



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

CHITTORGARH FORT

The Supreme Court of India has banned the mining of limestone by blasting or using explosives within a five-kilometre radius of the compound wall of Chittorgarh Fort in Rajasthan.

15 JAN - 20 JAN 2024

WEEKLY CURRENT AFFAIRS

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GENERAL STUDIES – 2

Topics: Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.

1. SC DECISION IN DELHI'S CHIEF SECRETARY'S CASE

Context:

The Supreme Court has **permitted a six-month extension to Delhi's Chief Secretary Naresh Kumar**, despite serious charges of **corruption and favouritism against him**.

What is the Issue?

The ongoing issue involves a **constitutional and political debate over the distribution of powers between the elected government of Delhi and the Lieutenant Governor (LG)**. It particularly revolves around the extension of the Chief Secretary's tenure, with conflicts arising from notifications, judicial decisions, and legislative actions.

More on the Issue:

Aspect	Information
Unique Status of National Capital Territory of Delhi	NCT of Delhi is unique, serving as the seat of both the central and Delhi governments . Special provisions ensure cooperation and coordination between them.
Constitutional Head	The Lieutenant Governor (LG) is the constitutional head , representing the President in the NCT of Delhi.
Jurisdiction of LG	Certain subjects like police, public order, and landfall are under LG's jurisdiction, not the elected government of Delhi.
Powers Distribution Debate	Powers and responsibilities between the elected government and LG have been a constitutional and political debate .
Ongoing Tussle	The conflict involves the extension of the Chief Secretary's tenure .
2015 Notification	In 2015, the central government added Entry 41 to Article 239 AA(3(a)) , granting the Delhi LG authority over services, public order, police, and land. The notification specified that the Delhi government couldn't legislate on Entry 41 .

SC Invalidation (2023)	In the 2023 case of the Government of NCT of Delhi v. Union of India , the Supreme Court affirmed Delhi's legislative and executive power over administrative services , except for public order, police, and land. The judgment emphasized the "triple chain of accountability" in representative democracy, stressing civil servants' accountability to the cabinet, the cabinet's accountability to the legislature , and the legislature's periodic accountability to the electorate. Severing this chain undermines the core constitutional principle of representative government .
Central Government's Response	Following the Supreme Court's decision , the Central Government responded by issuing the Government of NCT of Delhi (Amendment) Ordinance to overturn the verdict . The Delhi Government challenged the ordinance in the Supreme Court, leading to the matter being referred to a Constitution Bench. Meanwhile, the Parliament enacted the Government of National Capital Territory of Delhi (Amendment) Act, 2023 , granting overriding powers to the centre in Delhi's administration.
SC judgement (2024)	The judgement to extend the Chief Secretary's tenure by six months reflects this central government authority.
Issues with the Government of NCT of Delhi Act, 2023	The Government of NCT of Delhi Act, 2023, raises critical issues centred on undermining democracy and violating constitutional principles. It erodes the foundations of representative democracy by diminishing the elected Delhi government's authority over services and rendering the roles of the Chief Minister and council of ministers symbolic, as they can be overruled by bureaucrats ultimately accountable to the Lieutenant Governor and the Centre This Act contradicts a Supreme Court judgment affirming the Delhi government's legislative and executive powers, excluding public order, police, and land matters, and contravenes Article 239AA , which envisions a harmonious relationship between the Centre and the Delhi government. Act infringes upon the constitutional principle of federalism , a fundamental feature, by encroaching upon the domain of the States.

Concerns regarding the recent SC judgement:

1. Firstly, it **deviates from constitutional logic and past wisdom**, questioning the Court's evolving stance on constitutional matters.
2. **The selective application of rules for the Chief Secretary**, exempting him from the government's recommendation, raises doubts about the Court's consistency.
3. **Conflict of interest allegations against the Chief Secretary** and the criteria for tenure extension are not adequately addressed, casting uncertainty on the extension's legitimacy.
4. **The Court's failure to recognize the breakdown in accountability** and neglect of the Chief Secretary's involvement in multiple subjects under the Delhi government's competence are significant oversights.

The way forward: Cooperative federalism

- **Proper power balance required:** A diverse and large country like India requires a proper balance between the **pillars of federalism**, i.e., the autonomy of states, national integration, centralisation, decentralisation, nationalisation, and regionalisation.
- **Basic structure:** The **federal nature of the Constitution** is its basic feature and cannot be altered, thus, the stakeholders wielding power intend to protect the federal feature of our Constitution.
- **Distribution of powers:** The Constitution provides States with the power to function independently within the area transcribed by the Constitution. The Union and the States are meant to operate within their assigned legislative domains. The States are not **subservient to the Union**.
 - The **legislative domain of the States is exclusive**, and cannot be interfered with by the Union.
- **Inter-governmental institutions:** Various inter-governmental institutions facilitate cooperation and coordination between the Union and the states. The **Inter-State Council, NITI Aayog, and Finance Commission are** examples of such institutions that provide a platform for dialogue, consultation, and resolution of disputes.
- **Balancing national and regional interests:** By operating within constitutional boundaries, the Union ensures a delicate balance between national and regional aspirations.
 - It prevents the domination of the central government and safeguards the rights and interests of states, contributing to a more inclusive and equitable governance structure.
- **Role of the Supreme Court:** The Supreme Court of India plays a crucial role in **interpreting the Constitution**, resolving disputes between the Union and states, and maintaining the **balance of power**. It acts as a **neutral arbiter**, ensuring that both the Union

and states operate within the constitutional boundaries and adhere to the **principles of cooperative federalism**.

Conclusion:

The way forward involves the **formation of an expert committee comprising legal, constitutional, and administrative experts**. This committee should thoroughly analyze legal and administrative aspects, review precedents, and propose practical solutions to uphold democratic principles and maintain the delicate balance of power.

Insta Links:

[Delhi Government Case Vs LG](#)

Mains Links:

Q. Discuss the constitutional intricacies surrounding the Government of National Capital Territory of Delhi (Amendment) Act, 2023, and its implications on the relationship between the elected government of Delhi and the central government. (15M)

2. COMPETITION COMMISSION OF INDIA (CCI) ROLE

Context:

The **Competition Commission of India (CCI)** plays a crucial role in ensuring fair competition amidst India's rapid technological and economic changes.

What is CCI?

The Competition Commission of India (CCI) is a statutory and quasi-judicial body working under the **Ministry of Corporate Affairs**. It was established under **the Competition Act, 2002 for the administration, implementation and enforcement of the Act, and was duly constituted in March 2009**.

Objectives:

1. Ensure markets **benefit consumers**.
2. Implement competition policies for **efficient resource utilization**.
3. **Foster fair and healthy competition** for inclusive economic growth.
4. **Ensure alignment of sectoral regulatory laws** with competition law.

Functions:

1. **Investigate negative** effects on competition.
2. **Regulate mergers** to prevent market capture.
3. **Eliminate anti-competitive practices** and regulate combinations.
4. **Undertake competition advocacy**, create public awareness, and provide training.
5. **Provide opinions on competition** issues referred by

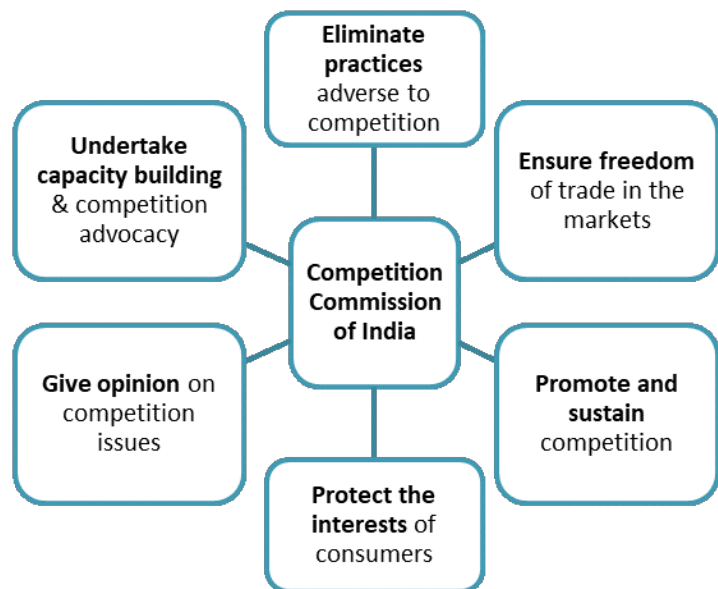
statutory authorities.

The role of the competition commission to regulate and achieve the policy goals of competition

- It guarantees that **no enterprise abuses their ‘dominant position’** through the control of supply, manipulating purchase prices, or adopting practices that deny market access to other competing firms
 - **For example - It imposed penalties on the BCCI for the abuse of dominant position.** - CCI imposed a penalty of 522 million (US\$7.6 million) on the BCCI in 2013 for misusing its dominant position.
- **Secure the interest of consumers and ensure that their welfare is not compromised.**
 - **For example –It played active role in preventing cartelization in the telecom sector.** – CCI ordered a probe into the functioning of Cellular Operators Association of India (COAI) following a complaint filed by Reliance Jio against the cartelization by its rivals Bharti Airtel, Vodafone India and Idea cellular.
- **Ensures that foreign companies abide by the country’s competition laws.**
 - **For example - It ordered for an anti-trust probe against Google- for abusing its dominant position with Android to block market rivals.**
- **Prevent cartelization**
 - **For example - It has prevented the cartelization of cement companies.** CCI imposed a fine of **63.07** billion (US\$910 million) on 11 cement companies for cartelisation in June 2012.
- Undertake competition advocacy, create public awareness and impart training on competition issues.
- Ensure smooth alignment of sectoral regulatory laws and competition laws.
- It has **ensured that there is proactive engagement with all stakeholders**, including consumers, industry, government and international jurisdictions.

❖ The recent **The Competition (Amendment) Bill, 2022 and its increased efficiency** – It has been introduced to improve regulatory set-up by **increasing the CCI’s accountability**, giving it flexibility and enforcement efficiency.

- **Key changes made in the bill**
 - **Increasing transparency and strengthening the accountability:**
 - **A board with part-time members** to supervise CCI activities.
 - CCI to mandatorily **issue penalty guidelines** and give reasons in case of any divergence.
 - **Enforcement efficiency**
 - CCI could engage in structured negotiations with parties and arrive at mutually-workable solutions without having to go through lengthy formal proceedings.
- **Limitations:**
 - The bill does little to **address competition concerns in digital markets.**
 - e.g., mergers concern in digital markets between entities that **do not have significant assets or turnover**, but are still very significant (such as Facebook-WhatsApp).
 - **No effective clause for regulating anti-competitive** conduct by digital platform.



For more on the bill: [Click Here](#)

Initiatives Taken by CCI to Address New-age Challenges:

Initiatives	Description
Streamlining Processes	CCI has enhanced the efficiency of investigation and decision-making processes , resulting in reduced times for investigations and decisions, ultimately improving overall market efficiency.
Addressing Digital Economy Challenges	CCI is concentrating on scrutinizing practices such as predatory pricing and data monopolisation employed by tech giants in the digital economy to ensure fair competition and prevent market distortions.

Regulatory Framework Evolution	CCI is continuously updating its regulatory framework to remain robust and flexible , aligning with emerging market dynamics and preparing for potential future challenges.
International Cooperation	CCI actively collaborates with global entities, engaging in knowledge-sharing initiatives and working towards harmonizing regulations to ensure effective enforcement in the international context.

Conclusion

Competition commission of India should **enhance its efforts and reach to the technological nuances of the new digital era** and ensure whether these markets are being fairly, effectively, and transparently used for the benefit of consumers.

Insta Links:

- [Competition law amendments: Of penalties and misses](#)

Topics: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

3. REGULATING INDIA'S ONLINE GAMING INDUSTRY

Context:

The [article](#) emphasizes the **need for robust regulation in India's online gaming** industry due to emerging market failures, including concerns about addiction, mental health, financial fraud, and national security issues.

What is Online gaming?

It refers to **video games/mobile games** that are played over the internet through various devices. E.g., multiplayer online battle arena (MOBA) games, first-person shooter (FPS) games, massively multiplayer online role-playing games (MMORPGs), and many others.

Types of online gaming:

1. **e-sports** (well-organized electronic sports which include professional players),
2. Fantasy sports
3. **Casual games:** these can be either skill-based (mental skill) or chance-based (based on a random activity like a roll of a dice) online games.

Issues with Online Gaming:

Issues	Description
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Addiction	Online gaming addiction can lead to physical and psychological harm , as well as interfere with daily life activities. Gambling addiction: Online gambling games can lead to addiction and financial problems.
Cyberbullying	Online gaming can involve communication with other players through chat or voice features, which can lead to cyberbullying and harassment .
Security risks	Online gaming platforms are at risk of cyber-attacks and data breaches , which can result in compromised personal and financial information.
Inappropriate content	It can contain violent, sexual, or other inappropriate content that is not suitable for all ages.
Ethical Concerns	It can perpetuate negative stereotypes and biases , particularly towards marginalized groups; In-game purchases can lead to overspending or exploiting vulnerable individuals .
Cheating and hacking	It can be prone to cheating and hacking , which can ruin the gameplay experience for others.
Physical and health issues	Long periods of sitting and staring at a screen can cause physical health problems such as eyestrain, back pain, and carpal tunnel syndrome .
Social isolation	Excessive online gaming can lead to social isolation and a lack of face-to-face communication with others.
Loss of Tax revenue	The growth of illegal offshore gambling markets is identified as a major challenge, leading to potential harm to users and substantial losses in tax revenue .

Ministry of Electronics and IT (MeitY) has released the Draft Rules for Online Gaming (as an amendment to the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**)

Provisions	Description
Self-Regulatory Body	Online gaming companies must register with a self-regulatory body . The body must have a board of directors with five members from diverse fields, including online gaming, public policy, IT, psychology, and medicine .
Due Diligence	Online gaming companies must undertake additional due diligence , including KYC of users, transparent withdrawal and refund of money, and a fair distribution of winnings.

Random Number Generation Certificate	Gaming companies must secure a <u>Random Number Generation Certificate</u> , typically used for card games, to ensure that game outputs are statistically random and unpredictable.
Restrictions on Betting	Online gaming companies <u>will not be allowed to engage in betting on the outcome of games.</u>
Compliance	Online gaming platforms <u>must appoint a compliance officer</u> , a nodal officer, and a grievance officer.

Other regulations:

- State subject:** Online gaming so far has been a state subject, but state governments are finding it extremely difficult to enforce certain rules like **geo-blocking certain apps or websites within the territory of their state.**
- Tamil Nadu Prohibition of Online Gambling and Regulation of Online Games Bill, 2022** prohibits all forms of online gambling and allows for the regulation of online games that are not considered gambling.
 - The bill prohibits minors from participating in online games and prohibits the promotion of online gambling** and gaming through advertising or other means.
- Karnataka government** had previously **banned all forms of online gaming** where the transfer of money is involved
- GST:** A proposed **28% Goods and Services Tax** that may soon be imposed on deposits

Case study: UK Model for Regulation
 The UK model for online gaming regulation involves a **centralized government regulator that enforces strict measures to ensure player protection.** Quarterly reports on regulatory effects are published, **imposing significant fines** on operators violating player protection requirements. This strict enforcement, coupled with harm reduction efforts, has led to a **decline in disordered gaming and risky behaviour**

For: Voluntary Code of Ethics by the Online Gaming Industry: [Click here](#)

Way forward:

Clear and consistent regulations, responsible gaming measures, industry self-regulation, public awareness campaigns, and collaboration between industry and government can all help to create a sustainable and responsible online gaming industry in India.

Conclusion:

The online gaming industry in India can continue to grow and provide entertainment and employment opportunities while also protecting players and promoting responsible gaming

practices

Insta Links

[Online gaming](#)

Mains Links:

Q. “Internet gaming has turned worse than drugs”. Do you agree? Critically examine the statement in light of the announcement made by the World Health Organization (WHO) to include “gaming disorder” as a mental health condition. (250 words)

Q. How does gaming addiction, impact children? Do you think China’s recent imposition of a three-hour limit on gaming, is a good way to tackle it? (150 words)

GENERAL STUDIES – 3

Topics: Indian Economy and issues relating to planning, mobilization of resources, growth, development, and employment.

1. APPRAISAL OF IBC

Context:

The [article](#) assesses the **effectiveness of India’s Insolvency and Bankruptcy Code (IBC), enacted in 2016,** in resolving financial distress and enhancing economic well-being. The IBC aims to address Non-performing Assets (NPAs) and debt defaults.

What is IBC?

The Insolvency and Bankruptcy Code (IBC), enacted in 2016, is a comprehensive legal framework in India that replaced existing laws related to insolvency and bankruptcy. It provides a uniform procedure for resolving financial distress, **addressing Non-performing Assets (NPAs), and managing debt defaults.** The primary goal of the IBC is to streamline and expedite the resolution of insolvency and bankruptcy disputes in a time-bound manner.

IBC and its performance

- Initiated cultural shift:** The IBC has initiated a cultural shift in the dynamics between lender and borrower, promoter and creditor. It played a critical role in reshaping the behaviour of borrowers.
 - Before the enactment of the IBC, the recovery mechanisms available to lenders were **through Lok Adalat, the Debt Recovery Tribunal and the SARFAESI Act.**
 - While the earlier mechanisms resulted in a **low average recovery of 23%, the recoveries have risen to 43% under the IBC regime.**

2. **Reduction in NPAs:** IBC significantly reduced banks' NPA rate, dropping from **14.8%** (September 2018) to 3.2% (September 2023).
3. **Increase in Bank Profits:** Banks experienced a turnaround, achieving a historic profit of €2.63 trillion in 2022-23, compared to a loss in 2017-18.
4. **Improvement in Corporate Balance Sheets:** Post-IBC, firms demonstrated enhanced performance with robust balance sheets, improved leverage management, and an interest coverage ratio exceeding 3.5.
5. **Enhancement in Corporate Governance:** IBC led to improved corporate governance, evidenced by a reduction in related party transactions, as highlighted in a post-IBC study.
6. **Global Ranking Improvement:** India's global insolvency resolution ranking improved significantly, moving from **136th to 52nd** within the first three years of IBC implementation.
 - a. India won the **Global Restructuring Review award** for the most improved jurisdiction in 2018.
 - b. **An IMF-World Bank study in January 2018** observed that India is moving towards a new state-of-the-art bankruptcy regime.
7. **Stability in financial systems:** Recovery through the IBC was about Rs 70,000 crore in fiscal 2019 twice the amount recovered through other resolution mechanisms in fiscal year 2018.
 - a. The recovery rate is also twice the liquidation value for these 94 cases, which underscores the value maximization possible through the IBC process.

Issues with the IBC

1. **Overburden NCLT benches:** The number of NCLT benches is 16 and the total number of bench members is only 20
2. **Inefficient Time Management:** IBC's resolution processes are prolonged, averaging 867 days, far beyond the intended 180 days.
3. **Gap in Asset Value Maximization:** Resolutions achieve only 86% of fair company value, indicating a shortfall in desired value maximization.
4. **High Incidence of Liquidation:** IBC results in more liquidations than rescues, especially impacting already sick or defunct companies. Many liquidated firms had assets valued at about 5% of their claims.
5. **Methodological Issues in Appraisal:** Some appraisals of IBC's performance use flawed methodologies, focusing solely on recovery rates and overlooking factors like realizations from equity holdings or guarantor resolution.
6. **The low approval rate of resolution plans:** According to the data from the Insolvency and Bankruptcy

Board of India (IBBI), of the 2,542 corporate insolvency cases filed between December 1, 2016, and September 30, 2019, about 156 have ended in approval of resolution plans — a mere 15%.

Way forward

The insolvency litigation process should focus on **minimizing duration and case volumes to alleviate uncertainties**. In **France, reforms in 2021** extended the process to ensure full judicial resolution of specific disputes before confirming a restructuring plan. Empowering the insolvency professional or assigning a supervisory judge, as done in France, can grant exclusive authority for vital settlements with insolvent companies, some requiring court ratification.

Conclusion

The IBC is a crucial structural reform, which if implemented effectively and in a time-bound manner can produce major gains for the corporate sector and the economy as a whole.

Prelims Links:

Q. Which of the following statements best describes the term 'Scheme for Sustainable Structuring of Stressed Assets (S4A)', recently seen in the news? (UPSC 2017)

- (a) It is a procedure for considering the ecological costs of developmental schemes formulated by the Government.
- (b) It is a scheme of RBI for reworking the financial structure of big corporate entities facing genuine difficulties.
- (c) It is a disinvestment plan of the Government regarding Central Public Sector Undertakings.
- (d) It is an important provision in 'The Insolvency and Bankruptcy Code' recently implemented by the Government.

Ans: B

[Topics: Major crops cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.](#)

2. PRODUCTION OF PULSES IN INDIA

Context:

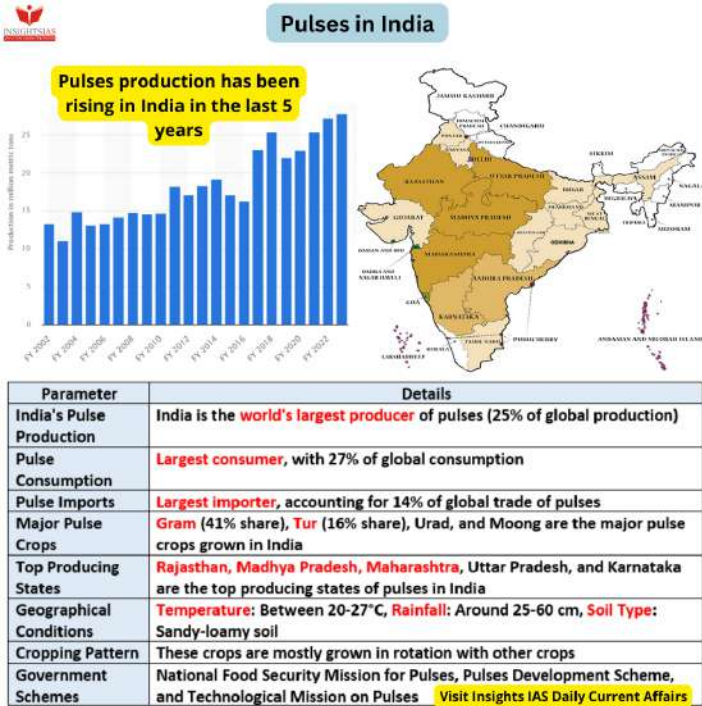
India is poised to become the **world's largest producer of lentils (masoor)** in the 2023-24 crop year due to increased acreage.

Recent facts:

1. India's **pulse imports** have **significantly decreased from about 6 million tonnes in 2016-17 to about 2 million tonnes in 2022-23**. The decline is attributed to reduced imports **of yellow peas and chickpeas over the past decade**, primarily influenced by high import duties and procurement policies.
2. The government's incentives to boost pulse cultivation have led to a higher lentil crop area, reaching

over 19 lakh hectares by January 2024.

- The government **has increased the Minimum Support Price (MSP)** to further support farmers
- The government recently stated its objective of **achieving self-sufficiency in pulses by the end of 2027**
- Despite the current increase in production, the **past three decades have seen stagnation in acreage, production, and productivity of pulses** across the country



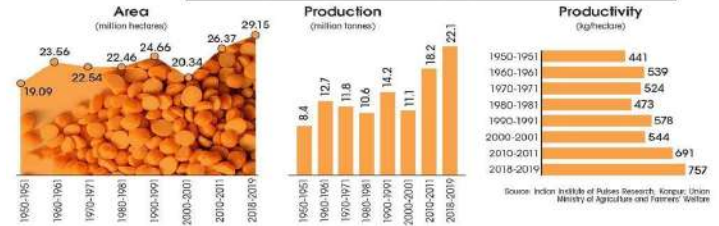
Importance of pulse production for India:

- Pulses are **rich in proteins** and found to be the **main source of protein to vegetarian people** of India so it is the second important constituent of the Indian diet after cereals.
- Pulses being **legumes fix atmospheric nitrogen** into the soil. Being leguminous crops, all these crops except Arhar **help in restoring soil fertility**.
- These are mostly **grown in rotation with other crops**
- They **add organic matter** into the soil in the form of leaf mould.
- They supply additional fodder for cattle. Some pulse crops like Gram, Lobia, Urad bean & Moong bean are fed to **animals as green fodder**.
- They provide raw materials to various industries. **Ex. Dal industry, Roasted grain industry, Papad industry, etc.**

Fig: Shows the stagnation of Pulses in Area, Production, and Productivity

Stagnant forever

The increase in area under cultivation, production and productivity of pulses has been extremely slow



The major factors responsible for the stagnation in Pulses are:

Policy factors:

- Introduction of Green Revolution:** A report "**Pulses in India: Retrospect and Prospects**" (2017) a report published by the Agriculture Ministry, says **farmers in the Gangetic plains quit pulses for other crops around 1990** because of the **improvement in irrigation facilities**. The breakthrough via **HYVs in cereals** has been accompanied by a loss of acreage under pulses to cereals, and consequently a sharp decline in the total production of pulses.
- Skewed implementation of agriculture reforms:** Due to a number of economic and political compulsions, the strategies for agricultural growth remained anxious with the aim of achieving rapid increases in food grain production by concentrating the resources and efforts on the relatively better-endowed areas and strata of cultivators.

Demand factor:

- Cobweb phenomenon:** Shrinking demand due to a surge in prices leads to farmers diverting to other crops in the next agriculture seasons (thereby reducing production further), which leads to a vicious cycle of high price, low demand, and low production.

Infrastructure factors:

- Lack of Infrastructure:** Inadequate **Warehousing Facilities & Collateral Finance**.
- Uncertain monsoons and insufficient irrigation amenities**

Other factors:

- Pest attack:** Pulses are highly prone to damage by **insect pests, diseases, nematodes, and weeds**.
 - Damage to pulses by **nilgais and other stray animals** is a big factor in Uttar Pradesh for farmers moving to other crops.
- Low seed rate** resulting in **poor crop stands**.
- Imbalance of use of fertilizers:** Unstable use of fertilizers is one of the important reasons for low productivity and depleting soil fertility. The average N: P: K ratio in the past two decades has been **7:3:1 against the recommended 4:2:1**.
- Inadequate MSP by the government** for pulses (compared to cereals)

Government Initiatives:

- Providing Minimum Support Prices (MSP)** to farm-

ers through:

- a. National Agricultural Cooperative Marketing Federation of India (NAFED)
- b. Small Farmers Agri Consortium (SFAC)
2. [National Food Security Mission \(NFSM\)](#)-Pulses.
3. ICAR's Role in [Research and Variety Development](#).
4. [Pradhan Mantri Annadata Aay SanraksHan Abhiyan](#) (PM-AASHA) Scheme.

Measures that can be taken to improve pulse production:

Short-term Strategies

- **Strengthening seed delivery system:** Availability of quality seeds of already-developed improved varieties would increase the pulse production by at least 15–20 per cent.
 - In addition to public seed corporations, **seed societies and private companies** should be involved in seed production.
- **Ensuring remunerative prices:** The MSP for pulses should be fixed considering not only the cost of its cultivation and parity with the competing crops but also considering the **yield variability in pulses and externalities** it brings to the system in **terms of nitrogen saving and subsidy saved on fertilizer and irrigation**.
- **Effective procurement:** Bring the procurement centres to the doorstep of the growers, particularly during harvest season.
- **Skilling of pulse growers:** India's 600+ **Krishi Vigyan Kendras (KVKs)** can be used for skilling pulse growers on modern production practices—**from sowing to harvesting**.
- **Efficient crop insurance mechanism:** Only 20 per cent of farmers subscribe to crop insurance. Providing efficient crop insurance would give sufficient confidence to these farmers to **combat the situation of crop failure**.

Medium-term Strategies

- **Expansion of area under pulses:** Fallow lands or reclaimed wastelands can be identified and targeted in each state to bring it under pulse crops.
- **Farmers' producer organization (FPO) on pulses:** It will integrate **the backward and forward linkages** and will help the farmers in reducing the cost of production substantially.
- **Customization and development of farm equipment:** Developing **small-size multi-crop harvesting farm machines and other farm equipment for plant protection**
 - New age **app-based custom hiring services for farm equipment** can be quite useful, particularly for smallholders in doing the basic farm operations timely and economically.
 - **Case study:** Private Tractor Company, like **Mahindra and Mahindra**, has started on a pilot basis **'on-demand farm equipment rental start-up, Trringo in Karnataka state**, through which farmers can book tractors by

the hour via a phone call.

- **Setting up of storage and warehousing in rural areas**
- **Foresight for international trade:** Develop a predictive tool to determine the demand and supply of pulses in forthcoming seasons to plan in advance to import or export pulses in the international market.

Long-term Strategies

- **Developing short-duration and pest- and disease-resistant cultivars:** Infestation of pests and diseases such as pod borer, wilt, and so on and variation in rainfall and temperature bring huge risks to pulses cultivation.
 - **The development of suitable cultivars specific to production regions will be very important to break the yield barrier**, as has happened in the southern region, particularly in the case of chickpeas.
- **Integrating pulses into the public distribution system:** Compulsory inclusion of pulses in the existing schemes such as the **mid-day meal scheme or public distribution system (PDS) shall be ensured** so that the minimum pulses consumption by poor households is maintained even during the scarcity in pulses production.

Conclusion:

Thus there is a need for a **holistic approach to enhance the production and productivity of pulses crops**. Prominently good agronomic practices with their different components for excelling production under changing climatic scenarios are the need of the hour for the protein security of the nation esp. for the poor.

Insta Links:

- [Pulses in India](#)

Mains Link:

Q.Mention the advantages of the cultivation of pulses because of which the year 2016 was declared as the International Year of Pulses by United Nations. (UPSC 2017)

Prelims Links:

Q. With reference to pulse production in India, consider the following statements: (UPSC 2020)

1. Black gram can be cultivated as both kharif and rabi crop.
2. Green gram alone accounts for nearly half of pulse production.
3. In the last three decades, while the production of kharif pulses has increased, the production of rabi pulses has decreased.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 2 only
- (d) 1, 2 and 3

Ans: A

Topics: Science and Technology- developments and their applications and effects in everyday life Achievements of Indians in science & technology; indigenization of technology and developing new technology.

3. SCIENTIFIC COMMUNICATION IN INDIA

Context:

The [article](#) discusses the importance of effective science communication in India, citing examples like the Chandrayaan-3 mission and COVID-19 information dissemination.

What is Scientific communication?

Science communication involves **conveying scientific information to diverse audiences** in an understandable and engaging manner. It encompasses various forms, **including journalism, public talks, social media, and educational outreach**. The goal is to bridge the gap between scientists and the public, promoting understanding of scientific concepts and their relevance.

Example: The communication of **Chandrayaan-3, India’s lunar exploration mission**, serves as an example of effective science communication. Through live broadcasts and updates, people across India were informed and engaged in the progress and scientific findings of the mission, contributing to **widespread understanding and discourse**.

Role of Science Communication for Society in India

Role	Example
Increasing Scientific Awareness:	Publicizing achievements like India’s Mars Orbiter Mission to enhance understanding of space exploration.
Addressing Public Health Issues:	Disseminating accurate information during the COVID-19 pandemic to combat misinformation and promote vaccination.
Fostering Environmental Consciousness:	Campaigns explaining the importance of conservation and sustainable living for a cleaner environment.
Bridging the Gap with Researchers:	Organizing public lectures, workshops, or online forums where scientists interact with the community.
Promoting Scientific Temper:	Educational programs, science festivals, and initiatives promoting scientific inquiry among students.
Government Policies and Decision-Making:	Advocacy for policies based on scientific research in areas like healthcare, environment, and technology.

Encouraging Innovation and Research:	Publicizing breakthroughs in research to garner support and funding for further scientific exploration.
Building Trust in Scientific Institutions:	Regularly sharing updates, findings, and insights from scientific institutions to build credibility.
Empowering Decision-Making:	Initiatives explaining the science behind everyday choices, from healthcare to technology use.
Crisis Management and Risk Communication:	Timely and accurate communication during natural disasters or health emergencies to guide the public on safety measures.

Government efforts:

Government-Led Efforts	Details
Publications & Information Directorate (PID)	Established in 1951 under CSIR. Published national science magazines, including Vigyan Pragati (Hindi), Science Reporter (English), and Science Ki Duniya (Urdu), for disseminating scientific knowledge.
Birla Industrial and Technological Museum (1959)	Established in 1959 with a focus on defining India’s scientific heritage and promoting science education.
42nd Amendment to the Constitution (1976)	Introduced Article 51 A (h) in 1976 , emphasizing the duty of every citizen to develop a scientific temper, humanism, and the spirit of enquiry and reform.
National Council for Science and Technology Communication (NCSTC)	Formed during the sixth Five Year Plan (1980-1985) with a focus on the popularization of science .
Vigyan Prasar (1989)	An autonomous organization set up in 1989 by the Department of Science and Technology to popularize science.
CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR, 2021)	Established in 2021, merging two previous institutions, to continue the promotion of science communication.
Active Engagement by National Science Funding Agencies and Research Organizations	Ongoing efforts by agencies and organizations to actively engage in science communication through press releases, social media campaigns, exhibitions, and lectures.

Other initiatives:

Project	Description
Indian Sign Language AstroLab	Equipped with 65 pieces of equipment, including a large telescope and audiovisual aids , the Astro-Lab provides virtual access to educational videos in Indian sign language, promoting inclusivity and accessibility.
CSIR-NPL (Council of Scientific and Industrial Research - National Physical Laboratory)	Conducts multidisciplinary R&D for quantum standards, and technology development, and provides training under “Make in India” and “Skill India” programs.
One Week - One Lab Campaign	A program by CSIR-NPL to create awareness about technologies and services, provide solutions to societal problems and develop scientific temperament among students. Over 180 schools in Delhi-NCR have been exposed to NPL labs, and more schools will be included in future interactions.
Science and Heritage Research Initiative (SHRI)	This initiative can potentially increase demand for the traditional art of Tirunelveli, Tamil Nadu.
National Initiative for Developing and Harnessing Innovations (NIDHI)	An end-to-end plan for start-ups aimed at doubling the number of incubators and start-ups in five years.
National Start-up Awards	Recognizes and rewards outstanding start-ups and ecosystem enablers contributing to economic dynamism by stimulating innovation and competition.

To enhance science communication in India, key measures include:

- Formal Education and Training:** Introduce master’s and doctoral programs in science communication to cultivate skilled communicators attuned to India’s diverse contexts.
- Integration with Scientific Process:** Encourage scientists to actively participate in science communication, incorporating it into research and rewarding their efforts.
- Large-Scale Strategy:** Establish a professional organization collaborating with government departments, stakeholders, and experts to create comprehensive science communication frameworks spanning various disciplines, media formats, and demographic groups.

Conclusion:

Science communication is crucial for **advancing scientific literacy, public engagement, and informed decision-making** in India. Addressing current gaps and adopting a forward-looking approach can build a robust science communication eco-

system, bridging the gap between science and society and propelling scientific progress.

Insta links:

- [Science & Technology](#)

Mains Links:

Q. What is India’s plan to have its own space station and how will it benefit our space programme? (UPSC 2019)

Prelims Links:
Q Consider the following statements: (UPSC 2016)
The Mangalyaan launched by ISRO

- is also called the Mars Orbiter Mission
- made India the second country to have a spacecraft orbit the Mars after USA
- made India the only country to be successful in making its spacecraft orbit Mars in its very first attempt

Which of the statements given above is/is/are correct?

(a) 1 only
 (b) 2 and 3 only
 (c) 1 and 3 only
 (d) 1, 2 and 3

Ans: C

CONTENT FOR MAINS ENRICHMENT

1. WOMEN COMMANDOES IN MAOIST REGION

Context:

In the [Dandakaranya forest near Gadchiroli district, Maharashtra](#), 11 women officers from the [Maharashtra police](#), informally called **commandos**, stand ready at an outpost near the **Maoist frontier**. Trained in **jungle warfare and weaponry**, they are part of a **200-strong security force** facing the Maoist headquarters in the ‘unknown hills.’

Passionate about their role, these women commandos are safeguarding a ballistic-proof outpost established within 24 hours in November. This groundbreaking move aims to transform the region, previously labelled a **‘Liberated Zone,’** bringing development and security to the people in surrounding villages.

Values: The article shows the values of Dedication and Service, Courage and Determination, and Community Impact

2. STEEL SLAG ROAD

Context:

India’s **first National Highway Steel Slag Road section on NH-66**, connecting Mumbai to Goa, has been inaugurated, showcasing a **pioneering eco-friendly initiative**.

The ground-breaking technology, **developed by CSIR-CRRI**,

transforms waste from the steel industry into a valuable resource for constructing robust and environmentally friendly national highways. The bituminous steel slag road, constructed with **28% less thickness** than conventional roads, demonstrates **cost-efficiency and enhanced durability**.

Usage: The example highlights the **values of sustainability, innovation, and collaboration**. Key values include **efficiency, cost-effectiveness, and durability** in road construction.

3. THE BUDDHIST VOICE OF GLOBAL SOUTH

Context:

The vice president addressed the **12th General Assembly of the Asian Buddhist Conference for Peace (ABCP) in New Delhi**. Emphasizing India’s leadership role in the Global South, he highlighted the theme **“ABCP - The Buddhist Voice of Global South.”**

Teachings of Buddha:

Teachings	Current Relevance
Life brings sorrow; overcome desire	Promotes a simple, virtuous life between extreme austerity and luxury . Encourages a citizen-centric governance approach where the right speech, conduct, and livelihood can make administration more responsive and service-driven.
Four Noble Truths and Eight-Fold Path	Offers a path to the end of suffering, emphasizing the right views, aspirations, speech, action, livelihood, effort, mindfulness, and concentration . These principles are relevant in promoting scientific temper, mindfulness, and a spirit of inquiry in contemporary society.
Middle Path	Advocates a middle path between extreme lifestyles . Pertinent to sustainable development, it provides a solution to issues like consumerism, climate change, and corruption. Encourages a balanced approach to address societal challenges.
Pursuit of a just and egalitarian society	Promotes eliminating discrimination against vulnerable sections, fostering inter-faith harmony , and advocating for peace. Encourages a spirit of love towards all living beings and emphasizes the law of karma to curb wars, terrorism, extremism, and violence.
Welfare for All	Lord Buddha taught us, ‘भवतु सब्ब मंगलम्’ : which means blessings, compassion and welfare of all.

4. BAMBOO COMPOSITES

Context:

During the India International Science Festival (IISF) 2023, Know-How Technology on “Bamboo Composites” was transferred.

What are Bamboo Composites?

Bamboo composites are **industrial products developed using an environmentally friendly technique that involves processing bamboo**, a natural and versatile resource.

Bamboo, **declared as grass, matures in 3-4 years**, making it a rapid and sustainable source. The technology involves **cutting bamboo poles, splitting them, removing knots, treating them chemically for protection, converting them to fibrous form**, and finally, creating composite materials through compaction under heat and pressure. These composites resemble teak wood, offering durability, dimensional stability, high strength, fire resistance, and a natural appearance. They can be used in various applications, **including panel boards, beams, pillars, doors, and more**.

Usage: Such examples can be used in Essay/Environment Questions to show sustainable solutions, which can also help improve the income of bamboo farmers.

FACTS FOR PRELIMS

GS-1

1. HARVEST FESTIVAL: MAKAR SANKRANTI, PONGAL, LOHRI AND MORE

Context:

January 14 marks the significance and celebration of festivals such as **Makar Sankranti, Pongal, and Lohri**, which are **observed across India**.

- The festivals mark the transition of **seasons, symbolizing the end of winter and the onset of warmer months**.
- **Makar Sankranti and Pongal** are associated with the **northward journey of the sun (Uttarayan)**, signifying longer days and the **shift towards the Capricorn zodiac sign**.

Features:

- The **festivals follow the solar cycle** and are celebrated on almost the same day each year.
- Rituals include **bathing in sacred rivers**, offering **Navivedhya to the Sun god**, charity, Shraddha rituals, and breaking fast during Punya Kaal, with variations across regions.
- In **Tamil Nadu, the four-day Pongal festival** involves cleaning houses, decorating entrances, and celebrat-

- ing the toil of bulls on the third day.
- Special dishes like Pongal (rice mixed with boiled milk and sugar), lemon and tamarind rice, vadas, and Payasam are prepared.
- Various regional customs include **door-to-door exchanges of plates** containing sugarcane, sesame seeds, and jaggery, symbolizing sharing and spreading happiness.
- **Kite-flying occurs in Rajasthan and Gujarat, and sky lanterns are flown in the evening.**

2. SHANKARACHARYA

Context:

The **four Shankaracharyas, leaders of Hindu mathas** (monasteries) in **Dwarka, Joshimath, Puri, and Sringeri**, have decided **not to attend the inauguration of the Ram temple** in Ayodhya.

- The Shankaracharyas are heads of the mathas believed to **be founded by the eighth-century scholar Adi Shankara.**
- The mathas, **considered centres of knowledge, trace their lineage to Adi Shankara**, fostering Hindu traditions and philosophy.



Sri Ramanujacharya and Adi Shankaracharya

Context: Prime Minister has paid tributes to Jagadguru Adi Shankaracharya and Sri Ramanujacharya on their birth anniversaries.

	Adi Shankaracharya	Sri Ramanujacharya
Birth and Lifetime	Born in 788 CE in Kaladi, Kerala, and passed away in 820 CE 	Born in 1017 CE in Sriperumbudur, Tamil Nadu, and passed away in 1137 CE 
Philosophy	Advaita Vedanta (Non-Dualism)	Vishishtadvaita Vedanta (Qualified Non-Dualism)
Interpretation of Vedas	Argued that the ultimate reality is Brahman and that the universe is an illusion (Maya)	Argued that Brahman is the ultimate reality , but also that the universe is real and a manifestation of Brahman
Approach to God	Emphasized the importance of renunciation and meditation to realize the ultimate reality	Emphasized devotion (bhakti) to achieve union with the divine
Scriptures	Emphasized the importance of the Upanishads and the Brahma Sutras	Emphasized the importance of the Bhagavad Gita and the Divya Prabandham
Influence	Revived Hinduism and helped unify various philosophical schools of thought. Founded four mathas (monasteries) in India.	Popularized devotion to Vishnu and helped revive the Bhakti movement in India.
Key Works	Vivekachudamani, Upadesa Sahasri, and commentaries on the Upanishads, Bhagavad Gita, and Brahma Sutras	Sri Bhashya, Vedanta Sara, and commentary on the Bhagavad Gita
Legacy	His teachings have had a profound impact on Indian intellectual and spiritual life.	His teachings have had a significant impact on the development of the Bhakti movement and culture
Statue	A 12-foot statue of Adi Shankaracharya at Kedarnath (Uttarakhand)	Statue of Equality on the outskirts of Hyderabad, Telangana Visit Insights IAS Daily Current Affairs

3. VADNAGAR

Context:

A joint study led by the **Indian Institute of Technology (Kharagpur)** has uncovered evidence of a **human settlement in Vadnagar**, dating back to **800 BCE.**

- The study **indicates cultural continuity in Vadnagar after the Harappan collapse.**
- The **research spans 3,000 years**, revealing the **rise and fall of different kingdoms** and recurrent invasions **linked to changes in climate, such as rainfall**

or droughts.

- The findings challenge the notion of a **“Dark Age” and suggest a cultural continuity in India for the last 5,500 years.**
- The excavation at Vadnagar unveiled **artefacts, potteries, copper, gold, silver, iron objects, intricately designed bangles, and a Buddhist monastery.**

About Vadnagar:

Vadnagar is a **town and municipality in the Mehsana district of Gujarat, India.** Vadnagar’s ancient names include **Anarta-pura and Anandapura.**

Vadnagar is home to many popular places, including **Hat-keshwar Temple, Kirti Toran, and Sharmishtha Talav.**

Vadnagar and Modhera’s Sun Temple were recently added to the **UNESCO World Heritage Sites tentative list.**

4. KACHCHHI KHAREK

Context: **Kachchhi Kharek**, the **indigenous variety of dates from Kutch, Gujarat**, has been granted a **geographical indication (GI) tag** by the Controller General of Patents, Designs and Trade Marks (**CGPDT**) of India.

- This makes **Kachchhi Kharek the second fruit from Gujarat** to receive a GI tag, **following Gir kesar mango in 2011.**



5. INDIA METEOROLOGICAL DEPARTMENT

Context:

The India Meteorological Department (IMD) celebrated its **150th year of establishment and service to the nation.**

About India Meteorological Department:

- The India Meteorological Department (IMD) is the **primary government agency for meteorology and related topics.**
- It is responsible for **weather forecasting, seismology, and meteorological observations.**
- The IMD **was established in 1875 by the Government of India.** Its **parent organization is the Ministry of Earth Sciences.** The IMD’s subsidiaries include

the Regional Meteorological Centre, Chennai and the Indian Institute of Tropical Meteorology.

6. VEERABHADRA TEMPLE IN LEPAKSHI

Context:

The Prime Minister visited the Veerabhadra temple in Lepakshi, Andhra Pradesh, during his 11-day special ritual for the consecration of Lord Ram's idol at the Ayodhya Ram temple.

- Lepakshi holds significance in the Ramayana, and its name, meaning 'Rise, oh bird' in Telugu, is a tribute to Jatayu, the mythical bird who fought Ravan.
- According to the Ramayana, Jatayu fell wounded in Lepakshi after battling Ravan, and it is here that he informed Lord Ram about Sita's kidnapping.
- The temple is believed to have preserved the footprints of Goddess Sita.



About Lepakshi Temple:

The Veerabhadra Temple, also known as the Lepakshi Temple, is located in the Anantapur district of Andhra Pradesh.

The temple was built in 1533 by the Vijayanagara rulers. It is known for its architecture, which includes hanging pillars and cave chambers.

The temple is dedicated to Virabhadra, a fierce incarnation of Lord Shiva. The temple's architectural features are in the Vijayanagara style, with carvings and paintings on almost every exposed surface.

The main shrine is of Lord Shiva, and there are also shrines to Ganesha and Durga.

7. CHITTORGARH FORT

Context:

The Supreme Court of India has banned the mining of limestone by blasting or using explosives within a five-kilometre radius of the compound wall of Chittorgarh Fort in Rajasthan.

- It emphasized the threat to the fort's existence due to unscientific mineral exploitation and directed a multidisciplinary study of environmental pollution and its impact on structures.



About Chittorgarh Fort:

Chittorgarh Fort, also known as Chittod Fort, is a UNESCO World Heritage Site. It's located in the city of Chittorgarh, Rajasthan.

The fort was built in the 7th century by various Maurya rulers and is the largest fort in India.

8. GURUVAYUR TEMPLE

Context:

The Prime Minister visited the Sreekrishna Temple in Guruvayur, Thrissur district.



The Guruvayur Temple is a Hindu temple in Guruvayur, Kerala, India.

It is dedicated to Guruvayurappan, a form of Vishnu, also known as Krishna. The presiding deity is depicted in a standing posture with four hands holding Shankh, Sudarshana Chakra, Lotus and Mace. It is carved out of a stone named Patala Anjana.

In 1931-32, Sathyagraha was launched under Kelappan (Kerala Gandhi) to secure the entry of untouchables into the temple.

It led to the **Travancore Temple Entry Proclamation in 1936.**

9. TRADITIONAL BUFFALO FIGHT (MOH-JUJ)

Context:

The Assam Government **reinstated the traditional buffalo fight (Moh-Juj) after a nine-year hiatus**, following a Supreme Court ban on similar events in Tamil Nadu and Maharashtra.

The event, held in **Ahotguri, Nagaon district, aimed to revive Assam's cultural traditions**. The Supreme Court had previously outlawed such events but, in May of the previous year, **upheld amendments allowing traditional bull-fights** in certain states.

About Moh-Juj

It was **introduced by the 30th Ahom king Swargadeo Rudra Singha nearly 200 years ago** and is celebrated as a sport in **Ahatguri during Magh Bihu**, a significant harvest festival in Assam held in January–February. The buffalo fight tournaments in Ahatguri have been a tradition since 1972. The event is part of the cultural celebration of Magh Bihu.

About the wild buffalo (*Bubalus arnee*)

It primarily inhabits alluvial grasslands, marshes, swamps, and river valleys. It is listed as **"Endangered" on the IUCN Red List**, under Schedule I of the Wildlife Protection Act, 1972, and included in Appendix III of CITES.

About Prevention of Cruelty to Animals (PCA) Act, 1960:

An Act to **prevent the infliction of unnecessary pain or suffering on animals** and to amend the law relating to the prevention of cruelty to animals.

Animal Welfare Board of India vs A Nagaraja, (2014)

Case: The Supreme Court banned the use of bulls and bull-ocks in **"entertainment activities"** such as Jallikattu and bull-ock cart racing, among others. However, later jallikattu got an exemption from the Prevention of Cruelty to Animals Act (1960).

GS-2

1. RIGHT TO RESIDE

Context:

The **Delhi High Court** has ruled that a **foreigner cannot claim the right to reside in India under Article 19(1)(e) of the Constitution**, which grants all citizens the right to reside and settle in any part of India.

- The judgment came during the hearing of a habeas corpus petition filed by the uncle of **Azal Chakma, a suspected Bangladeshi national, alleging Chakma's**

illegal custody.

- The court emphasized that a **foreign national cannot assert the right to reside in India and referred to the Supreme Court's decision**, stating that the Indian government's power to expel foreigners is absolute and unlimited.

Article 19(1)(e) of the constitution grants the **right to reside and settle in any part of the territory of India** as a fundamental right under the Right to Freedom.

However, **Reasonable restrictions on this right** can be imposed by law- in the **interest of the general public**, or for the protection of **interest of any Scheduled Tribe**.

2. GUIDELINES FOR COACHING CENTRE

Context:

The **Ministry of Education** has sent to states/UTs for consideration guidelines for coaching centres.

Education comes under Concurrent List status, with coaching institutes falling under state/UT jurisdiction.

Need for Guidelines:

Regulation is deemed necessary due to **recent incidents, including fire-related deaths and suicides, coupled with concerns about methodologies and excessive fees**. The aim is to address misleading ads under the Consumer Protection Act, offer career guidance, and psychological counseling, and align with the **National Education Policy (2020)** emphasizing formative assessment over summative assessment to discourage a 'coaching culture.'

Key features of the Guidelines:

Guidelines	Details
Definition of Coaching	Tuition, instructions, or guidance in any branch of learning to more than 50 students, excluding certain activities.
Definition of Institution	School or any educational institution recognized or controlled by the State/UT Government.
Definition of Tutor	The person guiding or training students in any coaching centre, including those providing specialized tuition.
Definition of University	University established by or under a Central Act, a Provincial Act, or a State Act.
Registration of Coaching Center	Prior registration is required for maintaining a coaching centre. Existing centres must apply within three months.

For States	States/UTs were urged to Develop an Online Registration Portal for Coaching Centers
For Coaching Centers	
Fee and Infrastructure	Centres can charge fair fees, provide receipts , mention courses, and duration, and maintain basic infrastructure.
Fee Refund Clause	Refund the remaining fee within 10 days if a student leaves the course midway after paying the entire fee.
Basic Infrastructure and Study Hours	Allocate a minimum of one square meter per student , comply with fire safety, and limit study hours.
Timetable of Coachings	Class schedules should not overlap with regular school hours .
Rest Period	Mandatory weekly offs for both students and tutors.
Class Sizes	Maintain sizes for a healthy teacher-student ratio.
Qualification of tutor	No coaching centre shall engage tutors having less qualification than graduation .
Advertisement	No coaching centre shall make misleading promises or guarantee of rank or good marks to parents/students for enrolling them in the coaching centre
Penalty for Violations	First offence: ₹25,000; Second Offence: ₹1 lakh; Repeated Breaches: Revocation of Registration.
Mental Health of Students	Establish committees for complaint redressal, avoid undue pressure, and provide assistance to students in distress.
Other Remedial Steps	Remedial classes, spaced-out curriculum, weekly offs, no tests/exams after weekly offs, festival leaves, limited daily class hours, appropriate timing, co-curricular activities, counselling sessions, and non-publication of assessment results.

GS-3

1. HYDROXYCHLOROQUINE

Context:

A new study published in the journal Biomedicine & Pharmacotherapy links **hydroxychloroquine, an antimalarial drug**, to an **increased mortality rate of up to 11%**, suggesting a possible link to 17,000 deaths.

- Hydroxychloroquine was briefly **promoted by former US President Donald Trump** and others as a treatment for **COVID-19 during the early stages of the pandemic**.

While hydroxychloroquine is generally safe, the **study underscores the importance of evaluating risks differently when administering it preventively to a large number of healthy people**.

Hydroxychloroquine is in a **class of drugs called antimalarials and is also an antirheumatic drug**. It works by killing the **organisms that cause malaria**. Hydroxychloroquine may work to treat **rheumatoid arthritis and systemic lupus erythematosus** by decreasing the activity of the immune system.

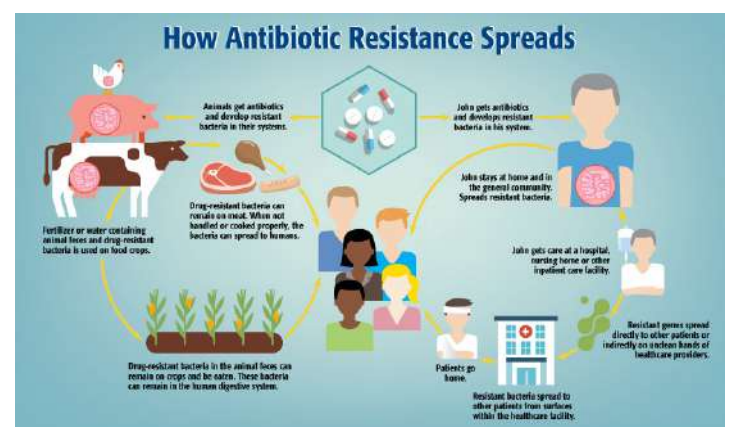
2. OPERATION AMRITH (AMRITH - ANTI-MICROBIAL RESISTANCE INTERVENTION FOR TOTAL HEALTH)

Context:

The **Kerala Drug Control Department** has **initiated Operation Amrith (Antimicrobial Resistance Intervention For Total Health)** to curb the **overuse of antibiotics in the state**.

- Pharmacies are required to **maintain accurate records of antibiotic sales**, display posters stating **'antibiotics not sold without doctor's prescription'**, and comply with prescription regulations.
- Operation Amrith aligns with **Kerala's Anti-Microbial Resistance Strategic Action Plan (KARSAP)**, reflecting a multi-sectoral approach to combat antimicrobial resistance (AMR).
- The state has implemented various initiatives, including the **Antibiotic Literate Kerala Campaign, block-level AMR Committees, and the Kerala Anti-microbial Resistance Surveillance Network (KARS-NET) for surveillance**.

The move aims to **raise awareness about AMR**, ensure responsible antibiotic use, and prevent the spread of drug-resistant infections.



3. PENCH TIGER RESERVE (PTR)

Context: Pench Tiger Reserve (PTR) in Maharashtra has been **designated as India's first Dark Sky Park**, the fifth in Asia, aimed at preserving the **night sky and combating light pollution**.

Recognized by the **International Union for Conservation of Nature (IUCN)**, this status emphasizes the importance of **natural darkness for ecological integrity and community well-being**. The Dark Sky Place certification involves **lighting policy, retrofits, education, and night sky monitoring**.

About the Pench Tiger Reserve:

Key Points	Details
About	<p>Located in Nagpur District, Maharashtra, named after Pench River. The river divides the park into equal eastern and western parts.</p> <p>Declared National Park in 1975, became a tiger reserve in 1998-1999. Major Protected Area in Satpura-Maikal ranges. Designated Important Bird Area (IBA) by Birdlife International.</p> <p>The reserve, spanning Madhya Pradesh and Maharashtra, is known for its tiger conservation efforts and inspired Rudyard Kipling's The Jungle Book.</p>
Flora	Dense green cover with Southern dry broadleaf teak forests and tropical mixed deciduous forests . Presence of shrubs, climbers, and unique medicinal plants. Bamboo plantations near water banks.
Fauna Mammals	Sloth bear, jackal, nilgai, wild dog, among others.
Fauna Birds	Peafowl, magpie robin, pintail, drongo, unia, myna, and various other bird species.

4. SAMAVESHA PROJECT

Context:

The **Indian Science, Technology, and Engineering Facilities Map (I-STEM)** is launching the **Samavesha project** at IISc., Bengaluru.

- The project aims to **enhance research collaboration in India by improving accessibility to facilities and labs**.
- The platform allows **researchers and industries to connect with institutions** that have the required **equipment, enabling them to rent it for experiments**.

The initiative aims to **save capital expenditure for researchers, industries, and startups** and prevent duplication of resources at the national level.

The Indian Science, Technology, and Engineering Facilities Map (I-STEM) is a **national web portal that** helps researchers find **the facilities they need for their R&D work**. The portal also aims to connect resources to researchers.

5. HUMBOLDT'S ENIGMA

Context:

The article discusses **Humboldt's enigma**, a concept proposed by Alexander von Humboldt in the 19th century that **suggests a relationship between temperature, altitude, humidity, and biodiversity**.

- Humboldt's enigma is the idea that the **Earth's tropical areas are not the only biodiverse regions**. According to this idea, many **areas outside the tropics, such as mountains, are also highly biodiverse**.
- The eastern Himalayas are cited as an example where **climate dissimilarity and diverse geological composition contribute to high biodiversity**.

6. HIMALAYAN WOLF

Context:

The **Himalayan Wolf (Canis lupus chanco)** has been assessed for the first time on the **International Union for Conservation of Nature (IUCN) Red List**.

- The assessment estimates a **population size of 2,275-3,792 mature individuals** across the Himalayan range of **Nepal, India, and the Tibetan Plateau**.

Conservation Status

- IUCN's Red List: Vulnerable
- Wildlife Protection Act, 1972: Schedule I
- CITES: Appendix I

Threats:

- **Depredation conflicts, habitat modification, encroachment, depletion of prey populations, hybridization with dogs, and illegal hunting for trade**.

Measures recommended:

- Securing **healthy prey populations**, improving **livestock guarding methods**, managing **feral dog populations**, transboundary conservation efforts, and **incorporating the Himalayan Wolf into conservation programs to enhance protection**.



7. NEW GENERATION AKASH MISSILE

Context:

The **Defence Research and Development Organisation (DRDO)** has successfully conducted a flight test of the **New Generation AKASH (AKASH-NG) missile** from the **Integrated Test Range (ITR)**, Chandipur off the coast of Odisha.

- The test involved intercepting a **high-speed unmanned aerial target at a very low altitude.**

About AKASH NG Missile:

The AKASH-NG is a medium-range, **mobile surface-to-air missile defense system**. It's a state-of-the-art missile system that can intercept **high-speed, agile aerial threats with a range of around 80 km.**

The AKASH-NG has advanced **technologies and features**, such as improved missiles, seekers, and radars. It also includes an indigenously developed **Radio Frequency Seeker, Launcher, and Multi-Function Radar.**



8. LITHIUM EXPLORATION

Context:

India has reached a historic milestone by signing an agreement between **Khanij Bidesh India Limited (KABIL) and Argentina's state-owned enterprise**, Catamarca Minera y Energética Sociedad del Estado (CAMYEN SE), marking the **first-ever lithium exploration and mining project** by an Indian government company.

The agreement allows **KABIL to explore and develop five lithium brine blocks** in Argentina's Catamarca province, covering approximately 15,703 hectares. Top of Form

Argentina, as part of the **"Lithium Triangle"** along with Chile and Bolivia, is a significant producer of lithium, holding the world's third-largest lithium reserve.

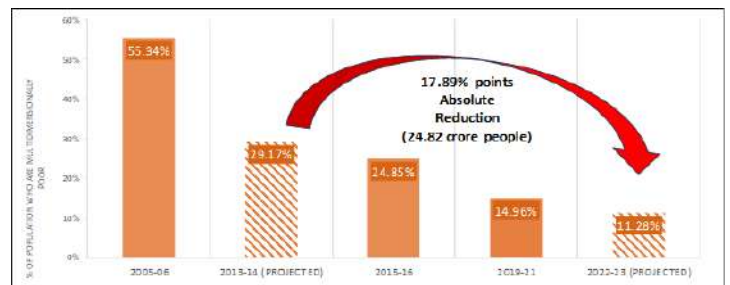
KABIL is a joint venture, involving NALCO, MECL, and HCL, and is focused on identifying and acquiring strategic minerals overseas for India's use. It is also exploring opportunities for lithium partnerships and acquisitions in other Latin American nations like **Chile and Brazil, as well as in Australia for lithium and cobalt exploration.**

Argentina is a country in the **southern half of South America**. **Argentina is the second-largest country in South America after Brazil.** The Andes Mountains, which run through both Argentina and Chile, are known for **hosting lithium-rich brine deposits**. The region's unique geological conditions make it conducive to the formation and concentration of lithium resources.

9. MULTIDIMENSIONAL POVERTY INDEX (MPI)

Context:

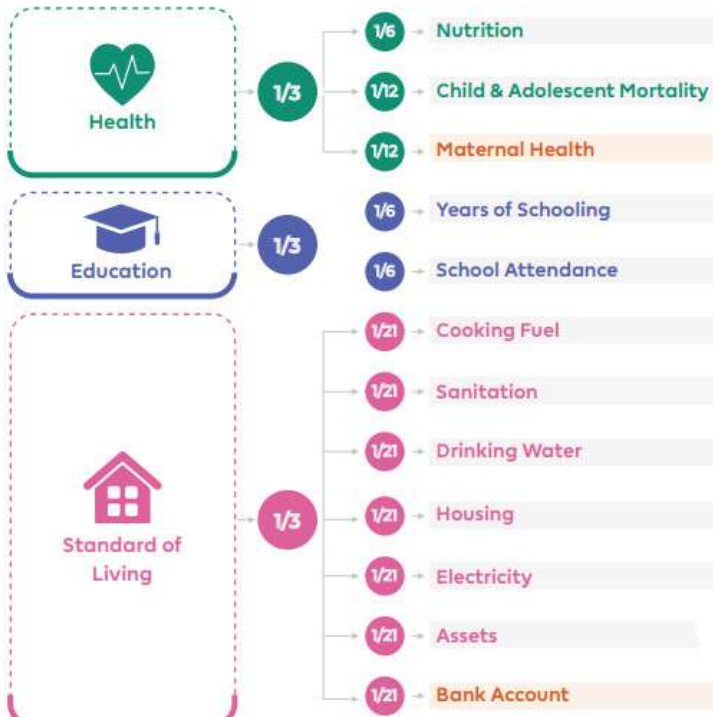
A recent discussion paper by NITI Aayog reveals that in the last nine years, **over 24 crore Indians** have escaped **multidimensional poverty**, showcasing a steep decline in the Poverty Headcount Ratio from over 29% in 2013-14 to about 11% in 2022-23.



What is MPI?

The **National Multidimensional Poverty Index (MPI)** is a **metric assessing poverty** in a country by considering **health, education, and standard of living, represented by 12 indicators**. It employs the **Alkire Foster methodology**.

Indicators and their weights



The National Multidimensional Poverty Index (MPI), a first-of-its-kind, estimates multiple deprivations at a household level **using NFHS data**. Published by NITI Aayog, it includes **three dimensions and 12 indicators**. Sub-indices measure the **Headcount Ratio (how many are poor)** and the **Intensity of Poverty** (how poor are the poor). The Global **MPI**, published **by OPHI in collaboration with UNDP**, is a similar index addressing worldwide multidimensional poverty.

Key findings of Niti Aayog:

- 1. Steep decline in Poverty Headcount Ratio (HCR):** HCR represents the percentage of the population below the Poverty Line.
- 2. Positive Improvement in All 12 MPI Indicators**
- 3. Faster Decline in Poorer States:** Poorer states like Uttar Pradesh and Bihar show a rapid decline in poverty, suggesting a reduction in disparities.
- 4. SDG Target 1.2:** India is expected to achieve Sustainable Development Goal (SDG) Target 1.2, aiming to reduce multidimensional poverty by at least half, well before 2030.
- 5. Successful Government Initiatives:** Programs like Poshan Abhiyan and Anemia Mukta Bharat have improved healthcare access, while the Targeted Public Distribution System under the National Food Security Act (ensures food grains for over 81 crore beneficiaries), extending free food grain distribution under Pradhan Mantri Garib Kalyan Anna Yojana.

Punganur cows

Context: Prime Minister Narendra Modi fed Punganur cows

at his residence on Makar Sankranti. Punganur is a **unique dwarf breed native to Andhra Pradesh**, considered the **shortest-humped cattle globally**.

About the Cow:

The Punganur cow is native to **Punganur village in Andhra Pradesh's Chittoor district**. It is known for its small size, **standing at 70-90 cm tall and weighing approximately 115-200 kg**. The breed is adapted to **hot and dry climates**. Recognizing the importance of preserving this indigenous breed, the Andhra Pradesh government has initiated **"Mission Punganur"** to revive and conserve the Punganur cow.

Punganur cows are now found not only in Andhra Pradesh but also in **Telangana, Karnataka, Kerala, Maharashtra, and Tamil Nadu**.



10. FIXED-DOSE COMBINATION

Context:

India's Central Drugs Standard Control Organisation (CDSCO) has given conditional approval for the continued manufacture and sale of **five fixed-dose combination (FDC) medicines**.

- The FDC drugs in question are part of the **344 drug combinations banned by the government in 2016**.

Fixed-dose combination (FDC) refers to a pharmaceutical formulation that contains two or more active ingredients combined in a fixed ratio in a single dosage form. Each of the active ingredients in the combination maintains a constant dose.

FDCs are commonly used in various **medical fields, including the treatment of infectious diseases, chronic conditions, and other health issues**.

11. COASTAL ZONE MANAGEMENT PLANS

Context:

The **National Green Tribunal (NGT)** has directed the Ministry of Environment, Forest and Climate Change to ensure that **coastal States and Union Territories promptly prepare Coastal Zone Management Plans (CZMP) or Island Coastal Regulation Zone Plans (ICRZP)** as per the **Coastal Regulation Zone notification, 2019**.

- A report submitted to the NGT revealed that only **Odisha, Karnataka, and Maharashtra, along with Great Nicobar and Little Andaman Islands**, have formulated the CZMP/ICRZP as per the 2019 notification.



12. VULTURE RESTAURANT IN JHARKHAND

Context:

In **Jharkhand**, a **‘Vulture Restaurant’** has been established in **Koderma district** as part of a conservation effort to **address the declining vulture population**.

- The initiative aims to **combat the impact of livestock drugs**, particularly diclofenac, on vultures.
- The restaurant serves as a **designated feeding site for vultures**, awaiting the **completion of protocols for diclofenac-free carcasses**.



About Vultures:

It is one of the **22 species of large carrion-eating birds** that live predominantly in the tropics and subtropics.

They act an important function as **nature’s garbage collectors and help to keep the environment clean of waste**.

India is home to **9 species of Vulture** namely the **Oriental white-backed, Long-billed, Slender-billed, Himalayan, Red-headed, Egyptian, Bearded, Cinereous and the Eurasian Griffon**.

Bearded, Long-billed, Slender-billed, Oriental white-backed are protected in the **Schedule-1 of the Wildlife Protection Act 1972**. Rest are protected under ‘Schedule IV’.

13. KASHMIR WITHOUT SNOW

Context:

This winter, Kashmir and Ladakh, including the popular tourist destination Gulmarg, have experienced a lack of snowfall, impacting winter tourism, ski resorts, and overall local livelihoods.

Reasons for Dry Winter in J&K:

Reasons	Details
Decreasing Trend of Snowfall	Attributed to a decline in western disturbance events and a gradual rise in temperatures, indicating the role of climate change.

El Nino Event	The prevailing El Nino event in the eastern Pacific Ocean is considered an additional factor affecting snowfall in the region this year.
El Nino Impact	Persistent El Nino event influencing global atmospheric circulation.
Rising Temperatures	Temperature increase observed , with a higher rate in upper elevation areas compared to plains.
	Srinagar temperatures are sometimes comparable to or higher than Delhi, contributing to the decline in snowfall.
What are Western Disturbances?	Large eastward-moving rain-bearing wind systems originating beyond Afghanistan and Iran (near the Mediterranean Sea)
	The primary source of winter precipitation in the Himalayan region.
	Pick up moisture from the Mediterranean Sea and even the Atlantic Ocean.
	About four to six western disturbance events typically occur every month during winter.
	The recent decline in the frequency of western disturbance events affects overall winter precipitation in northern regions.
Impact of Dry Winter: Long-term Implications	Generation of less hydroelectricity.
	Increase in the rate of glacier melting.
	Adverse impact on drinking water supply due to scanty snowfall leading to minimal groundwater recharge.
Impact of Dry Winter: Short-term Implications	Increased risk of forest fires and agricultural drought.
	Drop in crop production.
	Possibility of an early spring leading to early flowering, potentially reducing crop yield.
	Winter snow is crucial for providing steady moisture to the soil, and vital for winter crops, especially in horticulture.
	Adverse effects on yields of key crops like apples and saffron, impacting the local economy.

14. CENTRE FOR FOURTH INDUSTRIAL REVOLUTION (C4IR)

Context:

Telangana has signed an agreement with the **World Econom-**

ic Forum (WEF) to establish the Centre for Fourth Industrial Revolution (C4IR) in the state capital, Hyderabad.

What is C4IR?

C4IR stands for the **Centre for Fourth Industrial Revolution**. It is an initiative by the **World Economic Forum (WEF)** to establish centres that focus on harnessing the potential of the Fourth Industrial Revolution (4IR) technologies and driving collaboration between governments, businesses, and academia to address global challenges and opportunities.

The collaboration aims to leverage technology for advancements in the life sciences and healthcare sector, with a **focus on reaching healthcare targets for the state's population. Telangana envisions becoming a health tech hub and a global destination for healthcare** services.

About 4IR:

The **Fourth Industrial Revolution (4IR)**, also known as the Digital Revolution, is characterized by the integration of technologies that **blend the physical, digital, and biological realms**. Coined by Klaus Schwab, Founder and Executive Chairman of the WEF, 4IR includes technologies such as IoT, robotics, VR, AI, quantum computing, and 3D printing. It brings about advancements in technology, boosts productivity and efficiency, contributes to economic growth, and facilitates good governance.

About WEF:

The World Economic Forum is an **international non-governmental organization** for public-private sector collaboration based in Cologny, Canton of Geneva, Switzerland. It was founded on **24 January 1971 by German engineer Klaus Schwab**.

15. STATES' STARTUP RANKING FOR 2022

Context:

Karnataka, Gujarat, and Kerala have been recognized as the **best-performing states in developing start-up ecosystems**, according to the start-up rankings for 2022 released by the **Department for Promotion of Industry and Internal Trade (DPIIT)**.

Key Findings:

- **Tamil Nadu and Himachal Pradesh** are also highlighted as best performers, while **Maharashtra, Odisha, and Telangana** are categorized as top performers.

The rankings are based on the state's initiatives to foster a conducive environment for start-ups, with a total of **33 states and Union territories participating** in the assessment **under five categories - best performers, top performers, leaders, aspiring leaders, and emerging start-up ecosystems**.

The **States' Start-up Ranking** is a yearly capacity-building exercise created and released by **DPIIT that evaluates all of India's states and Union Territories** on their efforts to build an ecosystem conducive **to start-up growth**.

States' Start-up Ranking was launched in **February 2018** to achieve the vision of **building a robust startup ecosystem in the country**

16. PAKKE PAGA HORNBILL FESTIVAL

Context:

The **Pakke Paga Hornbill Festival (PPHF)** has begun in, Arunachal Pradesh, **emphasizing the conservation of hornbills**.

- The festival highlights the **decline in hornbill numbers** and **urges collective efforts to protect these critically endangered birds**.
- The festival **declared a 'state festival' in 2019, is held near the Pakke Tiger Reserve**, home to four hornbill species.

The Great Indian Hornbill is a bird family found **in tropical and subtropical Africa, Asia, and Melanesia**. It is the state bird of **Kerala and Arunachal Pradesh in India**.

The Great Indian Hornbill is now considered **"Vulnerable"** due to high hunting pressure, habitat loss, and deforestation.

17. E-SAKSHI MOBILE APPLICATION

Context:

The Ministry of Statistics and Programme Implementation (**MoSPI**), launched the **MPLADS e-SAKSHI Mobile Application** for the **revised fund flow procedure under the MPLAD Scheme**.

- The Mobile Application aims to **revolutionize how Members of Parliament (MPs) engage with and manage development projects in their constituencies**.

Features:

- It provides **convenience, accessibility, and real-time access for MPs to propose, track, and oversee projects**, enhancing decision-making processes and enabling swift responses to emerging needs or issues.
- The **application promotes transparency by providing instant updates** on the status and progress of proposed projects, **fostering accountability and public trust in MPLADS fund allocation and utilization**.
- The mobile app also includes **features for budget management, allowing MPs to monitor expenditures**.

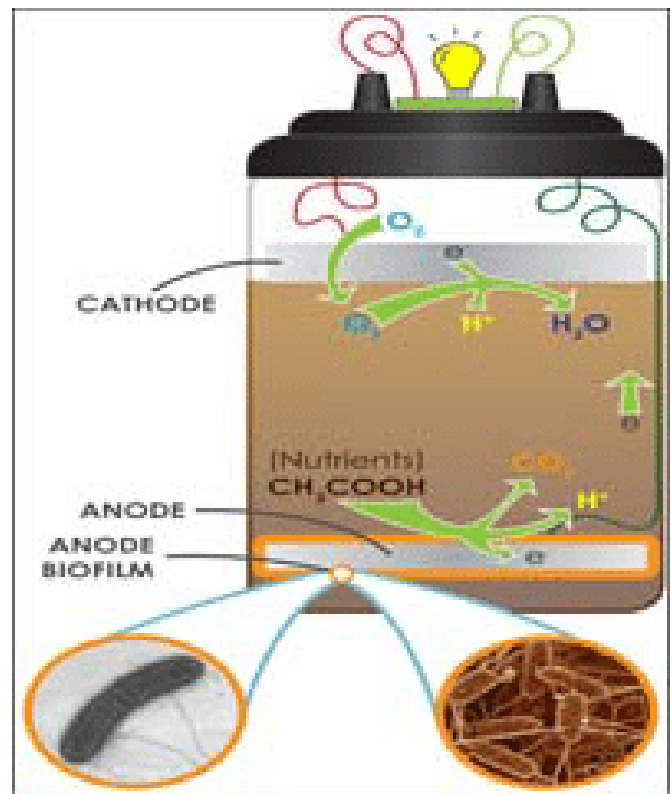
18. SOIL-POWERED FUEL CELL

Context:

A team from Northwestern University has **developed a soil-powered fuel cell** that **harvests energy from microbes in the soil**.

- This **small fuel cell**, about the size of a book, **could be used to power underground sensors in applications like green infrastructure and precision agriculture**.
- The researchers tested the **fuel cell by using it to power sensors** detecting touch and measuring soil moisture.
- The new fuel cell's design, **with a perpendicular configuration of anode and cathode**, performs **better in dry conditions**, making it more **suitable for low-moisture environments**.

The researchers claim it can **generate power indefinitely as long as there are microbes and carbon** in the soil.



19. ARTIFICIAL REEFS IN KERALA

Context:

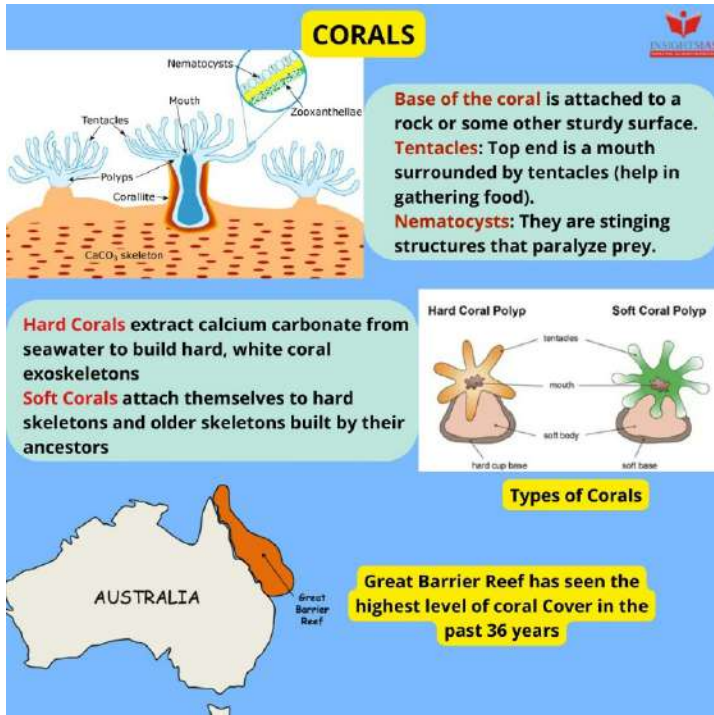
The deployment of artificial reefs off the coast of **42 fishing villages in Thiruvananthapuram district, Kerala**, commenced as part of a project aimed at enhancing fish resources and promoting sustainable fisheries management.

A total of **6,300 artificial reef units, with 150 designated** for each village, will be deployed. It intends to boost **sustainable fishing practices, improve the marine landscape, and enhance the livelihoods of the fishing community**. The initiative is implemented under the **Central Government's Prad-**

han Mantri Matsya Sampada Yojana, with technical support from the Central Marine Fisheries Research Institute.

What are Artificial reefs?

They are **man-made structures intentionally placed** on the ocean floor to mimic the characteristics of natural reefs. These structures, often made of materials **like concrete, rocks, or sunken ships, serve as habitats for marine life**. The primary purpose of artificial reefs is to enhance local marine ecosystems, promote biodiversity, and provide breeding and feeding grounds for fish, ultimately supporting sustainable fisheries and conservation efforts.



20. YELLOW RUST

Context:

The **Indian Institute of Wheat and Barley Research (IIWBR)** has urged **wheat farmers** to remain vigilant against **yellow rust**, a pest that historically appeared in some districts of Haryana during this period.

Yellow rust, a fungal disease, adversely impacts wheat crops **by creating yellow stripes on leaves, hindering photosynthesis and causing grain size reduction**. Typically prevalent in cool weather, especially in the northern hills and north-western plains zone, the recent combination of rain, temperature rise, and humidity creates favourable conditions for yellow rust development.

If yellow rust is observed, **recommended measures include spraying fungicides such as Propiconazole or Tebuconazole** to prevent further spread. The advisory emphasizes using an alternate fungicide if applied last year, especially during dry conditions.

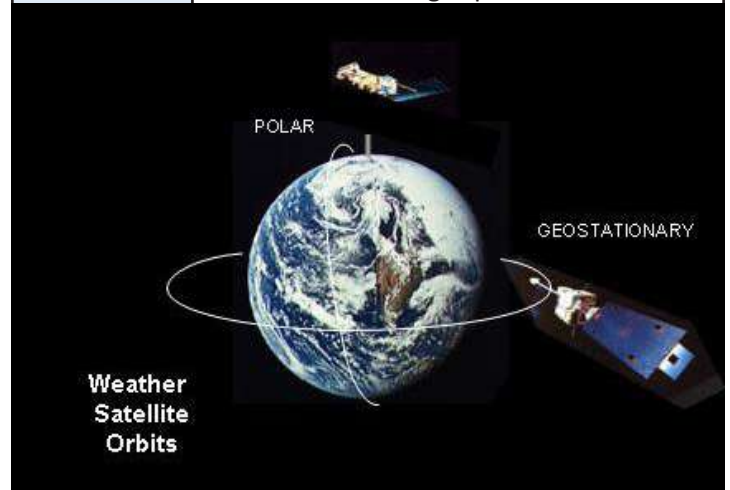
21. USE OF INSAT SATELLITES TO ANALYSE FOG

Context:

Large parts of **North India, including Bihar, Uttar Pradesh, Uttarakhand, Haryana, Delhi, and Punjab**, have been experiencing **heavy fog since** December 2023. The **India Meteorological Department (IMD)** utilizes satellite data, particularly from INSAT 3D and INSAT 3DR, to track and analyze the fog.

How Indian National Satellite (INSAT) System Help in Weather Analysis?

Key Aspects	Description
Advanced Imaging	INSAT satellites like 3D and 3DR use RGB imagers for solar reflectance and brightness temperature analysis.
Strategic Orbits	Geostationary orbits of satellites like INSAT 3D and 3DR ensure continuous monitoring over India for real-time analysis.
Day and Night Monitoring	Equipped with 'day microphysics' and 'night microphysics' , these satellites track weather changes around the clock.
Snow and Cloud Differentiation	The satellites distinguish between snow and clouds based on reflectance in different spectral bands.
Enhanced Predictions	Combining day and night data facilitates tracking cyclone formation and predicting thunderstorms, improving early warnings.
Advanced Radiometers	Upgraded radiometers in satellites like 3DR offer superior spatial resolution and functionality.
Atmospheric Sounders	Instruments measure temperature, humidity, and water vapour, providing detailed atmospheric profiles for analysis.
Continual Improvement	Each new satellite in the INSAT series incorporates improved. The INSAT 3DS meteorological satellite , expected to launch in February 2024, will further enhance India's weather monitoring capabilities.

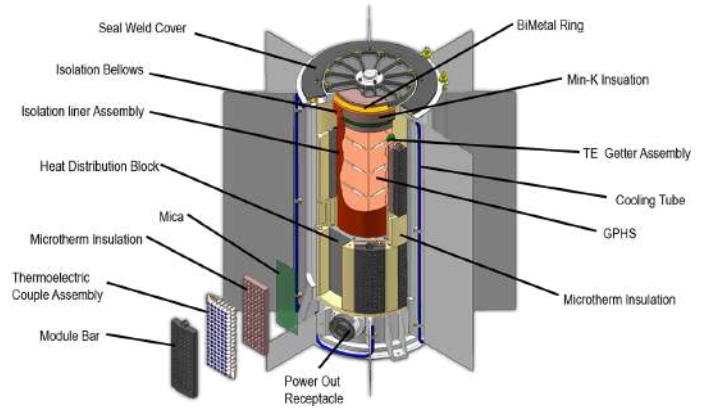


How Satellites Analysis Color and Snow

Satellites, such as INSAT 3D, use RGB (Red, Green, Blue) imaging for colour determination based on solar reflectance and brightness temperature. This involves analyzing visible, shortwave infrared, and thermal infrared signals to represent green, red, and blue colours. The unique signature of snow, which reflects similarly to clouds in the visible spectrum **but strongly absorbs shortwave infrared radiation**, enables satellites to distinguish snow from clouds.

India has several weather satellites:

- 1. Kalpana 1 (2002-2017):** Geostationary orbit, equipped with early VHRR and data-relay transponder, deactivated in 2017 after 15 years.
- 2. INSAT 3A (2003):** Carried a three-channel VHRR for meteorological observations with different resolutions for visible, thermal infrared, and water vapour bands.
- 3. INSAT 3D and 3DR:** Geostationary orbits at 82 and 74 degrees east longitudes, featuring upgraded VHRRs for improved spatial resolution and functionality. They also carry atmospheric sounders for measuring temperature, humidity, and water vapour.
- 4. Upcoming INSAT 3DS (Scheduled for February 2024):** To be launched by the Indian Space Research Organisation using the GSLV Mk II launch vehicle. The "3DS" indicates it's a subsequent iteration following the INSAT 3D and 3DR series.



22. NUCLEAR BATTERY

Context:

Chinese startup Betavolt has developed a **"nuclear battery"** that can produce power for 50 years without charge.

The battery, which is **smaller than a coin, contains 63 nuclear isotopes** and converts radioisotope energy into electrical energy. Betavolt claims it is the **world's first battery to achieve miniaturization of atomic energy production**, challenging traditional notions of nuclear technology.

Such batteries use **energy from the decay of a radioactive isotope (Like nickel-63)** to generate electricity. Unlike nuclear reactors, they **do not rely upon nuclear fission for power generation**.

Application: The company plans to produce batteries with 1 watt of power by 2025 and sees applications in aerospace, AI equipment, medical devices, microprocessors, sensors, drones, and micro-robots. The nuclear battery is **fire-resistant, jerk-proof, and operational in temperatures from -60°C to 120°C**.

MAPPING

1. ANAMALAI TIGER RESERVE

Context:

The Forest Department is removing **invasive species in the Anamalai Tiger Reserve's core areas**, focusing on the **Ulan-dy range**.

Native tree saplings are being planted on 90 hectares, part of the **Restoration of Degraded Forests Landscape Project supported by NABARD**. Tribal communities from ATR are involved in removing invasive plants and planting native trees, including **Aegle marmelos, Syzygium cumini, and Pterocarpus marsupium**.

About Anamalai Tiger Reserve:

About ATR	Details
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About	Carved out of the Tamil Nadu portion of the Anamalais and lies South of the Palakkad gap in the Western Ghats
	Surrounded by various wildlife reserves and forests: Parambikulam Tiger Reserve on the East, Chinnar Wildlife Sanctuary and Eravikulam National Park on the South Western side
	Ranges within the reserve include Amaravathi, Udumalpet, Pollachi, Ulandy, Valparai, and Manamboli
Anthropological Diversity	Home to over 4600 Adivasi people from six indigenous tribes living in 34 settlements, including Kadars, Malasars, Malaimalasar, Pulaiyars, Muduvars, and Eravallan (Eravalar)
Flora	Encompasses a variety of ecosystems, including wet evergreen forests, semi-evergreen forests, montane shola-grassland , moist deciduous, dry deciduous, thorn forests, and marshes.
	The Kariyan shola, Grass Hills and Manjampatti of ATR are part of the UNESCO World Heritage site
Fauna	Notable mammal species include the Asiatic elephant, Sambar, spotted deer, Barking deer, Mouse deer, Gaur, Nilgiri tahr, and Tigers.
Other Protected Areas in Tamil Nadu	Mudumalai Tiger Reserve – Kalakkad – Mundanthurai Tiger Reserve – Sathyamangalam Tiger Reserve – Nilgiri Biosphere Reserve – Mukurthi National Park – Gulf of Mannar Marine National Park – Guindy National Park

2. SAGAR ISLAND

Context:

The **Ganga Sagar Mela on Sagar Island, West Bengal**, attracted a record 10 million pilgrims, facing environmental challenges due to its vulnerability to cyclones and rising sea levels.

West Bengal has urged for **'national fair' status** and financial support from the central government. The pilgrimage saw over 6 million people taking a dip in the sea, making it the **second-largest Hindu gathering after the Kumbh Mela**.

About Ganga-sagar Mela	The Ganga-sagar Mela is the world's second-largest human congregation , occurring annually during Makar Sankranti on Sagar Island, West Bengal. With roots dating back to 400 BCE and mentioned in Indian epics, pilgrims take a dip in the Ganga and visit the Kapil Muni temple . The mela is historically significant and draws millions, making it a major Hindu gathering.
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Who is Kapil Muni?	Kapil Muni, a Vedic sage , is considered the original proponent of the Samkhya system of Indian philosophy . Living around the 6th or 7th century C.E., he is believed to be an incarnation of Vishnu . Kapil Muni is known for teaching bhakti yoga and is recognized not only in Hinduism but also in Buddhism.
Vedic Sage	His teachings emphasize meditation, critique of Vedic gods and rituals , and a dislike for Brahmanic doctrines . Students associated with him are said to have built the city of Kapilavastu .
Where is Sagar Island Located	Sagar Island, the westernmost island of the Ganges-Brahmaputra delta , is situated in West Bengal. It lies at the mouth of the Hugli (Hooghly) River , with an arm of the river separating it from the mainland to the east.



3. TAIWAN

Context:

Lai Ching-te, from Taiwan's ruling Democratic Progressive Party (DPP), won the presidential election, marking the DPP's third consecutive victory with a pro-independence stance.

Major powers' reactions include China asserting Taiwan as part of China, the USA welcoming the democratic process but not supporting independence, and Japan congratulating Taiwan.

Taiwan's global geopolitical importance lies in its **economic weight, being the 16th largest economy, a major source of semiconductors, and a critical point on maritime trade**

routes. Taiwan produces 92% of the world's most advanced **logic chips** and 70% of smartphone chipsets, among other critical components.

India's evolving stance toward Taiwan involves expanding economic relations, **direct criticism of China's actions in the Taiwan Strait in 2022**, and a departure from reaffirming the **one-China principle**, aligning more with its **QUAD partners**.

Taiwan, officially the Republic of China, is a country in East Asia. It is located at the junction of the East and South China Seas in the northwestern Pacific Ocean, with the People's Republic of China to the northwest, Japan to the northeast, and the Philippines to the south.



4. IMPHAL RIVER

Context:

The Manipur government has **formed a three-member committee** to conduct a thorough investigation **into a fuel leak from a power plant (Leimakhong Power Station) in Imphal Valley**, which subsequently **spilt into a nearby stream** that converges with the Imphal River. The heavy fuel oil, a **by-product of crude oil distillation**, poses environmental concerns.

About HFO:

Heavy fuel oil (HFO) is a **residual fuel that's a byproduct of the distillation of crude oil**. It's also known as **bunker fuel or residual fuel oil**.

HFO is a **tar-like substance** that's used to **generate heat and motion**. It's primarily used as a **marine fuel**.

HFO is toxic and has a boiling temperature of 350–500°C. It has a **higher viscosity than diesel**. The quality of HFO depends on the **quality of the crude oil used in the refinery**. HFO is widely used because it's **about 30% cheaper than alternatives**.

About Imphal River:

It originates from the **northern hills of Karong in Senapati District** and is joined by the Iril River at Lilong, which is a significant watercourse draining the central plain. The river, along with others, contributes to the formation of swamps and lakes, including the renowned Loktak Lake.



5. CHANCAY (PERU)

Context:

China is expanding its **trade influence in South America** with a new mega port project in the Peruvian town of Chancay.

The over \$3 billion **deep water port, majority-owned by Chinese state-owned firm Cosco Shipping**, is set to start operations late this year. This port, part of **China's 'Belt and Road' initiative**, aims to enhance trade ties with South America by providing a direct gateway to the resource-rich region.

About Peru

It is a **country in South America that's home to a section of the Amazon rainforest** and Machu Picchu, an ancient Inca city high in the **Andes mountains**. The region around Machu Picchu, including the Sacred Valley, Inca Trail and the colonial city of Cusco, is rich in archaeological sites. On Peru's arid Pacific coast is Lima, the capital.