharashtra, Meghalaya**
        - **Farmer representatives**, **exporters**, and **research institutions**
- **Objectives:**
    - Encourage **value addition**, **branding**, and **global marketing** of turmeric.
    - **Remove middlemen** to boost **farmers' income**.
    - Promote turmeric's **medicinal and health benefits** worldwide.
    - Improve **logistics**, **quality**, and **export readiness** to meet global standards.
    - Support **training**, **research**, and **skill development** in turmeric cultivation and processing.
- **Key Functions:**
    - Develop **export infrastructure** across the value chain.
    - Promote **GI-tagged organic turmeric** varieties.
    - Ensure **compliance with international food and safety standards**.
    - Collaborate with:
        - **Spices Board**
        - **National Cooperative Exports Limited (NCEL)**
        - **Other cooperative bodies** for promoting turmeric exports.

Turmeric Cultivation (Curcuma longa)

- **Growing Conditions:**
    - **Climate:** Warm, humid, tropical climates with temperatures between 20-30°C.
    - **Rainfall:** It requires a high annual rainfall, ideally 1500 mm or more.
    - **Soil: loamy or sandy loam soil** with good drainage.

Facts

- Turmeric is propagated through **rhizomes (not seeds)**.
- India is the **largest producer, consumer and exporter** of turmeric in the **world.**
- India has more than 62% share of world trade in turmeric.
- **Top Producing States: (1) Maharashtra (2) Karnataka (3) Telangana (4)Tamil Nadu.**
- The Government of India established the **National Turmeric Board in 2023 for** Developing and promoting the turmeric sector in India
    - **Nodal Ministry:** Ministry of Commerce and Industry

Source: PIB

Publications on Sustainable Development Goals (SDGs) by MoSPI

Context

On the occasion of 19th Statistics Day, on 29th June 2025, the Ministry of Statistics and Programme Implementation released the 3 publications on Sustainable Development Goals (SDGs).

More in news

The publications include the Sustainable Development Goals – National Indicator Framework (NIF) Progress Report 2025, Data Snapshot on SDGs – NIF Progress Report 2025, and the Sustainable Development Goals – NIF 2025.

Key Highlights of NIF Progress Report 2025

- **Social Protection Coverage:**Population covered by social protection systems increased from **22% (2016)** to **64.3% (2025)**.
- **Agricultural Productivity:** Gross Value Added in agriculture per worker rose from **₹61,247 (2015-16)** to **₹94,110 (2024-25)**.
- **Safe Drinking Water Access (Rural):** Percentage of rural population using improved drinking water sources increased from **94.57% (2015-16)** to **99.62% (2024-25)**.
- **Renewable Energy:** Share of renewable energy in total installed electricity generation grew from **16.02% (2015-16)** to **22.13% (2024-25)**.
    - Installed renewable energy capacity increased from **64.04 watts per capita (2014-15)** to **156.31 watts per capita (2024-25)**.
- **Waste Management:** Number of waste recycling plants rose from **829 (2019-20)** to **3,036 (2024-25)**.
    - Percentage of waste processed improved from **17.97% (2015-16)** to **80.7% (2024-25)**.
- **Entrepreneurship:** Start-ups recognised under Start-up India increased from **453 (2016)** to **34,293 (2024)**.
- **Reducing Inequality:** Gini coefficient (household expenditure) in rural areas decreased from **0.283 (2011-12)** to **0.237 (2023-24)**.
    - In urban areas, it fell from **0.363 (2011-12)** to **0.284 (2023-24)**.
- **Climate Action: Emissions intensity of GDP** reduced by **36% in 2020 over 2005 level**.
- **Digital Connectivity:** Internet subscriptions increased from **302.36 million (2015)** to **954.40 million (2024)**.
- **Forest Cover:** Forest cover as a percentage of total geographical area increased from **21.34% (2015)** to **21.76% (2023)**.

Source: PIB

News in Short

Noble rot

News? Scientists found that the fungus behind "noble rot" in wine **doesn't keep all its DNA in one nucleus.** Instead, its genetic material is **split across several nuclei**—something never seen before.

About Noble Rot (Botrytis cinerea)

- It is a special **form of fungal infection caused by *Botrytis cinerea*, used in winemaking.**
- **How it works**: The fungus infects grapes, **pierces the skin**, and causes the grapes to **shrivel** by drawing out water.
    - This **concentrates the sugars and flavors**, making the juice ideal for sweet wines.
- **Economic Value**: Wines made using noble rot are **rare and expensive** due to the complexity of harvesting and processing.

Source: TheHindu

Editorial Summary

Implementation and Challenges of New Criminal Laws and Digital Policing Tools in India

Context

- The introduction of new criminal laws in India, along with digital policing tools like the 'e-Sakshya' app and CCTNS (Crime and Criminal Tracking Network and Systems), marks a major step towards modernizing law enforcement.
    - While these changes promise greater transparency and efficiency, their implementation has revealed several practical and technical challenges that require urgent attention and ongoing adaptation.

What is the e-Sakshya Mobile Application?

- **Developed by:** National Informatics Centre (NIC) under the Inter-operable Criminal Justice System (ICJS)
- **Aim:** To assist police officers in real-time collection, preservation, and uploading of audiovisual evidence at crime scenes.
- **Key features include:**
    - Recording **search and seizure**, **crime scene videography**, and **witness statements**—each clip limited to 4 minutes, with the ability to add multiple clips per FIR.
    - Requiring officers to upload a **selfie** to authenticate evidence
    - Generating a **SHA-256 hash** for each recording to maintain data integrity
    - Storing evidence in the **National Government Cloud**, linked via CCTNS, enabling court access once fully integrated
    - Providing both **online and offline modes**, allowing delayed uploads if connectivity is an issue.

Challenges in the first year of implementation

- **Digital Infrastructure and Accessibility:** Investigating officers (IOs) often have to use their personal mobile phones for evidence collection, as official devices are insufficient.
    - 'e-Sakshya' app requires Android version 10+ and at least 1 GB storage, forcing officers without compatible phones to buy new ones.
    - Some police stations have only one official tablet, though there are multiple IOs per station.
- **Evidence Handling & Court Procedures:** Courts cannot yet directly access digital evidence stored in National Government Cloud (NGC) via ICJS.
    - IOs have to manually copy files to pen drives for court submission, causing duplication of work and extra costs.
    - In linked FIRs, pictures/videos cannot be deleted if they are poorly captured; only in unlinked mode is deletion possible (up to five SIDs).
- **Resource Constraints:** Although forensic experts' visits to crime scenes are now mandatory, the forensic infrastructure (labs, equipment, experts) has not improved proportionally.
    - Not all districts have a dedicated mobile forensic science laboratory unit.
- **Legal and Procedural Ambiguities:** Section 303(1) BNS creates confusion over registration of petty thefts (below ₹5000) as cognisable offences.
    - Section 112 BNS (petty organised offences) is open-ended, leading to inconsistent application.
- **Technical and Operational Issues:** Accused persons are hesitant to be videographed during evidence recovery (e.g., showing hidden weapons/drugs).

    - Cyber-crime cases require expert opinion for digital evidence, but many State labs are not notified under the IT Act, limiting their role in court.
    - In offline mode, only up to five SIDs (sets of evidence) can be created before requiring upload in a network area.
- **Timeliness of Medical Reports:** IOs struggle to get post-mortem reports on time, affecting investigation timelines.

Way Forward

- **Strengthening Digital and Forensic Infrastructure:** Increase resources for forensics and ICT (information and communication technologies) to provide more official devices (mobiles, tablets) to IOs and set up dedicated mobile FSL units in each district.
    - Notify and equip State cyber forensic labs under the IT Act for better handling and validation of electronic evidence.
- **Improving Digital Evidence Handling: Direct Court Access:** Enable courts to directly access evidence (photos, videos) stored in the NGC via ICJS, eliminating the need for manual copying to pen drives and reducing duplication and costs.
    - Address app limitations (such as ability to delete poorly captured evidence in linked FIRs).
- **Process Simplification and Feedback:** Seek feedback from all States/UTs to review ease of implementation, practical challenges, and legal hurdles, and use this input to refine procedures and address ground-level issues.
    - Ensure evidence integrity through auto-generation of hash values (SHA256) and mandatory certificates for secondary electronic evidence.
- **Legal Clarification and Training:** Review and clarify ambiguous legal provisions (like Section 303(1) and Section 112 BNS) to ensure uniform application.
    - Continuous training for IOs on new laws, digital tools, and forensic practices.
- **Improving Medical Report Timeliness:** Roll out systems like MedLEaPR nationwide to streamline the creation and sharing of medico-legal and post-mortem reports with police in real time.

Source: The Hindu

Case Study: Pachgaon – Community Forest Rights and Ecological Revival

Background

Pachgaon is a village located in Chandrapur district, Maharashtra. Historically, the forests surrounding Pachgaon were controlled and managed by the Forest Department, which prioritized industrial supply of resources like bamboo over community rights or ecological sustainability. Local livelihoods and the health of the forests suffered as a result.

Key Intervention

- With the enactment of the **Forest Rights Act, 2006**, Pachgaon village was granted **Community Forest Rights (CFR)** over approximately 1,000 hectares of forest land.
- This legal empowerment shifted forest governance from the state to the local community.
- **Community-Led Actions:**
    - **Sustainable Bamboo Harvesting:** The community began managing bamboo resources themselves, selling bamboo collectively and transparently. This provided significant income directly to villagers.
    - **Ending Harmful Practices:** Previously, villagers used to set fire to tendu leaves to encourage new growth. After CFR, they voluntarily stopped this practice, recognizing the long-term ecological harm.
    - **Conservation Initiatives:** The village set aside 30 hectares as a sacred grove, protecting it from any resource extraction to maintain biodiversity and as a cultural tradition.
    - **Participatory Management:** Decisions regarding forest use, conservation, and revenue sharing are made collectively through the Gram Sabha (village assembly), ensuring democratic and inclusive governance.

Outcomes and Impact

- **Ecological Benefits:**
    - The forests have shown **improved regeneration and healthy growth**.
    - Increased **carbon sequestration**, contributing to climate change mitigation.
    - Enhanced **biodiversity**, particularly in the sacred grove area.
- **Social and Economic Benefits:**
    - **Sustained and enhanced income** from bamboo sales and other minor forest produce.
    - **Reduced out-migration**: Economic stability has discouraged villagers from leaving in search of work elsewhere.
    - **Improved self-respect and social cohesion** among villagers.
- **Sustainable Livelihoods:** The model ensured livelihood security without compromising ecological integrity, creating a virtuous cycle of conservation and prosperity.

Significance

The **Pachgaon Way** is widely cited as a model for participatory forest management and ecological revival. It demonstrates:

- The effectiveness of **community rights** in ensuring sustainable and equitable forest governance.
- The importance of **democratic decentralisation** and **people's participation** for achieving conservation and development goals.
- A **replicable blueprint** for other regions, including the ecologically sensitive Western Ghats.

Conclusion

The **Pachgaon case** highlights how legal empowerment and community stewardship can achieve both ecological and economic objectives. It underlines the need for scaling up community forest rights, decentralised decision-making, and nature-centric, people-oriented approaches to forest management across India.

Source: Indian Express