75 Years of Supreme Court

For Prelims: President, Supreme Court, Constitution, Parliament, Basic Structure Doctrine, Article 21, Emergency, Public Interest Litigation (PIL), Collegium System, Writ Petitions, e-Courts Project, Central Vigilance Commission.

For Mains: Role of Supreme Court in Strengthening Democracy and Promoting Individual rights Since its Formation.

Source: PIB

Why in News?

Recently, the **President** unveiled the new **flag and insignia** of the **Supreme Court** (established - 26th January 1950) to mark the 75th year of its establishment.

- The flag features the **Ashoka Chakra**, the Supreme Court building and the book of the **Constitution of India**.
- Also, the Prime Minister released a **commemorative postage stamp** celebrating 75 years of the Supreme Court of India.

What are the Key Highlights of the Supreme Court's 75 Years Journey?

- **Role of Judiciary in Strengthening Democracy:** The judiciary in India has played a crucial role in safeguarding **democracy** and **liberal values** since independence.
  - It has acted as the **guardian of the Constitution**, a protector of the rights of the marginalised, and a **counter-majoritarian** institution of governance.
- **Evolution of Supreme Court (SC):** The journey of the SC and its role in strengthening democracy and protecting personal liberty can be classified into **four phases.**
  - **First Phase (1950- 1967):** It reflected adherence to **constitutional text and judicial restraint**.
    - **Focus on Judicial Review:** In the initial years post-independence, the judiciary maintained a **conservative approach**, limiting itself to interpreting the Constitution as written.
      - It exercised **judicial review** to check legislative actions **without overstepping** its boundaries.
    - **Avoidance of Ideological Influence:** The judiciary avoided being swayed by government ideologies like **socialism** and affirmative action.
      - For example, the ***Kameshwar Singh case, 1952***, declared the abolition of **zamindari as illegal** but refrained from nullifying constitutional amendments passed by the Parliament.
    - **Respect for Legislative Supremacy:** Cases like the ***Champakam Dorairajan case, 1951*** show that while the judiciary struck down **reservations** in educational institutions as a violation of the right to equality, it avoided confrontation with **Parliament**, adhering to a positivist interpretation of the Constitution.
  - **Second Phase (1967-1976):** It exhibited **judicial activism** and confrontation with

Parliament.

- **Expansion of Fundamental Rights:** The ***Golak Nath judgment, 1967*** marked a shift towards a more **expansive interpretation of fundamental rights**, challenging the Parliament's legislative power and reasserting the power of judicial review.
    - In the ***Golak Nath judgement, 1967*** the Supreme Court ruled that the Parliament cannot take away or abridge any of the Fundamental Rights.
- **Landmark Rulings on Constitutional Amendments:** The SC's decision in the ***Keshavananda Bharati case, 1973*** introduced the **'basic structure' doctrine**, which limited Parliament's power to amend the Constitution, setting the stage for a confrontation between the judiciary and the executive.
- **Impact of the Emergency on Judicial Independence:** The national emergency and the supersession of three senior-most judges to appoint **Justice AN Ray** as the **Chief Justice of India** majorly contributed to the judicial surrender in the ***ADM Jabalpur vs. Shivkant Shukla, 1976 case*** which supported the government's act of suspending the right to life under **Article 21** of the fundamental rights.
    - This **judgment marked a new low for Constitutional democracy** in the country besides exposing the institutional vulnerability of the higher judiciary.

◦ **Third Phase (1978- 2014):** It displayed judicial activism and expansion of **Public Interest Litigation (PIL).**

- **Course Correction Post-Emergency:** After the **Emergency**, the judiciary sought to regain its independence and credibility. The ***Maneka Gandhi case, 1978*** broadened the interpretation of **Article 21**, expanding the scope of the **right to life and personal liberty.**
- **Rise of Public Interest Litigation (PIL):** The judiciary, through cases like ***Hussainara Khatoon case, 1979*** expanded access to justice by allowing public-spirited individuals to file petitions on behalf of marginalised groups.
    - PILs became a tool for **judicial activism**, addressing issues such as human rights, environmental protection, and governance.
- **Collegium System:** The judiciary sought to maintain its autonomy by introducing the **collegium system** for the appointment of judges.
    - This system was later challenged by the **National Judicial Appointments Commission Act, 2014** which the judiciary struck down to protect its independence.

◦ **Fourth Phase (2014-Present):** It focussed on the **liberal interpretation** of the constitution and considering the Constitution as a living document.

- **Liberal Interpretation:** The Supreme Court has upheld the **revocation of Article 370** for full integration of J&K to the Indian Union.
- **Sustaining Judicial Activism:** Despite criticisms, the judiciary has continued to assert its role in protecting constitutional rights. E.g., the opaque **electoral bonds scheme** was held invalid by the Supreme Court.
    - In 2018, the Supreme Court struck down **Section 497** of the Indian Penal Code which criminalised adultery as being violative of **Articles 14**.

//

SUPREME COURT OF INDIA

The Supreme Court of India is the apex judicial body under the Constitution of India.

HISTORY

- **1773** – Regulating Act established Supreme Court at Calcutta
- **1800** – Supreme Court at Madras
- **1823** – Supreme Court at Bombay
- **1861** – High Courts Act created High Courts, abolished Supreme Courts
- **1935** – Government of India Act established Federal Court of India
- **1950** – Establishment of Supreme Court of India **(Article 124)**

COMPOSITION

- **Strength:** 34 judges including CJI, appointed by the President
- **Eligibility:** Indian Citizen; High Court judge for 5 years/Advocate for 10 years/Distinguished jurist
- **Tenure:** Until age 65 (unless resigns/impeached by President)
- **Salaries:** Determined by Parliament
- **Impeachment:** By President on Parliament's approval with a special majority

JURISDICTION

Original, Writ, Appellate and Advisory Jurisdictions:

- **Original:** Disputes between Government and States (Article 131); Constitutional Remedies (Article 32)
- **Writ:** Powers to issue writs for enforcement of fundamental rights (Article 139)
- **Appeals From HCs:**
  - Constitutional Matters (Article 132)
  - Civil Matters (Article 133)
  - Criminal Matters (Article 134)
  - Special Leave (Article 136; Discretionary Power)
- **Advisory:** Presidential referrals (Article 143)

OTHER POWERS

Court of Record, Judicial Review, Constitutional Interpretation etc.

- **Articles 129:** Powers to punish for **contempt**
- **Article 137:** Supreme Court review of its judgments
- **Article 141:** Supreme Court's decisions are binding on all courts
- **Article 142:** Orders and decrees of the Supreme Court are enforceable
- **Article 147:** SC is the **ultimate interpreter of the Constitution**

Acting Chief Justice, Ad Hoc Judge, & Retired Judge of SC

- **Acting Chief Justice:** Appointed by the President as needed
- **Ad Hoc Judge:** Appointed temporarily by the CJI for quorum issues
- **Retired Judge:** Chief Justice can reappoint retired judges temporarily

Drishti IAS

What are the Key Challenges Facing the Supreme Court of India?

- **Volume of Pending Cases:** At the end of 2023, the Supreme Court was saddled with **80,439 pending cases**. This backlog contributes to substantial **delays in justice delivery** that

undermine the efficiency and credibility of the judiciary.

- **Dominance of Special Leave Petitions (SLPs):** **Special Leave Petitions** (preferred means for civil and criminal appeals) constitute the majority of the Supreme Court's case list, overshadowing other types of cases like **writ petitions** and constitutional challenges.
    - This concentration impacts the court's ability to address a diverse range of issues effectively.
- **Selective Prioritization of Cases:** The **"pick and choose model"** allows certain cases to be prioritised over others, leading to perceptions of **preferential treatment**. For example, a high-profile bail application was given swift attention compared to other significant cases.
- **Judicial Evasion:** The backlog has sometimes led to **"judicial evasion,"** where important cases are **avoided or delayed**. Notable examples include delays in addressing the **Aadhaar biometric ID scheme** challenge and the **electoral bonds case**.
- **Conflict of Interest and Integrity:** Allegations of **corruption** within the judiciary, including the Supreme Court, pose challenges to its **integrity** and public confidence.
    - E.g. Justice **Abhijit Gangopadhyay of Calcutta High Court resigned as the Judge and soon after entered politics** highlighting a possible conflict of interest**.**
- **Concerns of Appointment of Judges:** The process of judicial appointments, particularly the role of the **Collegium system**, has been a topic of contention.
    - There have been discussions on reforms like the **National Judicial Appointment Commission** to make the appointment process more transparent and accountable.

Way Forward

- **All India Judicial Recruitment:** Recently, the **President** called for Judicial Recruitment at all India level. Establishing a national standard for judicial recruitment ensures **consistency and quality** across states, improving efficiency.
    - Judicial recruitments to district courts should not be restricted anymore by the narrow domestic walls of **regionalism** and confines of **State-centred selections**.
- **Case Management Reforms**: Implement advanced case management techniques to streamline processes.
    - For example, the **e-Courts Project** aims to digitise and automate court operations, which can help in managing and reducing case backlog.
    - Expand the use of the **Supreme Court's Case Management System (CMS)** to enhance tracking and management of cases.
- **Promote Alternate Dispute Resolution (ADR)**: Encourage the use of ADR mechanisms for cases that do not require Supreme Court intervention, as outlined in the **Arbitration and Conciliation Act, 1996**.
- **Transparent Case Listing**: Develop a transparent case listing and prioritisation protocol.
    - The **Supreme Court Portal** could include a feature to publicly track case statuses and priorities, ensuring transparency.
- **Clarify Institutional Goals**: Define and communicate clear institutional goals. The **Judicial Performance Evaluation** framework could be adapted to assess and realign the court's goals.
    - The **Supreme Court's Research and Training Institute** can play a role in supporting this focus.
- **Strengthen Accountability Mechanisms**: Implement stricter accountability measures for judges. For example, establish an **Independent Judicial Accountability Commission** similar to the **Central Vigilance Commission** for government officials.

Drishti Mains Question:

Discuss the Supreme Court's 75-year evolution while promoting democracy and personal liberty. Discuss strategies for overcoming current challenges to ensure effective justice?

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. With reference to the Indian judiciary, consider the following statements: (2021)

1. Any retired judge of the Supreme Court of India can be called back to sit and act as a Supreme Court judge by the Chief Justice of India with the prior permission of the President of India.
2. A High Court in India has the power to review its own judgement as the Supreme Court does.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither I nor 2

Ans: (c)

Q. Consider the following statements: (2019)

1. The 44th Amendment to the Constitution of India introduced an Article placing the election of the Prime Minister beyond judicial review.
2. The Supreme Court of India struck down the 99th Amendment to the Constitution of India as being violative of the independence of judiciary.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Ans: (b)

Q.With reference to the Constitution of India, consider the following statements: (2019)

1. No High Court shall have the jurisdiction to declare any central law to be constitutionally invalid.
2. An amendment to the Constitution of India cannot be called into question by the Supreme Court of India.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Ans: (d)

Mains

Q. Constitutional Morality’ is rooted in the Constitution itself and is founded on its essential facets. Explain

the doctrine of ‘Constitutional Morality’ with the help of relevant judicial decisions. **(2021)**

Q. Judicial Legislation is antithetical to the doctrine of separation of powers as envisaged in the Indian Constitution. In this context justify the filing of large number of public interest petitions praying for issuing guidelines to executive authorities. **(2020)**

Q. Critically examine the Supreme Court's Judgement on ‘National Judicial Appointments CommissionAct, 2014’ with reference to appointment of judges of higher judiciary in India. **(2017)**

BioE3 Policy and Biotechnology in India

For Prelims: BioE3 Policy, Vigyan Dhara, Net Zero Carbon Economy, Circular bioeconomy, Lifestyle for Environment, Gene therapy, Stem cell, Golden Rice, Bioremediation, Carbon footprint, National Biopharma Mission, Biotech-KISAN Scheme, Atal Jai Anusandhan Biotech Mission, One Health Consortium

For Mains: India’s Biotechnology Sector, Significance of Biotechnology for India, Key Challenges Hindering the Growth of Biotechnology in India.

Source: TH

Why in News?

Recently, the Union Cabinet approved the proposal **‘BioE3 (Biotechnology for Economy, Environment and Employment) Policy for Fostering High-Performance Biomanufacturing’** of the **Department of Biotechnology.**

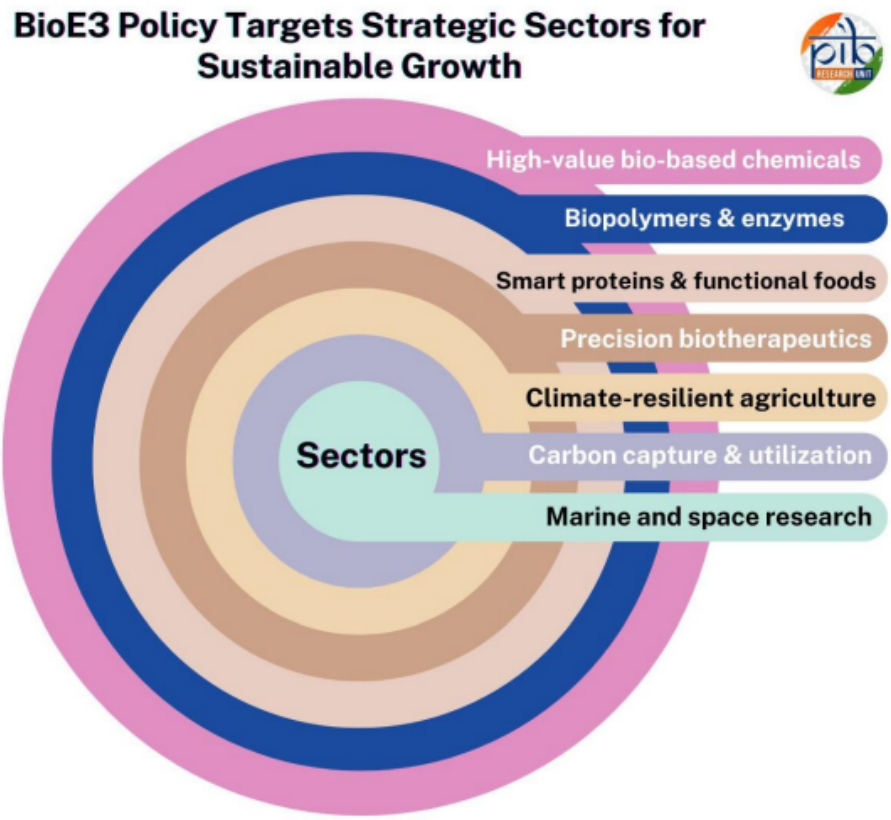
- Alongside the **BioE3 Policy, the Union Cabinet also merged three schemes of the Science & Technology Ministry** into a single scheme, called **Vigyan Dhara,** with a financial outlay of Rs 10,579 crore until 2025-26.

What is BioE3 Policy?

- **About:** The BioE3 is aimed at fostering high-performance **biomanufacturing,** which involves the production of **bio-based products across various sectors.**
  - The policy aligns with broader **national goals such as achieving a 'Net Zero' carbon economy** and promoting sustainable growth through a **circular bioeconomy.**
- **Objectives: The BioE3 policy emphasizes innovation in research and development (R&D) and entrepreneurship, establishes Biomanufacturing & Bio-AI hubs and Biofoundries, aims to expand India's skilled biotechnology workforce, aligns with** 'Lifestyle for Environment' programs, **and targets the development of regenerative bioeconomy models.**
  - The BioE3 Policy aims to **generate significant employment**, especially in **tier-II and tier-III cities** through the establishment of biomanufacturing hubs.
    - These hubs will utilise local **biomass**, fostering regional economic growth and equitable development.
  - The policy also **emphasizes ethical biosafety and global regulatory alignment** to boost India's global competitiveness while ensuring responsible biotechnology development.

- **Core Themes of the BioE3 Policy:**
  - **Bio-Based Chemicals and Enzymes:** Development of advanced bio-based chemicals and enzymes to reduce environmental impact.
  - **Functional Foods and Smart Proteins:** Innovations in functional foods and smart proteins to enhance nutrition and food security.
  - **Precision Biotherapeutics:** Advancing precision medicine and biotherapeutics to improve healthcare outcomes.
  - **Climate Resilient Agriculture:** Promoting agricultural practices that are resilient to climate change, ensuring food security.
  - **Carbon Capture and Utilization:** Fostering technologies for efficient carbon capture and its utilization in various industries.
  - **Futuristic Marine and Space Research:** Expanding research in marine and space biotechnology to explore new frontiers in biomanufacturing.

The policy's scope is broad and ambitious, encompassing several strategic sectors:



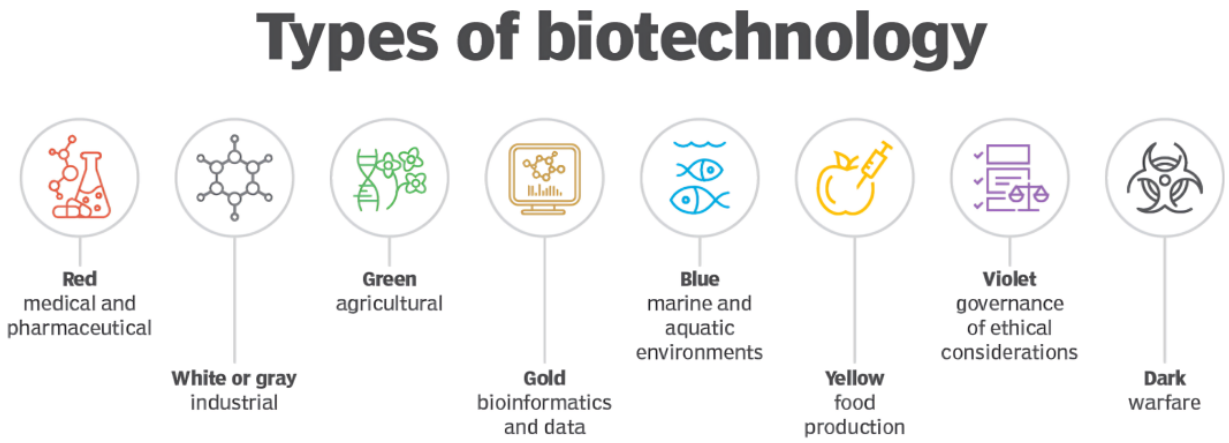
What is the Vigyan Dhara Scheme?

- **Background: The** Department of Science & Technology (DST) **acts as the nodal department for organising, coordinating, and promoting science, technology, and innovation activities in the country.**
  - The **three** (Science and Technology (S&T) Institutional and Human Capacity Building, R&D and Innovation, and Technology Development and Deployment) **central sector umbrella schemes implemented by DST** have been **merged** into the **unified scheme 'Vigyan Dhara'.**
- **Objectives and Goals**: The merging of the three schemes into Vigyan Dhara is designed **to improve fund utilisation and synchronisation** among various sub-schemes and programs.
  - Vigyan Dhara Scheme aims to expand the R&D base in the country and increase the Full-Time Equivalent (FTE) researcher count.
  - Focused interventions will enhance the **participation of women in Science, Technology, and Innovation (STI)** fields, with the goal of achieving gender parity.

    - All programs under Vigyan Dhara align with the 5-year goals of DST and are directed towards the larger vision of "Viksit Bharat 2047" a developed India by 2047.
- **Complementing the BioE3 Policy:** Enhancing S&T institutional infrastructure and developing a critical human resource pool.
    - Promotes **basic and translational research in sustainable** energy, water, and other critical areas.
    - Supports **innovations from school to industry levels and increases collaboration** between academia, government, and industries.

What is Biotechnology?

- **About:** Biotechnology, a field that intertwines biology with technology, harnesses **cellular and biomolecular processes** to create products and technologies that enhance our lives and safeguard our planet.
- **Benefits:**
    - **Healthcare Advancements: Medical Biotechnology (Red Biotech)** enables the development of advanced drugs, vaccines, and therapies, including personalised medicine, **gene therapy,** and **targeted cancer treatments.**
        - It also facilitates rapid vaccine production, as seen during the **Covid-19 pandemic. Stem cell** research and **tissue engineering** offer the potential to regenerate damaged tissues and organs, opening doors to treatments for previously untreatable conditions.
    - **Agricultural Improvements: Agricultural Biotechnology (Green Biotech)** involves **genetic modification** and engineering in plants that can produce crops that are more resistant to pests, diseases, and environmental stressors like drought, thus improving food security.
        - Biotech allows for the development of crops with enhanced nutritional profiles, such as **Golden Rice,** which is fortified with vitamin A to combat **malnutrition**.
    - **Environmental Sustainability: Biotechnology uses microorganisms to clean up pollutants (**bioremediation**) like oil spills, heavy metals, and plastics, helping to restore ecosystems and reduce environmental damage.**
        - **Industrial Biotechnology (White Biotech)** applies biotechnology to industrial processes, such as the production of biofuels, bioplastics, and biodegradable materials.
            - It focuses on **reducing environmental impact and promoting sustainability through** cleaner production methods.
        - Biotechnological innovations help recycle and upcycle waste materials, contributing to a **circular economy and reducing** landfills.
    - **Economic Growth:** The biotech industry drives economic growth by creating jobs in research, development, and manufacturing sectors.
        - Countries investing in biotechnology lead in cutting-edge innovations, giving them a competitive edge in global markets and trade.
    - **Climate Change Mitigation**: Certain biotechnologies can capture and utilize carbon dioxide from the atmosphere, helping to mitigate the effects of climate change.
        - Biotechnology aids in the production of cleaner biofuels, reducing reliance on fossil fuels and decreasing carbon footprints.
    - **Innovation in Materials**: Biotechnology enables the engineering of novel materials, including **bio-based fibers and high-performance bio-composites**, which have applications in industries ranging from fashion to aerospace.



What is the Current State of Biotechnology in India?

- **Biotechnology Hub:** India ranks among the **top 12 biotechnology destinations** globally. The Covid-19 pandemic accelerated the growth of biotechnology in India, leading to advancements in vaccines, diagnostic tests, and medical devices.
    - In 2021, India saw a record number of biotech startup registrations, with 1,128 new entries, the highest since 2015. The total number of biotech startups reached 6,756 by 2022, with expectations to hit 10,000 by 2025.
- **Bioeconomy:** India's bioeconomy has seen a meteoric rise, from **USD 10 billion in 2014 to over USD 130 billion in 2024,** with projections to reach USD 300 billion by 2030.
    - **Biopharma remains the largest segment of India's bio-economy,** accounting for 49% of its total value, estimated at USD 39.4 billion. The vaccination market is projected to be worth Rs. 252 billion (USD 3.04 billion) by 2025.
- **Bioresources:** India's vast biodiversity, especially in the **Himalayas,** and the 7,500 km long coastline provide a significant advantage in biotechnology.
    - The Deep Sea Mission aims to explore the biodiversity beneath the seas.
- **Government Initiatives:**
    - National Biotechnology Development Strategy 2020-25
    - National Biopharma Mission
    - Biotech-KISAN Scheme
    - Atal Jai Anusandhan Biotech Mission
    - One Health Consortium
    - Biotech Parks
    - Biotechnology Industry Research Assistance Council (BIRAC)
    - Genome India Project
- **Recent R&D Achievements in Applied Biotechnology:**
    - **ADVIKA Chickpea Variety:** A drought-tolerant chickpea variety was developed with enhanced seed weight and yield under drought conditions.
    - **Accel Breed Facility:** A state-of-the-art speed breeding facility at Punjab Agricultural University (PAU), Ludhiana, accelerates crop improvement programs.
    - **Indigenous Vaccines:** India developed several pioneering vaccines, including the **quadrivalent Human Papilloma Virus (qHPV) vaccine**, **ZyCoV-D (DNA vaccine)**, and additionally, **GEMCOVAC-OM,** an mRNA-based Omicron booster, was introduced.
    - **Gene Therapy:** **India's first gene therapy clinical trial for Hemophilia A received approval.**
    - **Novel Blood Bag Technology:** Researchers at **inStem, Bengaluru** created special sheets that **protect stored red blood cells from damage.**
        - This technology could help make better blood bags and reduce problems during transfusions.
- **Future Outlook:**
    - The biotechnology industry is set to reach **USD 150 billion by 2025** and has the potential to grow to USD 300 billion by 2030.

        - The sector is expected to contribute around **3.3-3.5% of India's** Gross Domestic Product (GDP) by 2025.
    - The market for diagnostic and medical devices is predicted to grow significantly, with the therapeutics sector expected to **generate USD 15 billion in bioeconomic activity by 2025.**
    - The expansion of **biotech incubators and support for startups** is anticipated to drive further growth and innovation across various sectors, including health, agriculture, and industrial processes.

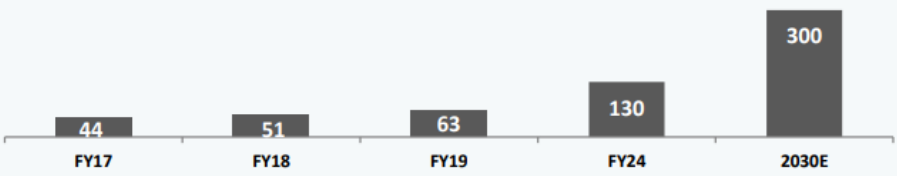
IBEF
INDIA BRAND EQUITY FOUNDATION

May 2024

BIOTECHNOLOGY

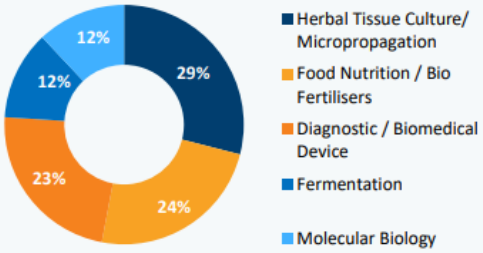
MARKET SIZE

India Biotechnology industry valuation (US$ billion)



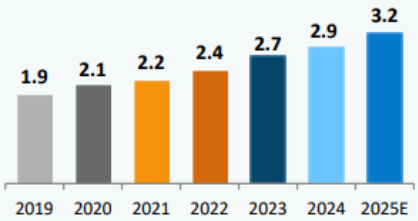
SECTOR COMPOSITION

Vertical-wise distribution of start-ups, FY21 (%)

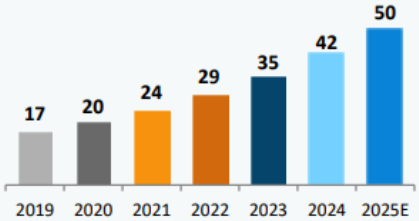


KEY TRENDS

Clinical trials market in India (US$ billion)



Medical device market in India (US$ billion)



GOVERNMENT INITIATIVES

Make in India

Biotech Parks

National Biopharma Mission

ADVANTAGE INDIA

- **Skilled human capital:** With a total population of 1.4 billion, 47% being under the age of 25, India has a large pool of young and skilled workforce. India has a large reservoir of scientific human resources, including scientists and engineers.
- **Government Support**: Central and state governments have worked to set up several incubators and life science clusters across India. There are 9 DBT-supported biotech parks and 75 BIRAC-supported bio-incubators. In the Interim Budget 2024-25, the Department of Biotechnology (DBT) was allotted Rs. 2,251.52 crore (US$ 271 million). National Biopharma Mission is supporting 101 projects including more than 150 organizations and 30 MSMEs. The National Biotechnology Development Strategy 2020-25, provides the government with a platform to strengthen skill development, resource and innovation.
- **FDI Policy**: 100% under automatic route for greenfield projects for pharmaceuticals; 100% under automatic route is allowed for the manufacturing of medical devices.
- **Epidemiological factors**: The patient pool is expected to increase over 20% in the next 10 years, mainly due to a rise in population.

What are the Challenges for Biotechnology in India?

- **Strategic Roadmap Development:** There's a lack of a comprehensive strategic roadmap for biotechnology that outlines **competitive areas and industry-specific R&D needs.**
    - The biotechnology sector requires a revolution similar to the **Green and White Revolutions** to achieve significant advancements in crop improvement and therapeutics.
- **Bio-Networking:** Effective bio-networking is needed to enhance **interaction among biotechnology businesses,** address **intellectual property rights,** and ensure **biosafety and bioethics.**
- **Human Resources:** There is a need for more specialised human resources in biotechnology, particularly in remote regions.
- **Regulatory Burden: India's regulatory environment for biotechnology is complex and slow, particularly for** genetically modified organisms (GMOs).
    - The approval process is cumbersome, with multiple agencies and the **Review Committee on Genetic Manipulation (RCGM)** leading to overlapping jurisdictions and delays.
- **Funding and Investment:** Although there is government funding for biotechnology projects, under the **Biotechnology Industry Partnership Programme (BIPP),** further investment is needed to support high-risk, leading-edge research.
- **IT Integration and Data Management: Biotechnology research requires extensive IT support for data management, including challenges related to data integration and the establishment of technical standards.**

Hyderabad as a Case Study for Biotechnology Development

- Hyderabad has secured over USD 700 million in investments and aims to reach USD 250 billion by 2030, reflecting significant financial backing for biotechnology.
- Major infrastructure projects such as **Genome Valley, Medtech Park, and Pharma City** are underway, enhancing Hyderabad's biotech ecosystem.
- The life sciences sector in Hyderabad has generated over **450,000 jobs in recent years, contributing to significant economic growth.**
- Telangana accounts for **1/3rd of global vaccine output** and Hyderabad is regarded as the **vaccine capital of the world**. Also, the State contributes to about **35% of India's pharmaceutical production.**
- Hyderabad offers **affordable human resources and lower real estate costs** compared to other global markets, attracting biotech firms.

Way Forward

- Expand training programs such as the **Biotech Industrial Training Programme (BITP)** to develop a skilled workforce in biotechnology.
- Encourage **venture capital investment** in biotech startups and early-stage companies. Foster **public-private partnerships** to mobilise resources and accelerate innovation.
- Formulating and implementing supportive policies and incentives will be vital. Policies should focus on regulatory streamlining, tax benefits, and **subsidies to attract and retain biotech firms.**
    - Leverage initiatives like the **Production Linked Incentive (PLI)** scheme to enhance competitiveness. Focus on building global market presence and brand recognition through strategic partnerships and investments.
- Actively participate in global initiatives related to biotechnology, such as the **Global Alliance for Genomics and Health** and the **International Association of Plant Biotechnology (IAPB).** Support the export of biotechnology products and services to global markets.

Drishti Mains Question:

Q. Discuss the BioE3 Policy, its alignment with India's national goals, and how biotechnology has evolved in India. Suggest potential solutions to address challenges.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. Other than resistance to pests, what are the prospects for which genetically engineered plants have been created? (2012)

1. To enable them to withstand drought
2. To increase the nutritive value of the produce
3. To enable them to grow and do photosynthesis in spaceships and space stations
4. To increase their shelf life

Select the correct answer using the codes given below:

(a) 1 and 2 only

(b) 3 and 4 only

(c) 1, 2 and 4 only

(d) 1, 2, 3 and 4

Ans: (c)

Mains

Q. What are the research and developmental achievements in applied biotechnology? How will these achievements help to uplift the poorer sections of the society? **(2021)**

Q. How can biotechnology help to improve the living standards of farmers? **(2019)**

Q. Why is there so much activity in the field of biotechnology in our country? How has this activity benefited the field of bio pharma? **(2018)**

Repairability Index for Mobile and Electronic Sectors

For Prelims: E-waste, Planned Obsolescence, Grey Markets, Right to Repair, European Union, Circular Economy, Repairability Index, Right to Repair Portal India, Intellectual Property.

For Mains: Significance and Challenges Associated with the Right to Repair, Need of Circular Economy.

Source: PIB

Why in News?

Recently, the **Department of Consumer Affairs (DoCA)** under the Ministry of Consumer Affairs, Food & Public Distribution hosted a **National Workshop on the Right to Repair Framework for the Mobile**

and Electronic Sectors.

- It discussed the launch of a **“Repairability Index”** for **mobile phones and electronic products** to help consumers make **informed decisions** before purchasing them.
- The initiative aims to address the growing **e-waste problem** and encourage manufacturers to produce more **easily repairable items**.

What are the Key Highlights of the Workshop?

- **Objective of the Workshop:** The workshop aimed to create a **consensus** among industry stakeholders on establishing a **repairability index, promoting product longevity, and democratising repair information** to enhance consumer experiences in reusing mobile and electronic products.
    - It helps **prevent** the need for consumers to **buy new products** due to a lack of repair options or high repair costs.
- **Addressing Planned Obsolescence:** The discussions focussed on combating the practice of **"planned obsolescence,"** where manufacturers **restrict access to essential repair information, repair manuals/videos,** and **spare parts.**
    - It highlighted that the **lack of repair information and spare parts availability** forces consumers to abandon their devices and buy new ones, or to seek risky counterfeit parts from **grey markets (unofficial market)**.
- **International Best Practices:** The sessions emphasised integrating **international best practices** from France, the **European Union**, the United Kingdom and designing products for longevity to enhance repairability.
    - Discussions covered the importance of sustainable product design, **ecological concerns**, and the need to shift from a **"use and dispose"** economy to a **"circular economy"** and promote **"mindful utilisation"** over **"mindless consumption."**

What are the Key Facts about the Repairability Index?

- **Definition:** The repairability index is a **mandatory label** that manufacturers will display on electrical and electronic equipment **to provide information about the product's repairability.**
- **Criteria for Rating Products:** The repairability index will evaluate products based on:
    - **Availability of Technical Documents:** Access to **manuals and guides** that assist in repairing the product.
    - **Ease of Disassembly:** How easily a product can be taken apart to access and repair components.
    - **Availability and Pricing of Spare Parts:** How readily available spare parts are and their cost to consumers.
- **Scoring System of the Repairability Index:** Products will be scored on a **scale from 1 to 5**.
    - **Score of 1:** Products with a **high risk of damage** and that require dismantling multiple components to access a single part.
    - **Score of 5:** Products that are **easy to repair**, with direct access to key parts like the **battery or display without unnecessary disassembly.**

What is the Right to Repair?

- **About:** The right to repair for **consumer goods refers** to allowing **end users, consumers as well as businesses**, to repair devices they own or service without any manufacturer or technical restrictions.
    - It **prevents manufacturers from restricting repairs** to their authorised services by limiting access to tools, parts, and documentation.
- **Features of the Right to Repair:**
    - **Access to Information**: Consumers should have **access to repair manuals,** schematics, and software updates.
    - **Availability of Parts and Tools**: Third parties and in**dividuals should be able to access the necessary parts** and tools for repairs.
    - **Legal Unlocking**: Consumers should be allowed to **unlock or modify devices, such as**

installing custom software.
    - **Repair-Friendly Design**: Devices should be designed for easy repair.
- **Need of the Right to Repair:**
    - **Growing e-waste**: The difficulty in repairing devices leads to an increase in **electronic waste**.
        - India is the world's **third largest contributor** to e-waste, with roughly **3.2 million metric tonnes** of e-waste created every year, **trailing only China and the United States.**
    - **Monopoly of Repairs**: Manufacturers often create barriers to **third-party repairs**, which **limits consumer choice** and increases costs.
    - **Planned Obsolescence**: Companies design products with a limited lifespan to encourage **frequent replacements.**
    - **Sustainability:** It will help **to achieve circular economy goals** by extending the life of appliances and improving their maintenance, reuse, upgrading, recyclability, and waste handling.

What Initiatives are Taken to Ensure the Right to Repair?

- **Right to Repair In India:**
    - The **Department of Consumer Affairs** has formed a committee chaired by **Nidhi Khare** that led to the creation of **Right to Repair Portal India**.
        - It serves as a **single platform** to provide easy access to necessary information on the repair and maintenance of products to consumers.
        - Sectors covered on this portal are **farming equipment, mobile and electronics, consumer durables and automobile equipment**.
        - As of now, **63 companies** have been **onboarded** to the portal, including **23** from the **mobile and electronics sector**, offering information on repair options, authorised repairers, and sources of spare parts.
- **Right to Repair in Other Countries:**
    - **United States:** The **Fair Repair Act of 2022** requires companies to provide **patented tools** and remove software restrictions that prevent users from repairing their own products.
    - **European Union:** The **Right to Repair Rules 2019** aims to establish a **circular economy** of digital products, giving users access to repair tools to repair consumer appliances.
    - **United Kingdom: Right to Repair Regulations 2021** ensure spare parts are available for up to **ten years** after product release.
    - **Australia:** Volunteer repairmen gather at **“Repair Cafes”** to share their skills with people who bring in their goods.

What are the Challenges Involved in Implementing the Right to Repair?

- **Opposition from Tech Companies:** Companies like **Apple, Microsoft, and Tesla** argue that the right to repair could compromise **security, intellectual property, and product quality**.
    - User safety, **shrinking technology size**, and reduced incentives for innovation are points of Concern.
- **Shrinking Technology:** Every year, technology shrinks, and repairing **intricate hardware** becomes less obvious to the average person.
    - While older technology could be repaired with common tools available at any hardware store, **modern technology is smaller and more nuanced in comparison.**
    - They frequently **necessitate the use of specialised tools that are not widely available** and may even necessitate licensing.
- **No Incentive to Innovate: Original Equipment Manufacturers (OEMs)** continually push for **new technology** as it benefits them.
    - OEMs argued that **innovation will take a back seat if people prefer repairing** gadgets over upgrading them.
- **Efficiency:** Modern **technological products** are designed to be as efficient as possible within their given form factor. Making it easier to repair would require **lowering its efficiency**.
- **Security and Privacy**: Allowing third-party access could lead to **a security breach of users’**

data.

Way Forward

- **Fair Access to Repair Tools and Information:** Manufacturers could be encouraged or required to **make repair manuals, diagnostic tools, and spare parts more accessible** to certified independent repair shops.
    - This would also **help consumers by providing them with the necessary resources** for repairs.
- **Balancing Efficiency and Repairability in Product Design:** Manufacturers should aim for a balanced approach between **product efficiency and repairability**.
    - This could be achieved by designing modular components that are easier to repair or replace without significantly affecting the device's overall performance.
- **Incentivizing Innovation and Research:** To maintain innovation momentum, governments could provide incentives such as **tax breaks, grants, or subsidies** for companies that invest in research and development while also supporting repairable product designs.

Drishti Mains Question:

Q. Discuss the concept of the 'Right to Repair' and its implications for consumer rights, environmental sustainability, and innovation.

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. In India, ‘extend producer responsibility’ was introduced as an important feature in which of the following? (2019)

(a) The Bio-medical Waste (Management and Handling) Rules, 1998

(b) The Recycled Plastic (Manufacturing and Usage) Rules, 1999

(c) The e-Waste (Management and Handling) Rules, 2011

(d) The Food Safety and Standard Regulations, 2011

Ans: (c)

Q. Due to improper/indiscriminate disposal of old and used computers or their parts, which of the following are released into the environment as e-waste?(2013)

1. Beryllium
2. Cadmium
3. Chromium
4. Heptachlor
5. Mercury
6. Lead
7. Plutonium

Select the correct answer using the codes given below:

(a) 1, 3, 4, 6 and 7 only

(b) 1, 2, 3, 5 and 6 only

(c) 2, 4, 5 and 7 only

(d) 1, 2, 3, 4, 5, 6 and 7

Ans: (b)

Mains

Q. What are the impediments in disposing of the huge quantities of discarded solid waste which are continuously being generated? How do we safely remove the toxic wastes that have been accumulating in our habitable environment? **(2018)**

Q."The growth of cities asI.T. hubs has opened up new avenues of employment, but has also created new problems". Substantiate this statement with examples **(2017)**

Adverse Effects of Lithium Mining

Source: IE

Why in News?

According to a new study, land subsidence is occurring in Chile's **Atacama salt flat** due to lithium mining.

What are the Key Revelations of the Study?

- **Findings:**
  - **Rate of Sinking:** The Atacama salt flat in Chile is sinking at a rate of 1 to 2 centimetres per year due to **lithium brine extraction**.
    - Lithium brine extraction involves **pumping salt-rich water** to the surface and into evaporation ponds to obtain **lithium**.
    - The sinking is caused by the extraction of lithium-rich brine at a rate faster than the natural recharge of **aquifers**, leading to subsidence.
- **Lithium Mining Impact on the Environment:**
  - **Water Usage:** The process requires massive amounts of fresh water, with **2,000 tons of water** needed to produce **one ton of lithium**.
  - **Water Scarcity:** This extraction exacerbates **water scarcity** in the **Atacama Desert**, affecting both local communities and ecosystems.
  - **Chemical Contamination:** Chemicals like **sulfuric acid and sodium hydroxide** used in l**ithium extraction contaminate soil and water,** harming ecosystems and endangering species.
  - **Impact on Wildlife:** A 2022 study highlighted a decline in **flamingo** populations in the Atacama region due to reduced water levels, which affect their reproduction rates.
- **Potential Impact of Lithium Mining in Reasi (J&K):**
  - **Water Crisis:** Many villages in **Reasi** are struggling to access enough water, after **perennial streams dried** up following the construction of the **Chenab Rail Bridge.**
    - Water-intensive lithium mining can further **worsen** the situation.
  - **Threat to Biodiversity:** The **Himalayan region** in J&K is a **biodiversity hotspot** and a **eco-sensitive region,** and mining could lead to a significant loss of biodiversity.
    - It can hamper **the habitat of migratory birds like Common Teal, Northern Pintail** etc who come every year to stay in lakes, marshes and **wetlands** of Jammu and Kashmir.
  - **Food Insecurity:** Mining and processing lithium can further jeopardise **food security** through its excessive **carbon emissions,** water, and land use methods.
  - **Pollution:** The Himalayas are the source of so many rivers and mining activity may pollute

the entire **riparian ecosystem.**

What are the Key Facts about Lithium?

- **About:** It is a **soft, silvery metal**. It has the lowest density of all metals.
  - It has **high reactivity, low density and excellent electrochemical properties.**
  - Its ores are **Petalite, Lepidolite and Spodumene**. It is also known as the **“white gold”**.
- **Applications:**
  - **Batteries:** The most important use of lithium is in **rechargeable batteries** for mobile phones, laptops, digital cameras and **electric vehicles**.
    - Lithium is also used in **some non-rechargeable batteries** for things like **heart pacemakers**, toys and clocks.
  - **Alloys:** A magnesium-lithium alloy is used for **armour plating**.
  - **Air Conditioning:** Lithium chloride and lithium bromide are used in **air conditioning** and **industrial drying systems** due to their **hygroscopic properties.**
  - **Lubricants:** Lithium stearate is used as an all-purpose and **high-temperature lubricant**.
- **Reserves: Chile** holds the **largest lithium reserves** globally, accounting for **36%** of the total, and is the **second-largest producer**, contributing **32%** to the world's supply.
  - Chile is a part of the **"lithium triangle"** along with **Argentina and Bolivia**.
  - **Australia** and **China** are the **first** and **third** largest producers of Lithium globally.

Atacama Desert

- **Location:** The Atacama Desert is located in **Chile** between the **Cordillera de la Costa mountain range** and the **Andes Mountains.**
- **Climate:** The desert is shielded from rainfall by the **Andes Mountains** to the east and experiences atmospheric conditions that prevent cloud formation due to **cold water upwelling (Peru/Humboldt Current)** from the Pacific Ocean.
- **Temperatures:** Unlike other deserts, the Atacama has a **mild average** temperature of about **18 degrees Celsius** due to **the temperate climate** and **upwelling of cold water.**
- **Mineral Resources:**
  - **Salt Deposits:** The desert's core is covered in thick salt deposits called **playas**.
  - **Nitrate Belt:** The desert contains **nitrate minerals**, historically mined for use in explosives and fertilisers.
  - **Mineral Richness:** It is rich in other materials like **lithium, copper, and iodine**.
- **Protected Areas: Pan de Azúcar National Park** is the only large national protected area within

the ecoregion.

Read More: [India's Lithium Mining Challenges]

Drishti Mains Question:

Q. Discuss the adverse environmental impacts of lithium mining. How does it pose a threat to the eco-sensitive regions of the country?

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. Which one of the following pairs of metals constitutes the lightest metal and the heaviest metal, respectively? (2008)

(a) Lithium and mercury

(b) Lithium and osmium

(c) Aluminium and osmium

(d) Aluminium and mercury

Ans: (b)

Q. What could be the main reason/reasons for the formation of African and Eurasian desert belt? (2011)

1. It is located in the sub-tropical high pressure cells.
2. It is under the influence of warm ocean currents.

Which of the statements given above is/are correct in this context?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Ans: (a)

Mains

Q. Coastal sand mining, whether legal or illegal, poses one of the biggest threats to our environment. Analyse the impact of sand mining along the Indian coasts, citing specific examples. **(2019)**

Q. What are the impediments in disposing of the huge quantities of discarded solid waste which are continuously being generated? How do we safely remove the toxic wastes that have been accumulating in our habitable environment? **(2018)**

Ambipolar Electric Field

Source: HT

Why in News?

Recently, the **National Aeronautics and Space Administration (NASA)** has, for the first time, detected **Earth's hidden ambipolar electric field,** which plays a crucial role in driving the **"polar wind"** that propels charged particles into space at supersonic speeds.

- The discovery, published in the ***journal Nature,*** marks a significant advancement in our understanding of **Earth's ionosphere** and its interactions with space.

What is the Ambipolar Electric Field?

- **Definition**: The ambipolar electric field is a **weak, planet-wide electric field** that affects the movement of **charged particles in Earth's atmosphere.** It was proposed to be as fundamental as **gravity** and **magnetism.** The ambipolar field was first hypothesized in the 1960s.
- **Mechanism**: The electric field, generated at about **150 miles altitude,** interacts with charged particles (ions and electrons). It prevents the separation of charges and helps lift some ions high enough to escape into space.
    - The ambipolar field is **bidirectional**, meaning it works in both directions (lifting ions into space while pulling electrons downward), effectively tethering them together and the net effect of the ambipolar field **extending the height of the atmosphere.**
- **Detection:** The discovery was made using a NASA suborbital rocket launched as part of the **Endurance mission** that confirmed the existence of the ambipolar field and quantified its strength.

How does the Ambipolar Field Affect Earth's Atmosphere?

- **Increased Scale Height:** The ambipolar field increases the "scale height" of the ionosphere by 271%. This means the **ionosphere remains denser at greater altitudes than it would without the field.** The increased density contributes to the polar wind, driving charged particles into space.
    - **Ionosphere**, a layer of the upper atmosphere where charged particles are abundant.
    - The polar wind is an **ambipolar (bidirectional) outflow of thermal plasma** from the high-latitude ionosphere to the **magnetosphere (region around a planet dominated by the planet's magnetic field),** consisting primarily of Hydrogen, Helium, and Oxygen ions and electrons.
- **Effect on Hydrogen Ions:** The field **exerts a force 10.6 times stronger than gravity** on hydrogen ions. This significant force propels them into space at supersonic speeds, enhancing atmospheric escape.
- **Broader Implications**: Understanding this field provides insights into Earth's **atmospheric evolution and can be applied to other planets with atmospheres**, such as **Venus** and **Mars.** It may also help to understand which planets could be hospitable to life.

Endurance Mission

- It was a NASA-funded mission conducted through the Sounding Rocket Program at NASA's Wallops Flight Facility in Virginia.
- The primary goal is to measure Earth's global electric potential, which is believed to be very weak. This electric potential is crucial for understanding why Earth can support life, unlike other planets such as Venus.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. What is 'Greased Lightning-10 (GL-10)', recently in the news? (2016)

(a) Electric plane tested by NASA

(b) Solar-powered two-seater aircraft designed by Japan

(c) Space observatory launched by China

(d) Reusable rocket designed by ISRO

Ans: (a)

Strengthening India's Mineral Exploration Sector

Source: PIB

Why in News?

The Ministry of Mines thoroughly reviewed the performance of the **National Mineral Exploration Trust (NMET)** at the 6th Governing Body meeting of NMET.

- During the meeting, the **Annual Report of NMET** for 2023-24 was officially released.

What are the Key Developments?

- **Enhancement of NGDR Portal:** The upgradation of the **National Geoscientific Data Repository (NGDR) portal** was initiated.
  - It aims to facilitate seamless collaboration for **geoscientific data sharing** for optimising it for the nation's benefit.
- **Reimbursement Schemes:** A revised scheme for **Partial Reimbursement of Exploration Expenses**, raising the reimbursement ceiling for **Composite License (CL)** holders has been approved.
- **Support for Left Wing Extremism-Affected Districts and Start-ups:** NMET is actively promoting mineral exploration in districts affected by **Left Wing Extremism** by providing 1.25 times the **standard Schedule of Charges** for fieldwork.
- **Incentives for Critical and Strategic Mineral Exploration:** A 25% exploration incentive for agencies engaged in discovering **Critical and Strategic Minerals** has been announced.
- **Encouraging State-Level Mineral Exploration:** States were advised to establish State Mineral Exploration Trusts, similar to NMET, to encourage exploration of minor minerals.
- **Focus on Start-ups and Emerging Technologies:** The importance of establishing start-ups in the mining sector, especially in areas like **AI**, automation, and drone technology was emphasised.

Rules to Boost Offshore Mineral Exploration and Production

- **About:** The Centre has introduced the **Offshore Areas Mineral Trust Rules, 2024**. It is the first-ever framework to oversee mineral exploration and production in India's offshore areas.
  - Offshore area means the territorial waters, continental shelf, exclusive economic zone and other maritime zones of India under the **Territorial Waters, Continental Shelf and Exclusive Economic Zone**.
  - Under the new rules, **holders of production leases of offshore mines are required to contribute to the Offshore Areas Mineral Trust** by paying **10%** of their **royalty** payments to the government.
    - This sum will be deposited in the **Public Account of India**, providing a financial backbone for the Trust's initiatives.
- **Offshore Areas Mineral Trust:** It is a **fund** established to manage and allocate **revenues** generated from **offshore mineral resources**, ensuring sustainable development and promoting mineral exploration and production.

National Mineral Exploration Trust (NMET)

- **Establishment:** NMET was established under Section 9C of the **Mines and Minerals (Development and Regulation) Act, 1957**, with the aim to accelerate mineral exploration in

India.

- **Objectives:** The **Trust supports regional and detailed mineral exploration** in the country and other activities approved by the Governing Body. **Its objectives include**:
  - **Special studies and projects to identify, explore, extract,** beneficiate and refine deep seated and concealed mineral deposits
  - Studies on mineral **development, sustainable mining, mineral extraction and metallurgy adopting advanced scientific and technological practices.**
- **Governance Structure:** NMET has a two-tier structure.
  - **Governing Body**: The apex body is the Governing Body, **chaired by the Hon'ble Minister of Mines**. It holds the overall control of the Trust.
  - **Executive Committee**: The Executive Committee, **chaired by the Secretary, Ministry of Mines**, administers and manages its activities.
- **Funding Mechanism:** The NMET Fund is established to **implement the Trust's activities.**
  - The Fund receives contributions from holders of mining leases or prospecting **license-cum-mining leases, amounting to 2% of the royalty paid as per the MMDR Act, 1957.**

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims:

Q. With reference to India consider the following Central Acts. (2011)

1. Import and Export (Control) Act, 1947
2. Mining and Mineral Development (Regulation) Act, 1957
3. Customs Act, 1962
4. Indian Forest Act, 1927

Which of the above Acts have relevance to/bearing on the biodiversity conservation in the country?

(a) 1 and 3 only

(b) 2, 3 and 4 only

(c) 1, 2, 3 and 4

(d) None of the above Acts

Ans: (c)

Launch of Tanager-1

Source: IE

Recently, the National Aeronautics and Space Administration (NASA) launched the **Tanager-1 satellite** to detect major emitters of **carbon dioxide and** methane.

- Tanager-1 will use **imaging spectrometer technology** to measure wavelengths of light that are

reflected by Earth's surface.
    - Methane and Carbon dioxide absorb different **wavelengths of light**, leaving spectral "**fingerprints"** that the imaging spectrometer can identify.
- It will be able to measure **point-source emissions**, down to the level of individual facilities and equipment, on a global scale.
- Earlier, NASA had launched MethaneSAT which tracks and measures methane emissions.
- **Methane**: Methane is a strong greenhouse gas and the **second largest contributor to** global warming **after carbon dioxide.** It is responsible for **30%** of global heating.
    - According to the United Nations Environment Programme, over a period of **20 years,** it is **80 times more potent** at warming than **carbon dioxide.**
    - It also contributes to the formation of ground-level ozone, a colourless and highly irritating gas that forms just above the Earth's surface.

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Rail One Force and Iron Diplomacy

Source: IE

Recently, Prime Minister Narendra Modi arrived in Kyiv by train from Poland, with the train dubbed "**Rail Force One".**

- **Rail Force One is a part of Ukraine's programme called Iron diplomacy.**
- **Iron diplomacy refers to the practice of transporting** world leaders from **Poland through** Ukraine **via rail** since the start of the Russian invasion of Ukraine in 2022.
- The train is run by the state-owned **Ukrainian Railways or Ukrzaliznytsia** and is painted **blue and yellow,** the colours of Ukraine's flag.
- The train travels approximately **700 km** southeast from **Przemysl, Poland, to Kyiv,** taking around **10 hours** through the Ukrainian countryside.
- The train has been used by leaders like former British PM Boris Johnson, French President Macron, European Commission President Ursula von der Leyen, Canadian PM Justin Trudeau, as well as Biden and PM Modi.

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Launch of Samudra Pratap

Source: PIB

Recently, the first indigenously built Pollution Control Vessel Samudra Pratap was launched in Goa.

- The Ship has been built by **Goa Shipyard Limited (GSL)** for the Indian Coast Guard (ICG).
- It is for the **first time** that these vessels are being **designed and constructed indigenously.** The vessel will help to check the oil spillage in the country's sea coast.
- **Oilspill:**
    - An oil spill is the **release** of a liquid petroleum hydrocarbon into the environment, especially **marine areas,** due to human activity.
    - Oil spills may be caused by releases of crude oil from **tankers, offshore platforms,**

drilling rigs or wells.
    - Oil on ocean surfaces harms aquatic life by **blocking sunlight** and **reducing** dissolved oxygen levels.
    - The **Deepwater Horizon oil spill (2010)** in the Gulf of Mexico is considered the largest and most famous oil spill in history.
    - Oilzapping is the new technique of using bacteria to **get rid of oil spills.**

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Bureau of Police Research and Development Foundation Day

Source: PIB

Recently, the Bureau of Police Research and Development (BPR&D) celebrated its **54th Foundation Day** in New Delhi, highlighting significant developments in criminal law and police modernization.

- New criminal laws were highlighted at the event. These laws are victim-centric and aim to deliver justice rather than mere punishment.
- The event honoured the recipients of the President's Medal for Distinguished Service (PSM) and the President's Medal for Meritorious Service (MSM) **for 2023 and 2024.**
- The BPR&D was established on 28th August 1970 under the Ministry of Home Affairs, with the mission to provide a new direction to the then-existing **Police Research and Advisory Council, founded in 1966.**
    - It aims to **address police issues, promote systematic studies**, and integrate science and technology into policing methods.
    - Initially, it comprised two divisions: **Research, Statistics, and Publication, and Development. In 1973, the Training Division** was added to enhance police competencies, followed by the establishment of the **Directorate of Forensic Sciences in 1983** and the inclusion of **Correctional Administration in 1995.**
    - The bureau is headed by an **Indian Police Service officer of the rank of Director General,** who is assisted by the Additional Director General.
- The **Special Projects Division of the BPR&D** addresses critical areas focusing on emerging issues such as **anti-human trafficking, gender concerns, and matters related to minority and SC/ST communities.**
- **BPR&D Publications:** Indian Police Journal, Data on Police Organisations and Sajag Bharat & Vigilant India Magazine.

Read more...

World Coconut Day 2024

Source: PIB

World Coconut Day (WCD), observed annually on September 2nd, emphasizes the importance of coconuts in our lives and promotes sustainable farming practices.

- The day is dedicated **to raising awareness** about the various **uses of coconuts** and encouraging their global consumption.

- **Theme of WCD 2024: "Coconut for a Circular Economy: Building Partnership for Maximum Value."**
- World Coconut Day, first observed in 2009, was established by the International Coconut Community, a **UNESCAP** intergovernmental organization.
    - **The ICC, representing 21 coconut-producing countries,** established September 2nd for World Coconut Day to mark its 1969 founding and **India is a founding member.**
    - The ICC Secretariat is based in **Jakarta, Indonesia.**
    - **ICC** till 2018 was known as the Asian and Pacific Coconut Community.
- **Coconut Benefits:** Coconuts promote cardiovascular health, support red blood cell production, manage diabetes, and offer antioxidant protection.
    - They aid in skin health, digestion, hydration, and overall well-being due to their rich nutrient content.
- **Coconut Development Board (CDB) of India**: A statutory body established under the Ministry of Agriculture, **to enhance coconut cultivation and industr**y through improved productivity and product diversification.
    - The top coconut producing states in India are **Kerala, Karnataka, and Tamil Nadu.**
    - The total coconut production in India is 20,535.88 million nuts (2022-23).

Read More: CPCRI Introduces New Varieties for Coconut and Cocoa Cultivation.
