

MONTHLY

EPIC!

*Supplementary reading material for MGP and Current Affairs classes of
ForumIAS Academy*

AN EXCLUSIVE CURRENT AFFAIRS MAGAZINE FOR
PRELIMS + MAINS
PREPARATION

January 2024

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Mayur Hazarika

8 Selections in Top 10

64 Selections in Top 100

I was a part of MGP at Forum IAS. Apart from this I also took Current Affairs classes for mains by Dipin Dandekar Sir. The top notch quality of the content and the versatile perspectives I got from Sir's classes really boosted my score in GS. One on one interaction with Ayush Sir during my interview preparation helped me.

I am really grateful to Forum IAS especially Dipin Sir and Ayush Sir for their valuable inputs.


Garima Lohia
AIR 2

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I enrolled myself in multiple courses at ForumIAS - SFG, ANFG, MGP, current affairs classes and Ethos+ classes. The quality of content, the consistency of classes and availability of mentorship right when I needed it helped me throughout my preparation journey.

A special thanks to Ayush Sir and Dipin Sir for their efforts and constant support, even though I was practically invisible!

Smriti Mishra
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AIR 4, CSE 2022



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5 students in Top 5, 8 students in Top 10 and 64 students in Top 100 Ranks List of CSE 2022 are ForumIAS Academy students.

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Focus Article

Issues Related to the Office of Governor

News: The relationship between the Governor and the elected State Government has become strained in several States. Some States have approached the Supreme Court regarding delay by the Governors in providing assent to the Bills passed by the State Legislative Assemblies.

What are the recent controversies associated with the Office of Governor?

State	Issue
Tamil Nadu	<ul style="list-style-type: none"> The Governor refused to read some parts of the Governor's address which is prepared by the State Government. The Governor has withheld 13 Bills passed by the State Assembly. The Governor had dismissed a Minister from the Cabinet without the recommendation of the CM, but later retracted his decision.
West Bengal	<ul style="list-style-type: none"> Governor and State Government faced-off after the WB Assembly passed a Bill paving the way for making the CM the Chancellor of State Universities replacing the Governor from the position.
Kerala	<ul style="list-style-type: none"> Governor toured the State without any previous announcements. Governor's warning of action against the individual ministers that lower the dignity of the office of the Governor. Dispute with State Government over the approval of Bills.
Jharkhand	<ul style="list-style-type: none"> The Governor didn't act on the advice of the Election Commission of India to disqualify the Chief Minister of Jharkhand for violation of electoral norms. This resulted in prolonged political uncertainty in the State.

What is the history and rationale behind the Office of the Governor?

- Government of India Act 1858:** Provincial Governors were agents of the crown, functioning under the supervision of the Governor-General.
- Government of India Act 1935:** The Governor was now to act in accordance with the advice of Ministers of a province's legislature, but retained special responsibilities and discretionary power.
- Post-Independence, the Office of the Governor was retained. Governor was envisaged to be the Constitutional Head of a State. The Governor retained special responsibilities and discretionary powers.

What are the Issues Related to the Office of Governor?

- Affiliation-based Appointment:** Former bureaucrats and Politicians affiliated with the ruling parties have been appointed as Governors. This has led to questions about their impartiality and non-partisanship.
- Arbitrary Removal of Governors:** There are no written grounds or procedure for removing Governors. This leads to arbitrary removal especially when there is change of political power at the Union level.
- From Centre's Representative to Centre's Agent:** Affiliation-based appointments mean that Governors have become the 'agents of the Centre' as they are appointed and removed by the Union Government.
- Governor recommending President's Rule:** The discretionary power of Governor recommending President's rule on account of the failure of constitutional machinery in the State has not always been based on 'objective material'. Political partisanship has also played their part.

- **No Clear Distinction Between Constitutional and Statutory Role:** The Constitutional mandate of the Governor to act on advice of the Council of Ministers is not clearly distinguished from statutory authority as Chancellor. This has resulted in many conflicts between the Governor and the State Government e.g., the controversy regarding appointment of a Vice Chancellor by the Governor of Kerala, bypassing the State Government's nomination.
- **Misuse of Discretionary power regarding appointment of CM:** The Office of Governor has been accused of playing a partisan role in the appointment of CM in cases where a single party lacks the majority.
- **Convening and Dissolution of Assembly:** The Office of Governor has been associated with the politics of delay in the convening and dissolution of State Legislative Assembly.
- **Delay in giving assent to the Bills:** There is no time limit set for how long a Governor can withhold assent to a Bill. This has been misused by the Office of the Governor to withhold assents to Bills passed by the State Legislative Assemblies.

Article	Provision
Article 153	Provides that there shall be a Governor for each State. A person can be appointed as Governor for two or more States.
Article 155	The Governor of a State shall be appointed by the President by warrant under his hand and seal.
Article 156	The Governor shall hold office during the pleasure of the President.
Article 161	Power to grant pardons, reprieves, respites or remissions of punishment, or to suspend, remit or commute the sentence in matters of crime where the State Legislature has power to make laws. Provides discretionary powers which include:
Article 163	<ul style="list-style-type: none"> • Appointment of a Chief Minister when no party has a clear majority in the State Legislative Assembly. • In times of no-confidence motions. • Failure of Constitutional machinery in the State (Article 356). • The power to withhold assent to a Bill and reserve a Bill for Consideration of President. (Articles 200 and 201).
Article 361	The Governor of a State, shall not be answerable to any court for the exercise and performance of the powers and duties

What has been the view of the Supreme Court with respect to the Office of Governor?

- **Shamsher Singh vs. State of Punjab (1974):** The SC held that the Governor is bound to act in accordance with the aid and advice of the Council of Ministers headed by the Chief Minister. Article 154(1) makes it clear that the executive power of the State is vested in the Governor, but shall be exercised by him in accordance with the Constitution.
- **SR Bommai vs. Union of India (1994):** The case was concerned with the use of Article 356 and the Governor's power to dismiss a State Government. The Supreme Court ruled that whether the State Government has the majority should be tested on the floor of the House. It shouldn't be based on the subjective assessment of the Governor.
- **Rameshwar Prasad vs. Union of India (2006):** The Supreme Court held the Governor's decision to dissolve the Assembly as unconstitutional and mala fide. Motivated and whimsical conduct of the Governor in recommending President's rule is amenable to judicial review.
- **BP Singhal vs Union of India (2010):** The SC held that the removal of Governor cannot be based on arbitrary, capricious or unreasonable grounds.

- **Nabam Rebia vs. Deputy Speaker (2016):** The Governor had went against the advice of the State Cabinet and called the session of the Legislative Assembly at an earlier date (against the recommended date). The SC confirmed that the **Governor does not enjoy broad discretionary powers** and is always subject to Constitutional standards. The Court concluded that the Governor's discretion did not extend to the powers conferred under Article 174 (Article 174 is related to the Sessions of the State Legislature, prorogation and dissolution). Hence, the Governor could not summon the House, determine its legislative agenda or address the legislative assembly without the advice of the State Government.

What are the recommendations of various Commission in this regard?

- **The Administrative Reforms Commission (1969):** It recommended that non-partisan persons having long experience in public life and administration should be appointed as the Governors of a State.
- **Sarkaria Commission (1988)**
 - **Appointment of Governor**
 - The Governor should be appointed after consultations with the Chief Minister of the State.
 - The Governor should be eminent in some walk of life and from outside the State.
 - The person should be a detached figure without intense political links, or should not have taken part in politics in the recent past.
 - The person should not be a member of the ruling party.
 - **Removal of Governor**
 - The Governor should be removed before the end of the term (5 years) only on the grounds if doubts are raised about his morality, dignity, constitutional propriety etc.
 - For removal before the end of the term, the State Government may be informed and consulted.
 - **Use of Article 356**
 - This article should be used very sparingly and as a matter of last resort. It can be invoked only in the event of political crisis, internal subversion, physical breakdown, and non-compliance with the Constitutional directives of the Centre.
- **National Commission to Review the Working of the Constitution (NCRWC), 2002:** The Governor should be appointed by a Committee comprising the Prime Minister, Home Minister, Speaker of the Lok Sabha, and the Chief Minister of the State concerned.
- **The Second Administrative Reforms Commission (ARC), 2008:** The Inter-State Council needs to come up with some guidelines for Governors to follow when they are using their discretionary power.
- **Punchhi Commission (2010)**
 - It proposed giving Governors a fixed term of 5 years and removing them through an impeachment process (like the President) by the State Legislature. The doctrine of pleasure (for removal of Governors) should be deleted.
 - It reiterated the recommendation of the Sarkaria Commission regarding appointment of Governors. The person shouldn't be active in politics.
 - The convention of making the Governors as Chancellors of universities should be done away with.
 - Article 355 and 356 should be amended to allow the Union Government to bring specific troubled areas under its rule for a limited period, instead of the whole State.

The Governor's discretion and Constitutional mandate should be guided by certain 'norms and principles', which can be defined in a 'Code of Conduct'. Discretion must be a decision that is guided by reason, motivated by good faith, and tempered by caution. Certain codification can be undertaken regarding discretionary powers like determining the areas in which they have discretion, establishing a time frame within which they must act, and stating unequivocally that they are required to follow the advice of the Cabinet when dealing with Bills etc.

General Studies Paper I

1. Shankaracharyas and Adi Shankara

News: The four Shankaracharyas announced that they would not participate in the inauguration ceremony of the Ram Temple in Ayodhya.

Who is Shankaracharya?

- Shankaracharya means '**teacher of the way of Shankara**'.
- According to tradition, they are religious teachers who belong to a line of teachers going back all the way to **Adi Shankara** himself.
- Shankaracharya is a **religious title** used by the heads of the 4 cardinal **mathas or peeths**.
- The **4 mathas** (monasteries) in India are:
 - Dwarka in Gujarat (West).
 - Joshimath in Uttarakhand (North).
 - Puri in Odisha (East).
 - Sringeri in Karnataka (South).
- Mathas were founded by **Adi Shankara** (c 788 CE-820 CE).
- Presently, these mathas are intricate organizations encompassing **religious shrines, temples, libraries, and residences**. They are dedicated to preserving and advancing Shankara's tradition.

Who was Adi Shankara?

- Adi Shankara was born in Kalady village on the bank of the **River Periyar** (Ernakulam district in Kerala).
- According to hagiographies, he was an extraordinary scholar-monk who was trained by **Govindacharya**.
- Later he **travelled extensively**, visiting key spiritual centres, **challenging established intellectual traditions**, and establishing mathas and monastic organisations.
- Adi Shankara is said to have travelled across India, from Kanchi in Tamil Nadu to Kamrup in Assam, and from the Himalayan temples of Kedar and Badri to Kashi on the Ganges' banks and Puri on the Bay of Bengal to disseminate teachings of **Advaita Vedanta**.
- His writings include **116 works, comments on the 10 Upanishads, the Brahmasutra, and the Bhagavad Gita**. However, the authorship of several of Shankara's writings is still debated.

What is Advaita Vedanta?

- It is a school of Hindu philosophy and spiritual discipline.
- The core of Advaita Vedanta emphasis on the **unity between atman**, (individual consciousness), and **brahman**, the ultimate reality.
- It expresses a radical **non-dualistic ontological stance**, asserting that everything that is perceived is essentially **illusory (maya)**.
- According to this philosophy, the sole true reality is the principle of *brahman* (distinct from the caste Brahmin), transcending empirical diversity.
- Adi Shankara's writings represented the first thorough exposition of this intellectual tradition.
- He attempted to express nonduality using **systematic metaphysical, linguistic, and epistemological ideas**.
- His thought and practices include a **teaching tradition** which aims at bringing a **direct, liberating awareness of non-duality**, also known as **liberation or freedom (moksha)**.

What is the legacy of Adi Shankara?

- Adi Shankara's influence extends beyond his **contributions to metaphysics and theology**.

- His extended journeys are regarded as a **quasi-nationalistic endeavour**, in which faith, philosophy, and geography come together to **imagine an India** that transcends the political bounds of the era.
- He established 4 **cardinal mathas** which are regarded as great examples of this vision.
- These *mathas* are also regarded as the **guardians of Hindu faith and customs**.

2. Economic Divide Between Indian States

News: The economic gap between States in India has worsened over the last 30 years.

What is the current economic divide among States?

- Wealthier States are mainly in the South, West, and Northwest; while poorer States are predominantly in the Center and East.
- In 1990-91, the State GDP of wealthier States was 1.7 times that of poorer States. In 2019-20, the ratio had risen to 2.5 times.

What are the reasons for the economic divide?

- **Sectoral Growth Gap in Manufacturing:** Wealthier States had higher growth in the manufacturing sector. In 2019-20, the per capita State GDP from the manufacturing sector in wealthy States became 3.6 times that of poor States, compared to 2.4 times in 1990-91.
- **Service Sector and IT Boom:** In services sector also, the gap widened. The State GDP ratio in the services sector rose from 2.0 in 1990-91) to 2.9 in (2019-20).
- **Infrastructure vs Power Availability:** Despite having comparable road and rail infrastructure, lower-income states, particularly in the Gangetic and eastern regions, lag in per capita power availability.
- **Shift in Investment:** There has been a shift from public to private sector investment. The public sector's share in gross fixed capital formation dropped from 40% to 23% between 1990-91 and 2019-20, while the private sector's share rose from 18% to 38%, leading to a **concentration of investment in wealthier States**.
- **Labour Availability:** Lower-income States (especially in the north and central regions), have lower urban labour force participation rates and fewer workers with regular wage/salary income, affecting their industrial growth. (Refer EPIC July 2022 (click) for The Duality of India: Differences in Northern and Southern Indian States).
- **Entrepreneurship:** The higher-income States accounted for around 75% of organized-sector factories in 2019-20. Additionally, out of 91 richest Indians residing in India, 87 live in these high-growth States.
- **Education and Skill Disparity:** About 70% of engineering seats are in higher-income States. There is a major imbalance in access to higher education. Hence, there is a disparity in attracting high-tech industries.



What should be the approach going ahead?

- To bridge the divide, it's essential to **boost entrepreneurship** and **skill development** in the poorer States.

- Power infrastructure should be upgraded in regions like the Gangetic and eastern areas.
- Access to technical education should be expanded.
- Forming **interconnected national value chains** that link the resources of wealthier States with the potential of poorer ones can foster **balanced economic growth**.

3. Evolution of Policy Approach to Slums and Slum Redevelopment

News: The policy approach to slums and slum redevelopment has gradually evolved since Independence.

How has the policy evolved since Independence?

The post-independence era can be divided into 4 periods with respect to the conception of slums and the policy response.

First (1950s and 1960s)

- **Conceptualisation:** Slums were considered to be a **result of partition** and the inflow of a huge population into cramped, dilapidated residential areas.
 - Slums were considered as something that **needed to be eradicated**.
 - It was connected to **spatial constraints and health issues**. **Urban socio-economic disparities** that resulted in its formation were **ignored**.
- **Steps:** Introduction of the **Slum Areas Act of 1956** made Government intervention possible after an area was officially notified as a slum.
 - Thus, the slum became a legal entity.

Second (1970s and mid-1980s)

- **Conceptualisation:** Slum was now looked at as something that had to be **developed**.
 - **Providing basic amenities to slums** became part of the narrative, instead of destroying them.
- **Steps:** Town planning emerged as a governance tool, pushing slums to the peripheries.

Third (mid-1980s and late 1990s)

- **Conceptualisation:** Cities and urban spaces including the slums, were now looked at as assets and investments for the economic growth of the State. **Economic reasoning** was provided for interventions in cities rather than social ones.
- **Steps:** Housing policies adopted a broader approach encompassing issues like land, infrastructure and finance.
 - The first two **National Housing Policies** were introduced.
 - **The National Slum Development Programme** was launched in 1996 bringing back targeted funding from the union government towards slum redevelopment.

Fourth (2000s-)

- **Conceptualisation:** After the release of 2001 Census, the understanding of slums became based on data.
 - **Statistical information** explained that a lack of proper urban planning, growing population, increased urbanisation, the pressure on land, and price rise which made affordable housing difficult were some of the reasons for slum-formation.
 - The upliftment of slum dwellers was associated with **giving property rights** to them, rather than complete eradication.
- **Steps:** Urban housing deficit became the motto of housing policies.
 - The definitions of slums broadened due to the Census, leading to many **targeted schemes**.

The definitions of slums has continued to transform, from being a socio-political subject to a technical, economic object that can be dealt with technocratically (i.e. increasing reliance on technological solutions for urban problems). (Refer EPIC October 2023 (click) for Slum Redevelopment in India).

General Studies Paper II

1. Issues Related to Office of the Speaker

News: The Office of Speaker has come under scrutiny subsequent to the decision of Speaker of Maharashtra regarding recognition of party factions after the splits (in Shiv Sena and NCP).

What are the functions of Speaker in the Legislature?

- **Interpretation:** The Speaker is the final interpreter of the provisions of the Constitution (in the context of Legislature), the Rules of Procedure/Conduct of Business within the House.
- **Committees:** The Committees of the House are constituted by the Speaker and function under Speaker's overall direction.
- The Speaker is the **custodian of the rights and privileges** of the House, its Committees and the Members.
- The Speaker has the authority to decide whether a **Bill is a Money Bill or not?**
- **Disqualification:** The question of disqualification of a member of the House, on the ground of defection as defined in the Tenth Schedule, is decided by the Speaker.

What are the issues with the functioning of the Speaker?

- **Suspension/Disqualification of Members:** Speakers have been criticized for acting in a discriminatory manner against the members of the opposition parties. Conversely, they treat members of the ruling parties leniently even for gross misconduct. In the Winter Session of 2023, a record 146 MPs belonging to the Opposition parties were suspended from the Parliament.
- **Referral of Bills to Committee:** Bills having significant impact on the domestic polity of the country are not being referred to the Committees where they undergo rigorous scrutiny. Only 25% Bill have been referred to the Committees in the Parliament between 2014-2023.
- **Money Bills:** Certain Bills not falling in the domain of Money Bills have been certified so, e.g., the Aadhar Bill.

What should be the way forward?

- The SC in *Keisham Meghachandra Singh vs The Honble Speaker Manipur* (2020), had recommended that Parliament should amend the Constitution to vest the powers of the Speaker regarding disqualification in an **independent tribunal** to be headed by judges.
- In Britain, the Speaker, once elected, resigns from his/her political party, thus reflecting impartiality while presiding over the House. Adopting this practice will build confidence in the office of the Speaker.
- It is also important that Speakers avoid actions that are inappropriate and demonstrate '**impartiality**', in consonance with sound democratic practices.

2. Issues with Higher Education

News: The structural problems with the Higher Education System in India has contributed to the problem of unemployment.

What is the status of graduate unemployment in India?

- **Unemployment Rate:** In 2012, the unemployment rate among graduates was 20%; it had increased to 34% in 2021. Among postgraduates, it has risen from 18% in 2012 to ~37% in 2021.
- **Employability:** Some reports state that **fewer than half of India's graduates were employable** in 2021.
- **Status of Women:** India's female labour force participation is among the lowest in the world.

What are the issues with the education system leading to unemployment?

- **Deteriorating Quality:** The rise in the number of private colleges, industrial training institutes (ITIs) and polytechnic colleges has led to **lowering of quality**. The Governments and the University Grants Commission did not have the capacity to regulate these colleges.
- **Lack of Access to Higher Education:** A vast majority of the country's youth don't get higher education. Higher education enrolment rates are still about 27% (18-23 year olds).
- **Impact of Online Learning:** There have been learning deficiencies, which has affected students' abilities to acquire knowledge and become employable.

What other reasons are responsible for unemployment?

- **Lack of Job Creation in the Economy:** Economic growth has not contributed to commensurate growth in employment opportunities.
- **Sector-wise Issues in the Economy:** Agriculture has not become high tech, so graduates are not likely to join it. Jobs in the gig economy (like delivery agents) are not preferred jobs for graduates. In the services sector, the jobs being created require high knowledge and skills.

What are the structural problems with the Higher Education Sector?

- **Low R&D Expenditure:** India's R&D expenditure is only 0.7% of GDP. In South Korea, the spend is 4%.
- **Lack of Participation of the Private Sector in R&D:** Globally, the private corporate sector accounts for about 70% of total R&D expenditure. In India, the public sector accounts for some 70% of total R&D expenditure.
- **Lack of Research Funding to Universities:** A very small proportion of public funding goes towards research within universities. Most of it goes towards the Council of Scientific and Industrial Research, Indian Council of Medical Research, etc. Much of this research doesn't translate into usable products and processes.
- **Foreign Ownership of Research:** Indian researchers are absorbed in MNCs and foreign universities. There are 800 MNCs which have their global research hubs in India. The value of their research goes abroad.
- **Issues with the National Education Policy (NEP):** It has not led to substantive change in the education system so far.

What should be done?

- **Converting Research into Products:** Creating institutions that convert patents or research scientific research papers into products and processes.
- **Increasing Funding:** Funding to Universities must be increased. Private industry should be more forthcoming in collaborating with the Universities.
- **Vocational Training:** Greater enrolment of students of Class 10 and Class 12 in ITIs and vocational training courses can increase their employability.

3. Mulya Pravah 2.0

News: The UGC has released *Mulya Pravah 2.0* guidelines to promote ethics and values in higher education.

What is Mulya Pravah 2.0?

- *Mulya Pravah 2.0* are updated guidelines from the University Grants Commission (UGC) aimed at **promoting ethical practices and human values in higher education institutions**.
- The guidelines were introduced following unethical practices highlighted by a survey, such as favouritism, sexual harassment, and gender discrimination in various organizational processes.
- The Guidelines' primary focus is on **building value-based institutions** by developing respect for fundamental duties, constitutional values, and national bonding.

What are the Key Aspects of Mulya Pravah 2.0?

- **Transparency:** It emphasizes transparent administration and decision-making based on institutional and public interest, free from biases.
- **Accountability and Ethics:** Institutions are expected to ensure integrity, fairness, and high ethical standards in their administration.
- **Inclusivity and Respect:** The Guidelines encourage respect for constitutional values, inclusiveness, and global citizenship.
- **Confidentiality vs Public Scrutiny:** While the guidelines stress confidentiality, this contrasts with the right to information for accountability. Institutions are urged to disclose critical information publicly.
- **Role of Teachers and Staff:** Teachers are expected to be role models, maintaining good conduct and standards. Staff and students' unions should support administration constructively. *(Read more here).*

What are the concerns related to Mulya Pravah 2.0?

- **Suppression of Dissent:** The Guidelines may inadvertently suppress different opinions, crucial for institutional growth.
- **Vague Terminology:** Terms like 'dignified manner' for raising issues are not clearly defined, leading to potential misuse and misinterpretation.
- **Threat to Unions:** There's a concern that the guidelines could be used to **undermine the voices of staff and student unions**. Past instances of banning and suspending unions and accusing their representatives suggest a risk of similar actions under these guidelines.

What should be done?

- To improve Mulya Pravah 2.0, clear definitions of terms should be provided to prevent misuse.
- Ensuring a balance between confidentiality and public scrutiny is crucial.
- The guidelines should foster open dialogue and respect diverse opinions, especially from unions, to strengthen the integrity and growth of higher education institutions.

4. Rising Burden of NCDs in India

News: There has been an alarming rise in mortality due to non-communicable diseases (NCDs) in India.

What has been the trend of NCDs in India?

- The alarming trend of **deaths of non-elderly persons from heart-related issues** is marking a **paradigm shift in India's disease burden**.
- NCDs such as cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases have emerged as the **predominant public health concern**.
- According to a World Health Organization (WHO) report titled 'Invisible Numbers', **~66% of deaths in India in 2019** were attributed to NCDs.
- India has **101 million diabetics** and **136 million with prediabetes**. Cardiovascular diseases top the mortality charts, and **cancer incidence is projected to rise by 57.5% by 2040**.
- NCDs also pose a substantial economic burden. According to WEF, India could incur a staggering cost of **US\$4.58 trillion between 2012 and 2030** due to NCDs and mental health conditions.

What are the causes of rising prevalence of NCDs?

- The silent epidemic of NCDs is fuelled by **common behavioural risk factors**:
 - Unhealthy diet.
 - Lack of physical activity.

- Use of tobacco and alcohol among others.
- Factors like **genetic predisposition** towards conditions such as diabetes and heart disease further exacerbate the problem.
- A **sedentary lifestyle** brings with it issues such as stress, anxiety, and depression. More and more Indians are now working with a sedentary lifestyle.

What steps have been taken by the Government to address NCDs?

- The Government has launched the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke. The focus of the Programme is on **health promotion** and **prevention, strengthening of infrastructure** including human resources, **early diagnosis** and management and **integration with the primary health care system** through **NCD cells** at different levels for optimal operational synergies.
- **75/25 initiative** has been launched for screening and providing standard of care for 75 million individuals with hypertension and diabetes by 2025.

What should be done by individuals to prevent NCDs?

- Integrating more natural movement into daily lives. For instance, walking where possible instead of taking a vehicle. This can increase cardiovascular fitness, strengthen the bones, reduce excess body fat, and boost muscle power and endurance.
- Choosing '**slow food**' over fast food. This includes food that is prepared with the ingredients that are right for the body.
- Getting **comprehensive health check-ups** done regularly.
- Making **healthy lifestyle a top priority** and influencing others to adopt the same e.g., asking colleagues and loved ones what they did for their health.

5. People's Manifesto for a Just, Equitable and Sustainable India

News: Vikalp Sangam, a civil society organization, has released 'People's Manifesto for a Just, Equitable, and Sustainable India'. It can work as a guiding document for political parties to work for people's welfare.

What is Vikalp Sangam?

- Vikalp Sangam is a **collective platform** of **85 different people's movements** and **civil society organizations**.
- Its aim is to search for grounded **alternatives to the current model of 'development'** that has led to ecological destruction and rising inequalities.
- The VS process includes documentation of alternative initiatives across India.
- The group has not only crafted a collective vision for a sustainable and equitable India but also actively **advocates for policy changes** to realize this vision, **aiming to influence decision-making** at multiple levels.

What are the current challenges faced by India?

- **Unemployment Crisis:** Various economists have highlighted the jobless growth as a major concern before policymakers.
- **Ecological Disasters:** Incidents like the sinking of Joshimath and a dam burst in Sikkim illustrate environmental challenges.
- **Social and Cultural Conflict:** The conflict in Manipur is an example of wider social unrest.
- **Democratic Rights Erosion:** Some experts have raised concerns about democratic backsliding in India and suppression of dissenting voices through registration of cases against activists.

- **Economic Inequality:** There are significant disparities in wealth and income, with a need for more equitable distribution.

What solutions have been suggested by the 'People's Manifesto'?

Governance

- **Power to Local Bodies:** The manifesto calls for **real devolution of financial and legal powers** to village and urban assemblies.
- **Transparency and Accountability:** It demands comprehensive laws ensuring accountability of State agencies including public audits.
- **Independent Institutions:** Emphasizes reviving the independence of institutions and media.

Environmental Issues

- **Sustainable Policies:** Urges a National **Land and Water Policy** emphasizing conservation and community-led efforts.
- **Organic Farming:** Proposes conversion to organic farming by 2040.
- **Renewable Energy:** Advocates for decentralized renewable energy and phasing out of fossil fuels by 2030.

Others

- **Economic Reforms:** Focuses on job creation in small manufacturing and crafts, extending employment guarantees to urban areas.
- **Social Justice:** Addresses inter-faith conflicts, prioritizes rights of marginalized groups, and suggests increased spending on education and health.
- **Decentralization:** Seeks fuller implementation of panchayat laws and a National Environment Commissioner role.

The Political parties should incorporate these points in their policies, ensuring a comprehensive approach to addressing India's challenges and fostering a more balanced and equitable society.

6. Deterioration of India-Maldives Relationship

News: The relationship between India and Maldives has deteriorated to a new low since the new Government has come to power in Maldives.

How has the relationship between India and Maldives deteriorated in recent times?

- Three Ministers of Government led by the President Muizzu had made **derogatory remarks against the Prime Minister of India**, following his (PM's) visit to Lakshadweep promoting tourism in the islands. The Ministers were subsequently suspended, but it showed level of distrust between the two countries.
- The current President, Mohammed Muizzu, won the elections on the name of '**India Out**' campaign. Since coming to power, he has asked the Government of India to **withdraw all Indian military personnel from Maldives**.
- Maldives **skipped the latest meeting of the Colombo Security Conclave**. This signalled its reservations about defence engagement with India.
- Maldives has **refused to renew the Hydrographic Survey Agreement** with India. Hydrographic surveys **map out water depth**, the **shape of the seafloor** and **coastline**, the **location of possible obstructions**, and physical features of water bodies. This can help ensure the efficiency and safety of maritime traffic. Maldives may soon allow Chinese Ships for such surveys in its waters. China may use such surveys for anti-submarine warfare against India in the waters of Indian Ocean.
- After his election, the Maldivian President visited Turkey and China on official visits. Traditionally, the newly elected President used to visit India as the first official foreign visit.

What are the factors affecting the relationship between India and Maldives?

- **Internal Politics of Maldives:** The two major parties have differing ideologies. One party is pro-India while the other is sharply anti-India and pro-China. The latter has tried to whip-up anti-India sentiment among the Maldivian electorate.
- **Big-Brother Syndrome:** India's massive economic and military disparity vis-à-vis its neighbours make India vulnerable to attacks of 'Big Brother' by political parties (for electoral benefits).
- **India's Internal Politics:** Some aspects of India's internal politics on issues like illegal migration, social media jingoism and calls for boycotting a smaller neighbour can lead to an anti-India sentiment.
- **Geopolitics:** Smaller countries like Maldives usually try to use the rivalries among greater powers (India and China) to their own advantage.

What should be the approach?

Both countries need to reassess their responses to this situation.

Maldives

- Maldives cannot afford to alienate India because of:
 - **India's proximity to Maldives.** Maldives is only 700 km from the Indian coast and over 6,000 km from China. India was the first to help Maldives during the tsunami in 2004, drinking water crisis in 2014 and during the COVID-19 pandemic.
 - India is a rising economic power and Indian tourists made up the most arrivals to Maldives post-COVID-19.
 - India has been a **net security provider** in the Indian Ocean.
 - India has supported **infrastructure and development projects** in Maldives.

India

- India must realise that hostility and aggression towards a much smaller neighbour serves no purpose.
- An aggressive attitude will only provide more fertile ground for China to gain more influence.
- India must continue to engage with the political leadership of Maldives as well as its people. India must address the concerns of the people as well as the Government of Maldives. India should consider providing more concessions to Maldives e.g., more seats in medical, engineering and other courses in higher education.
- Both countries can benefit from a stronger relationship through the intense **strategic partnership** and **cooperation on the international stage** shown in the past.

Hence, India should ensure that these developments do not change the basic structure of bilateral ties or affect regional stability. (Refer EPIC February 2023 (click) for India-Maldives Relationship).

7. Illegal Migration from India

News: ~300 Indians, who were trying to migrate illegally to the US, were detained in France and deported back to India. The incident has highlighted the issue of illegal migration from India.

What is the trend regarding illegal migration from India?

- According to the latest US Customs and Border Protection data; 96,917 Indians were arrested while crossing illegally into the US between November 2022-September 2023.
- The number has consistently risen. The number of arrested illegal migrants was 19,883 in 2019-20; 30,662 in 2020-21 and 63,927 in 2021-22.

What methods are used by illegal migrants?

- Illegal Migration from India is called taking 'donkey routes'.

- Migrants transit through various countries that have lenient visa policies to finally reach their intended destinations, particularly the US, the UK, Canada and the EU.

- Sometimes, migrants resort to dangerous ways of crossing a border like:

- Traversing dense forests inhabited by wild animals and criminal gangs.
- Travelling in sub-zero temperatures.
- Crossing rivers and other water bodies in rickety boats and treacherous conditions.

- **Route used to enter Europe by the illegal migrants**

Siberia has Visa free regime for Indians. This is exploited by creating fake travel history to get into Siberia. From there, the illegal migrants enter into Austria, Hungary and Romania, and ultimately to Italy and France.

- **Route used to enter US by illegal Migrants**

- Countries like Ecuador, Bolivia, and Guyana have visas on arrival for Indian citizens. The illegal migrants use this route to get into US. Nowadays, many illegal migrants first go to Europe, and from there, directly to Mexico and ultimately get into US.



What factors contribute to illegal Migration from India?

- **Farming Crisis:** Low agricultural productivity, debt burdens, and unpredictable weather patterns have contributed to agrarian distress and farming crisis. This crisis has led to plummeting of incomes and exacerbated the vulnerability of individuals, making them susceptible to exploitation.
- **Unemployment:** High youth unemployment in rural areas has driven individuals to seek illegal migration from India.
- **Poverty:** Economic hardship and poverty are significant drivers of illegal migration.
- **Lack of Educational Opportunities:** Limited access to quality education hampers skill development among the youth, forcing them to seek high paying unskilled jobs outside.
- **Social Pressures:** Social and familial expectations contribute to the pressure on young individuals to provide stable income to their families.
- **Trafficking Racket and Exploitation:** Trafficking rackets are widespread, particularly in rural Punjab and Haryana. Individuals in these regions fall prey to promises of a better future in the US exacerbating illegal migration from India.

What should be the way forward?

- **Agricultural Reforms:** Strengthen and expand policies like **PM-KISAN**, focusing on technology integration and market access. This will increase agricultural income and remove agricultural distress.
- **Job Creation:** Enhance MGNREGA coverage and introduce sector-specific initiatives to boost employment in rural areas.
- **Education and Skill Development:** Invest in education infrastructure and promote vocational training through Skill India Mission.

- **Social Welfare Programs:** Extend the reach and impact of existing schemes, ensuring they address the specific needs of vulnerable populations.
- **International Collaboration:** Collaborate with destination countries like US and Europe, sharing best practices and ensuring fair and legal migration pathways.
- As India grapples with the complexities of illegal migration, these targeted interventions can pave the way for a more sustainable and inclusive future. By addressing the root causes and providing viable alternatives, the government can empower its citizens and create a conducive environment for growth and prosperity.

8. India-Africa Relationship and South-South Cooperation

News: The inclusion of African Union into G20 with India's efforts has added a new pillar to India-Africa Relationship. Africa has also been central focal point in India's engagement with the Global South.

What is the history of India-Africa Relationship?

- **Historical Cultural and Trade Relationship:** Trade relationship existed between the Indus Valley and the contemporary African civilisations. There was a development of 'monsoon culture' through trade, with a close association of people from both continents. The colonial phase saw forceful migration of indentured labourers or *girimitiyas* to British colonies in Africa.
- **Historical Political Relationship:** Gandhiji's tools of **civil disobedience** and **non-cooperation** were tested on the soil of Africa. India and Africa used this ideological and historical ties in a decolonised world to **oppose neo-colonialism**. India and Africa also collaborated in the **Bandung Conference** to advance the agenda of the Global South, which ultimately led to the formation of **Non-Aligned Movement (NAM)**.

What are the areas of cooperation between India and Africa?

Political

- Regionalisation and reorientation of global governance norms in the 21st century have produced many strong political institutions amid the south-south Cooperation like the **Asia Africa Growth Corridor (AAGC)**.
- India and Africa have converged on the UNSC membership expansion, and India has supported the **Ezulwini Consensus**. (Refer EPIC October 2022 (click) for Reforms in the United Nations Security Council).
- India has also stepped its engagement in regional organisations like ECOWAS, African continental Free trade Agreement, BRICS, OIC, NDB etc.

Economic

- India has increased its investments in Africa to boost Africa's economic growth and reduce the poverty levels in the global south e.g., EXIM Bank's Focus Africa Programme, India-Africa Partnership project, India-Southern African Customs Union Preferential Trade Agreement.
- Trade between India and Africa has touched US\$ 100 billion in 2022-23.
- 22.5% India's FDI outwards flow is towards Africa. India's current investment in Africa is around US\$ 32 billion.

Security

- India-Africa share security cooperation synergies on issues like curbing piracy, Humanitarian and Disaster Relief (HADR) and maritime security.

Climate Change and Technology Cooperation

- India and Africa have been cooperating in the climate change domain through organisations like ISA and CDRI. These organisations have also helped India extend its soft power in Africa.

Other Areas of Cooperation

- India has provided Africa with India's skilled workforce like engineers, trained nurses, digital public infrastructure and health care equity.

What is the significance of India-Africa Relationship?

- **Huge Economic Potential:** The African Continental Free Trade Area (AfCFTA) provides a wide scope to create the largest free trade area in the world by geography and an opportunity to lift 30 million people out of extreme poverty. It can help promote India-Africa bilateral trade and investment.
- **Potential for Indian Businesses:** There are opportunities in trade with Africa in the sectors of Information Technology (IT), Mobile payment solutions, banking, and financial services.
- **Infrastructure Development in Africa:** India has the world's 3rd-largest start-up ecosystem. It could count on its strengths to fortify the digital infrastructure in Africa. It can contribute to the achievement of the continent's **Agenda 2063**.
- **Achievement of Common Agenda:** Most African nations are developing countries just like India. This creates a common understanding on multiple issues. India and Africa share common grounds on reformation of the UNSC, Climate change agreements, Trade Issues and WTO negotiations.
- **Soft Power:** Successful transformation of Africa into a 'continent of growth' from the 'continent of darkness' would enhance India's soft power and leadership position in the global south.

What are the challenges in India-Africa Relationship?

- **Economic Competition:** There is sharpening of competition among at least half a dozen external partners such as China, Russia, the US, the EU, Japan, the UAE etc. The competition is mainly for strengthening their relations with parts of Africa to ensure market access, gain energy and mineral security, and increase political and economic influence.
- **Rising Role of China:** China has emerged as 'the infrastructure developer', 'the resource provider', and 'the financier.' It has invested enormously in Africa in terms of money, materials and diplomatic push. Since 2007, Chinese leaders have visited the continent 123 times, while 251 African leaders have visited China. This has limited India's room in the region's geopolitical arena.
- **Gaps in Indian Strategy:** India's model of development cooperation in Africa lacks a clear strategy in comparison with the Chinese Model. India also lacks the financial wherewithal like China to invest deeply into the African economy.
- **Lack of Focus:** Geopolitical tensions in Asia and the imperative to consolidate its position in the Indo-Pacific region have compelled India to deviate from greater focus on the India-Africa relationship. Instead, India concentrated on its ties with the United Kingdom, the EU, and the Quad powers.
- **Racial Attacks:** Incidents of racial attacks on African nationals have severely dented India's image in the region.

What should be the way ahead to strengthen India-Africa Relations?

- **Strengthen Political and Diplomatic Cooperation:** India must restore periodic leaders' summits through the India-Africa Forum Summit. India must establish a dedicated secretary in the Ministry of External Affairs (MEA) for African affairs.
- **Enhance Defence and Security Cooperation:** India must increase the number of defence attachés in Africa and expand dialogue on defence issues. India must also strengthen **maritime collaboration** and extend Lines of Credit to facilitate defence exports.
- **Deepen Economic and Development Cooperation:** India must promote India-Africa trade through the creation of an Africa Growth Fund (AGF) to enhance access to finance. India must also implement measures to improve project exports and enhance cooperation in the shipping domain.
- **Socio-Cultural Cooperation:** There must be greater interaction between Indian and African universities, think tanks, civil society, and media organisations. India must establish a National Centre for African

Studies and rename **scholarships under Indian Technical and Economic Cooperation (ITEC)** and **Indian Council for Cultural Relations (ICCR)** after **famous African personalities**.

- **Implementation of 'Roadmap 2030'**: India must establish a special mechanism for implementing the 'Roadmap 2030' through collaboration between the MEA and the National Security Council Secretariat. By following this roadmap and implementing the recommended measures, India can further strengthen its partnership with Africa, contribute to its growing global stature and leadership among the countries of global south.

9. Significance and Challenges of International Court of Justice

News: South Africa took Israel to International Court of Justice accusing Israel of committing genocide in Gaza.

What is the structure and mandate of the International Court of Justice (ICJ)?

- It is the **principal judicial organ** of the United Nations (UN). It was established in June 1945 by the **Charter of the United Nations** and began work in April 1946.
- ICJ is situated at the **Peace Palace in The Hague (Netherlands)**. It is one of the **6 principal organs** of the UN, and the only one not headquartered in New York (USA).

Parameter	Details
Number of Judges	<ul style="list-style-type: none"> • The ICJ is composed of 15 judges. • The 15 judges belong to various regions: Africa (3), Latin America and the Caribbean (2), Asia (3), Western Europe and Others (5), Eastern Europe (2).
Tenure of Judges	<ul style="list-style-type: none"> • The judges are elected for 9 years. • 1/3rd of the Court is elected every 3 years. • Judges are eligible for re-election.
Method of Election	<ul style="list-style-type: none"> • The judges are elected by the UNGA and UNSC. • These organs vote simultaneously but separately. • A candidate must receive an absolute majority of the votes in both bodies.
Independence	<ul style="list-style-type: none"> • ICJ is not composed of representatives of Governments. • Judges make solemn declaration in open court that they'll exercise their powers impartially and conscientiously. • No Member of the Court can be dismissed unless, in the unanimous opinion of the other Members, he/she no longer fulfils the required conditions. (No ICJ member judge has been dismissed till date).
Administration	<ul style="list-style-type: none"> • ICJ is assisted by a Registry which is its administrative organ. • Its official languages are English and French.

Role and Mandate

The ICJ acts as a world court with 2-fold jurisdiction.

- To **settle legal disputes submitted to it by States** in contentious cases like settling disputes between countries and determining "State Responsibility" for crimes committed in violation of international law. Only States which are **members of the UN** and which have become **parties to the Statute of the Court** or which have **accepted its jurisdiction** under certain conditions, are parties to contentious cases.
- To **give advisory opinions** on legal questions referred to it by authorized United Nations organs and specialized agencies.

Judgments of the ICJ

- The judgment of the ICJ is final, binding on the parties to a case and without appeal. At the most, it is **subjected to interpretation** or **reversion** upon the discovery of a new fact.
- If a State fails to perform the obligations incumbent upon it under a judgement, the other State can **bring the matter before the Security Council**. The UNSC is empowered to recommend or decide upon measures to be taken to give effect to the judgment.

What is the importance of the ICJ?

- **Peaceful Dispute Resolution:** Countries bring their legal grievances before the court, and its decisions are binding on the parties involved e.g., in the Nicaragua v. United States case (1986), ICJ held US responsible for violation of International law, for supporting armed activities against Nicaragua. In the Burkina Faso and Republic of Mali Frontier Dispute Case (1986), ICJ facilitated the peaceful resolution of a territorial dispute.
- **Clarification of Complex Legal Issues:** Even though ICJ's **advisory opinions are non-binding**, they carry significant weight in clarifying legal issues e.g., the ICJ's advisory opinion on the 'Legality of the Threat or Use of Nuclear Weapons' (1996) addressed the legality of nuclear weapons under international law.
- **Advisory Role in Diplomacy:** The ICJ's advisory opinions also **support diplomatic efforts** and **facilitate resolution of contentious issues** between states e.g., South Africa's case against Israel (2023) for genocide in Gaza, could lead to an advisory opinion and influence diplomatic efforts in the Israel-Palestine conflict.
- **Human Rights Violation and Genocide Cases:** ICJ has contributed to the development and enforcement of international human rights standards e.g., In Bosnia and Herzegovina v. Serbia and Montenegro case (2007), the ICJ ruled that Serbia had violated the **Genocide Convention** during the Bosnian War.
- **Reparations and Compensation:** The ICJ has the authority to order reparations and compensation for damages caused by one State to another. This has contributed to accountability for wrongful actions. Major rulings on reparations have also been adhered to by the concerned parties e.g., In Democratic Republic of the Congo v. Uganda case (2005), ICJ ordered Uganda to pay US\$ 325 million reparations for human rights violations and damages during the Congo-Uganda conflict. This order was complied by Uganda.
- **Development of International Law:** The ICJ's decisions and interpretations of international law have contributed to the **development and clarification of legal principles** and has set precedents for future cases e.g., In Qatar v. Bahrain territorial and maritime dispute case (2001), ICJ's decisions have influenced the understanding and development of international law in these domains.
- **Enhanced Participation of States:** The ICJ has been successful in furthering the participation of States that have not accepted its compulsory jurisdiction, by invoking its authority through dispute settlement clauses or special agreements.

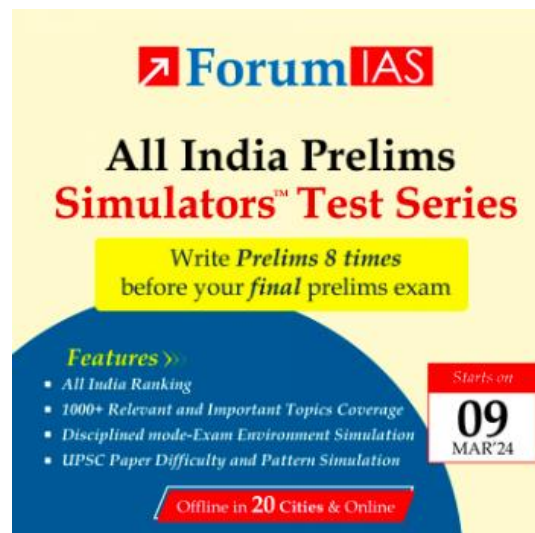
What are the challenges and limitations of the ICJ?

- **Lack of Enforcement Mechanism:** The UN Charter authorises the UNSC to enforce the court's decisions. However, its compliance and enforcement is often at the mercy of the power politics of the permanent members of the Security Council.
- **Non-participation of Powerful States:** Big power players have often refused to participate in the ICJ proceedings e.g., Russia's refusal to participate in ICJ proceedings in the Ukraine vs Russia case (2022). The US had refused to submit to the ICJ jurisdiction in the Nicaragua vs the US case (1986).
- **Political Bias of Member Judges:** The impartiality of ICJ judges have been compromised by political considerations. Member judges have sometimes aligned their decisions with the interests of their home countries e.g., the Judges from Russia and China voted against the ICJ decision ordering Russia to halt military operations in Ukraine In 2022, revealing potential political influences.

- **Lengthy Procedures:** The ICJ is marred by lengthy and bureaucratic processes; resulting in inordinate delays in delivery of Justice e.g., the 2019 case instituted by Gambia against Myanmar for its military crackdown on Rohingya refugees is still in trial.
- **Limited Jurisdiction:** The ICJ's jurisdiction is limited to cases where states voluntarily submit to its authority. Some States may not accept the compulsory jurisdiction of the court, reducing its scope.
- **Potential for Fragmentation of International Law:** The existence of multiple international courts and tribunals has raised concerns about potential contradictions in rulings. This can lead to uncertainty and fragmentation of international law. The coexistence of the ICJ with other judicial bodies, such as the International Criminal Court (ICC) and Permanent Court of Arbitration (PCA) has resulted in **varied interpretations of legal principles**.

What should be the way forward to strengthen the ICJ?

- **Strengthen Enforcement Mechanisms:** It can be done by reforming the UNSC like increase in permanent membership or no veto in ICJ decisions. This will help in reducing the impact of political considerations on enforcement.
- **Alternative Dispute Resolution (ADR) Methods:** The ICJ can explore the use of alternate methods, such as mediation or arbitration, in certain cases to expedite resolutions and promote amicable settlements
- **Impartiality and Independence of Members:** ICJ must promote transparency in the selection process. It must encourage the judges to adhere strictly to the principles of the court rather than aligning with the political interests of their home countries e.g., India's appointee to the ICJ, Justice Dalveer Bhandari voted in favour of provisional measures against Russia which was in conflict with India's official stance at the UN.
- **Address Fragmentation of International Law:** Efforts should be made to coordinate and harmonize the decisions of various international courts and tribunals like ICC, PCA, to avoid contradictions and inconsistencies in international law.
- **Enhancement of Procedural Efficiency:** The ICJ must explore ways to **streamline its procedures** and reduce the time taken for cases to reach a final judgment.
- **Improve Accessibility of Developing Countries:** Capacity-building programs, legal assistance and financial support must be extended to developing countries to ensure their effective participation in the court's proceedings.
- **Review and Update the ICJ's Charter:** A comprehensive review of the ICJ's founding charter must be undertaken to remove any outdated provisions and adapt its structure to the evolving needs of the international community.



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General Studies Paper III

1. Economic Growth in Poor States

News: High economic growth in poorer States is necessary to achieve Developed Economy status by 2047.

What is the economic status of poorer States?

- For India to become a developed country by 2047, poorer States like Bihar, West Bengal and Uttar Pradesh must transition to a faster economic growth trajectory. These States together constitute **a third (~33%) of India's population** (460 million).
- **Low Average Income:** Bihar's average income is less than a third (32%) of the country's average income. UP's average income is under half (49%).
- **Historically Low Growth:** In the preceding decade (2012-2022) and before, the growth rates of UP and Bihar were below the national average. West Bengal grew only at 3.9% over the decade from FY2012-2022.
- In contrast, other poorer states like Madhya Pradesh, Odisha, and Assam have grown faster than the national average from 2012-2022.
- **Recent Rise in Economic Growth:** These states have however experienced GDP growth much higher than the national average in FY23 (Bihar (10.7%), UP (8.4%) and West Bengal (8.6%)).

Which sectors can promote economic growth in the poorer States?

- **Agricultural Sector:** Punjab and Haryana should shift away from cereals to higher-value crops; UP and Bihar could benefit from a second Green Revolution (wheat and paddy).
- **Tourism:** Increased investment in tourism, highlighting the rich historical heritage of the Gangetic Plain, can be a huge employment generator.
- **River Transportation:** Developing better river transport through the Ganges can boost inter-State commerce and provide new livelihood opportunities.
- **Demographic Dividend:** These States will experience a continuous **increase in their share of the working-age population** for another decade (especially UP, Bihar), while richer states—especially in the South—will see that share declining. Utilizing this dividend through focus on creating jobs in labour-intensive services sector and MSMEs should be the top priority.

What needs to be done?

- Focus has to be on education and skilling to realize the demographic dividend.
- **Infrastructure Development:** Within infrastructure, focus on expressways is important but **rural roads** and **rural electrification** must be prioritised.
- **Developing IT-based Services Sector:** These offer a pathway to higher incomes for these **landlocked States**.
- The condition of law and order must be improved and crime must be controlled. The perception of the States must be changed to more business-friendly States.
- The economic performance of States like UP, Bihar and WB will decide whether India transitions to a developed economy or gets caught in the **middle-income trap**. Their development is also necessary to **prevent large regional disparities** and the resulting social and political tensions. (Refer EPIC December 2023 (click) for Middle Income Trap).

2. Issues with India's Growth Model

News: Some economists have cautioned against prioritization of services sector over manufacturing as the main driver of India's economic growth.

What has been India's development model?

- India's service sector, especially the high-technology, is growing very fast compared to manufacturing. This shift differs from **traditional models** where countries **transition from agriculture to manufacturing** first before shifting to services.
- India's services model **leverages global service demand**, benefiting from **outsourcing trends** and advances in information technology, making it a part of the global supply chain for services.

What are the issues with this model?

- **Unbalanced Growth:** Manufacturing sector has plateaued at or below 20% of the economy. India's growth relies heavily on the services sector. Without a strong industrial base, growth might **not be sustainable in the long term**.
- **Unemployment:** Despite economic growth, India faces a high unemployment rate over 8%. Specifically, youth **unemployment for ages 15-24 soars above 40%**, indicating job creation is not keeping pace with the growth of the labour force.
- **Quality of Employment:** The service sector is creating jobs primarily in **low value-added, low-skill areas**, not in high-tech services, failing to meet the higher aspirations of a more educated workforce.
- **Skill Mismatch:** While **producing 2.2 million STEM graduates** yearly, the development model faces challenges with the employability and industry relevance of these graduates.
- **Emphasis on Aggregate GDP:** The development model often focuses on increasing total GDP rather than GDP per capita, overlooking the aspect of **individual prosperity**.

What should be done?

- **Combine Growth Models:** India should integrate growth in both the service and manufacturing sectors. It needs to extend beyond the PLI schemes, which focus more on production than employment, by incentivizing private industry expansion.
- **Policy Reforms:** Implement land and labour regulatory reforms to attract more investment and incentivize private industry to scale up, creating more jobs.
- **Address Skill Deficit:** Focus on closing the skill gap by aligning education with industry needs and by raising its investment in higher education. This will ensure the large young population is ready for the jobs being created.

3. Issues with India's Inverted Duty Structure

News: Inverted duty structure has continued to hamper the growth of India's manufacturing sector.

What are the problems with India's import duties?

- Inverted duty structure is a situation when **inputs are taxed at higher rates than finished products**. This can make domestic industry import dependent. It has several negative impacts:
- **Increased Production Costs:** Inverted duties elevate production costs. This impacts sectors like textiles and engineering, diminishing their **global competitiveness**.
- **Complex Tax System:** India's import tax system is marked by complexity, with **multiple layers of tariffs**. This sector-specific, item-by-item tariff approach **deters foreign investment**.
- **Negative Global Perception:** The rise in average import tariffs from 13.5% in 2014 to 18.3% in 2021 acts a barrier to international trade, drawing international criticism.
- **Hindered Global Integration:** High tariffs and a complex system make it challenging for Indian manufacturers to integrate into global value chains, crucial for economic growth in a globalized economy. (Refer EPIC September 2022 (click) for Building Resilient Global Value Chain (GVC) Linkages in India).

What initiatives have been taken to overcome these issues?

- **Inter-Ministerial Coordination:** The Ministry of Commerce has reached out to the Ministry of Finance to rectify these distortions for over a dozen items in the Union budget, indicating a collaborative approach to tackle the issue.
- **Focus on Rationalization:** Previous efforts focused on increasing tariffs on imported final products. The current initiative takes a broader approach, aiming to **simplify the tariff system** by re-evaluating basic customs duties and other charges.

What should be done?

- **Revise Inverted Duty Structure:** Reform the import duty system to lower taxes on inputs, particularly in critical sectors like textiles and engineering, to reduce production costs and enhance global competitiveness.
- **Simplify and Rationalize Tariffs:** Make the tariff system more **transparent** and **investor-friendly**, to attract foreign investment and integrate Indian manufacturing into global value chains.

4. Evergreening of Loans

News: RBI Governor had raised concerns over banks adopting innovative methods for the evergreening of loans. Such practices pose risk to the banking system. RBI must step up its regulatory vigilance.

What is the Evergreening of Loans?

- Evergreening loans is a practice of **extending new or additional loans to a borrower** who is **unable to repay the existing loans**. Through evergreening, Banks try to revive a loan that is on the verge of default (i.e., becoming an NPA) by granting further loans to the same borrower.
- It is a form of **zombie lending**. Zombie lending refers to the practice of providing credit to entities that do not have the capability to repay. Through evergreening, **banks conceal the true status of the NPAs**.
- Evergreening falls in the domain of misgovernance. Some banks have extended loans to wilful defaulters to keep them out of the defaulters' books. (Refer EPIC January 2023 (click) for Status of Non-Performing Assets (NPAs)).

What are the RBI's findings on the practice of Evergreening of Loans?

- **Banks' Innovative Methods:** Banks used creative ways to hide stressed loans, like Sale and buyback arrangements between two banks to reset the history of a stressed loan or banks extending loans to entities related to already stressed borrowers, using this to hide the actual stressed nature of the original loans.
- **Use of Alternate Investment Funds (AIF):** Banks invested in AIFs, which then bailed out stressed entities, indirectly continuing the cycle of evergreening. (AIF are investment vehicles that pool funds to invest in non-traditional assets like real estate, hedge funds, and derivatives. They are lightly regulated by the Securities and Exchanges Board of India (Sebi) and are typically subscribed to by high-net-worth individuals or entities, aware of the associated risks).
- **Use of Commercial Papers (CPs):** Mutual funds heavily invested in CPs issued by banks, which offered higher returns than government securities. Banks then used CP proceeds for short-term funding, contributing to indirect evergreening.
- **Rapid Growth of unsecured loans:** Non-Bank Finance Companies (NBFCs) unsecured loan assets grew by 51% up to 2022-23, raising concerns about under-reported stressed loans.

What are the implications of Evergreening of Loans?

- **Misrepresentation of Loan Quality:** Use of evergreening tactics distort the actual health of loan portfolios of the banks.
- **Governance and Audit Failures:** Such practices indicate lapses in the governance and audit mechanisms within banks.

- **Round-Tripping:** The practice of mutual funds investing in commercial papers and returning funds to banks, can lead to:
 - Increase in the correlation between bank and mutual fund performances, **escalating market concentration risk**.
 - If banks face liquidity issues, mutual funds might be unable to redeem commercial papers, possibly triggering a **liquidity crisis**.
 - Evergreening through such round-tripping **hides the true credit risk**, as commercial papers might be under-priced compared to the actual borrowing cost.
- **Regulatory Challenges:** Continual adaptation of evergreening methods poses significant challenges for regulators like RBI to ensure financial stability.

What should be done?

- To tackle evergreening, it's vital that regulatory bodies like the RBI and SEBI increase their oversight and seal regulatory gaps.
- Improving transparency in loan reporting, especially in fast-growing areas like non-bank financial companies, is key.
- Reinforcing governance and audit processes in banks and dealing with the complexities of cross-regulatory financial instruments is crucial to uphold the financial system's integrity and stability.

5. IMF's Report on Indian Economy

News: The IMF has released a report on India's Currency and Government Debt.

What are the IMF's observation on India's Currency and Government Debt?

- India has shown strong growth in the last year, despite global challenges. This has been due to resilience of India's financial sector characterized by low non-performing assets, an increase in domestic credit, and adequate capital and liquidity buffers.

Observation on India's Currency

- **IMF Observation:** The IMF observed the Indian Rupee's stability against the US Dollar, noting a narrow fluctuation range between 81.04 and 83.29 per US\$ (a 2.8% band), compared to the Euro-dollar rate band of 7.3%. Consequently, it reclassified India's exchange rate from "floating" to a "**stabilized arrangement**" for the period between December 2022 and October 2023.
- **India's Response:** The RBI has asserted that the **Rupee is market-determined** with interventions only for **excessive volatility**, contesting the IMF's short-term view.

Observation on Government Debt

- **IMF's Warning:** The IMF warns that if past economic shocks recur, debt could exceed 100% of GDP in the medium term. It also warns that **long-term risks are high** because considerable investment is required to meet India's climate change mitigation targets. High debt levels pose risk to both growth and financial stability.
- **India's Position:** India has countered the observations. India argues that the sovereign debt risk is low since it's **predominantly in domestic currency**.
- Despite various economic shocks, India maintains that its general government debt level has been relatively stable, barely increasing from 81% in 2005-06 to ~84% in 2021-22 and back to 81% in 2022-23.
- India suggests that the IMF's assessment might be overlooking the broader historical stability and resilience of India's debt management.

Why did the Indian currency decline narrowly between December 2022 and October 2023?

Internal Factors

- **Trade Deficit:** India's trade deficit averaged US\$ 20 billion a month during the period, a slight improvement from the previous year's US\$ 22.1 billion.
- **Current Account Deficit:** The current account deficit was US\$ 27.3 billion, nearly half of the previous year's US\$ 53.5 billion.
- **Foreign Investment:** Net foreign investment increased to US\$ 30.7 billion, despite a decrease in FDI (by almost US\$ 22 billion), offset by a surge in FPI.
- **Forex Reserves:** Forex reserves rose from US\$ 563 billion to US\$ 586 billion indicating robustness of reserves.

External Factors

- **Global Dollar Strength:** The increase in the US Federal Reserve's policy funds rate strengthened the dollar, impacting other currencies including the Rupee.
- **Rupee Volatility vs. Dollar:** Rupee's movement was narrower (2.8%) compared to other major currencies like the Euro (7.3%), indicating active central bank management to stabilize it amidst global volatility.

What recommendations have been provided by the IMF?

- **Fiscal Reforms:** The IMF recommends reviewing the **Fiscal Responsibility and Budget Management Act** and implementing a **Medium-Term Fiscal Framework (MTFF)** to manage debt and rebuild buffers. In this regard, balancing public investment for growth with overall fiscal sustainability will be crucial.
- **Adequate Foreign Exchange Reserves:** Adequate foreign exchange reserves have proven crucial in preventing pressure on the Rupee during global interest rate hikes in 2022. The IMF has emphasized that it is important for the RBI to maintain adequate foreign exchange reserves.
- **Monitoring:** IMF suggests monitoring financial stability and addressing emerging vulnerabilities, especially the increase in unsecured personal loans.
- **Strengthen Financial Reserves:** It suggested for the enhancement of regulatory and supervisory standards and encourage public banks to strengthen financial reserves.
- **Structural Reforms:** It also emphasized the need for comprehensive structural reforms to leverage India's demographics for inclusive and sustainable growth.

6. India's Agricultural Exports

News: India's agricultural exports have witnessed a rising trend in recent times.

What is the current status of India's Agricultural Exports?

- In 2022-23, the value of India's agricultural exports was US\$ 52.50 billion, while in 2021-22 it was \$50.21 billion.
- India's export basket includes: Basmati rice, non-basmati rice, sugar, spices, and oil meals (~51.5% of India's agricultural exports).
 - Other agri products include coffee, tea, tobacco, fresh and processed fruit and juices, groundnuts, fresh vegetables, dairy products, and live animals. India is also a large exporter of buffalo meat and marine products.
- The Union government expects agricultural exports to almost double to around **\$100 billion by 2030**.

What are the challenges faced by India's Agricultural Export Sector?

- **Low on the Agri-export Value Chain:** Majority of India's exports are **low-value and semi-processed**.
- **Inadequate Infrastructure:** This includes **lack of cold chain infrastructure** and **inefficient logistics**. It leads to spoilage and decreases the export competitiveness of Indian products (due to quality issues and higher costs).

- **Structural Issues:** Issues such as the **small size of landholdings** and a **lack of access to credit** leads to farmers not transitioning to commercial production.
- **Arbitrary Export Curbs:** India has recently banned exports various agricultural products (such as rice and wheat). This harms India's credibility as a reliable source of food exports.
- **Lack of Diversification:** According to a report, India's agri-export basket is concentrated (a few products accounting for a large share of exports).
- **Logistical Challenges:** This includes **high freight rates** and **container shortages**.

What steps have been taken by the Government to boost agriculture exports?

- **Agri-Export Policy:** It calls for overhauling infrastructure and logistics, a greater involvement of state governments, and developing export-centric clusters as well as ensuring surplus quality produce.
- **Agri-Cells in Indian embassies** across 13 countries have also been set up.

What should be done?

- **Regarding Export Curbs:** Instead of opting for a protectionist trade policy, the Government should make smart changes in the trade policy to control food inflation.
- **Regarding Lack of Diversification:** India should aim to increase diversification in its food export basket to contain the risk to overall exports declining due to a decline in the production of one item or the other. For instance, India hopes to give a boost to exports of value-added **millet products**.
- **Moving Up the Value Chain:** Attracting private investment in processing and related activities will help boost exports over time.

This will help push agricultural growth in the country as well as raise farmers' incomes. (Refer EPIC December 2022 (click) for India's Agriculture Exports: Status and Challenges).

7. Overproduction of Cereals in India

News: Rice and Wheat continue to play a dominant role in Indian agriculture. This has several implications.

What is the status of India's production of cereals?

- **Production Levels:** India's cereal production is ~300 million tonnes annually. In 2022-23, the production was 304 million tonnes.
- **Consumption Trends:** The domestic consumption of cereals is less than 200 million tonnes, as Per Capita Cereal Consumption (PCCC) has been declining since the late 1970s.
- **Surplus Situation:** A significant cereal surplus exists, with a gap of about 100 million tonnes between production and consumption. The exports of cereals have risen from 23 million tonnes in 2020-21 to 32 million tonnes in 2021-22. Despite the rise in exports, the available surplus is huge.

What are the reasons for the gap between production and consumption of cereals?

- **Decreasing Per Capita Consumption:** Cereal consumption per person has been dropping, showing a decrease from 15.3 kg per month in rural areas in 1977-78 to 11.3 kg in 2011-12.
- **Changing Dietary Habits:** Urbanization, higher education levels, and diversification in food intake have contributed to reduced cereal consumption.
- **Underestimation in Feed Usage:** Experts suggest that the Economic Survey overestimates cereal 'net availability' due to a low allowance for Seed, Feed, and Wastage (SFW- 5%, 5%, 2.5% respectively), set at 12.5%. They argue the 5% feed component is underestimated. Doubling it to 10% could decrease the cereal surplus by about 15 million tonnes, yet a significant surplus would persist.

- **Industrial Uses of Cereals:** There's a possibility of increased industrial use of cereals, for products like beer and biscuits, which might not be fully accounted for in consumption estimates.

What are the implications of this Cereal Gap?

- **Agricultural Policy Challenges:** The cereal surplus creates a challenge for policymakers to balance farmer incomes and market demands, questioning the effectiveness of current agricultural policies.
- **Potential Resource Misallocation:** With declining per capita consumption of cereals, the surplus suggests possible overinvestment in cereal production.
- **Impact on Global Trade:** India's increased exports, reaching 23 million tonnes in 2020-21 and 32 million tonnes in 2021-22, indicate the surplus's role in shaping India's position in the global cereal market.

What should be done?

- India should consider **diversifying agriculture away from rice and wheat**.
- **Leveraging the surplus for increased exports**, as seen with 32 million tonnes exported in 2021-22, can be beneficial.
- **Investigate and potentially expand industrial applications of cereals**, considering the speculated rise in use for products like beer and biscuits.
- **Evaluate the impact of the public distribution system** on cereal consumption and distribution efficiency.

8. Issues with Land Management in India

News: Use of technological solutions like GIS can help address issues with land management with India.

What are the concerns with Land Management in India?

- **Untapped Economic Potential:** Land in India has not been utilised to its full potential.
- **Lack of Accessibility to Geographic Information System (GIS):** Until 2021, GIS was based on Google Maps as regulations did not allow the freedom to create maps (under the regressive Map Policy of 2005). GIS consists of integrated computer hardware and software that stores, manages, analyzes, edit, output, and visualize geographic data.
- **Lack of Centralised Database:** Government entities hold vast expanses of land but there was no centralised database for the same till very recently.
- **Lack of Land Surveys:** For instance, the Ministry of Defence, the largest land-owning ministry, completed its land-survey in 2022 for the first time since independence.

What steps have been taken for Land Management in India?

- **Formation of the National Centre of Geo-informatics:** Its creation in 2015 has brought about a paradigm shift since GIS started to be seamlessly incorporated into e-governance applications across India.
- **Liberalisation of Geospatial Sector:** In a major reform, Geospatial Guidelines in 2021 deregulated the sector.
- **Use of Drones for Mapping:** Drone Rules 2021 sanctioned drone surveys for mapping.
- **Formation of Government Land Information System:** Initiated in 2015, it contains details on 95,742 parcels of land measuring 384,000 acres.

What are the benefits of Utilizing Tech-based GIS?

- **Land Titling:** SVAMITVA scheme is utilising drone surveys to provide a record of land rights to people in villages.
- **Connectivity and Logistics:** PM Gati Shakti is a GIS-based national masterplan for multimodal connectivity, which will lead to efficiencies in infrastructure and connectivity projects.

- **Applications in Defence:** The use of new technologies like **LIDAR** allows the creation of **3D GIS maps**, which are extremely important for remote borders. Technology-based security measures such as laser sensing, thermal imaging, drone surveillance, video-analytics, and smart lighting can enhance security.

What should be the way forward?

- **Use of AI:** AI-based image analysis technology can provide detailed identification of land-use based on satellite or drone imagery.
- **Role of State Governments:** State Governments are responsible for managing land resources such as seacoasts, riverbanks, forests. They should make extensive use of technology as well.
- **Rationalise New Acquisitions:** Geospatial technology can help intelligently identify available government land before any new acquisitions are made. AI and satellite imagery can be used to correctly assess land category (grasslands, rocky, hilly, agricultural, etc.).
- **Prevention of Encroachments:** An AI-based system, which uses satellite imagery and longitudinal image analysis, can help in timely detection of encroachments and unauthorised constructions.

Technology coupled with enabling policies in land management can significantly contribute to the vision of Viksit Bharat. Economists emphasise that geospatial information can contribute **0.5% to annual GDP growth** in India. Use of technology can help in this regard.

9. XPoSat Launched by ISRO

News: ISRO launched the XPoSat (X-Ray Polarimeter Satellite) space observatory to study polarisation of cosmic X-rays.

What is the XPoSat Mission?

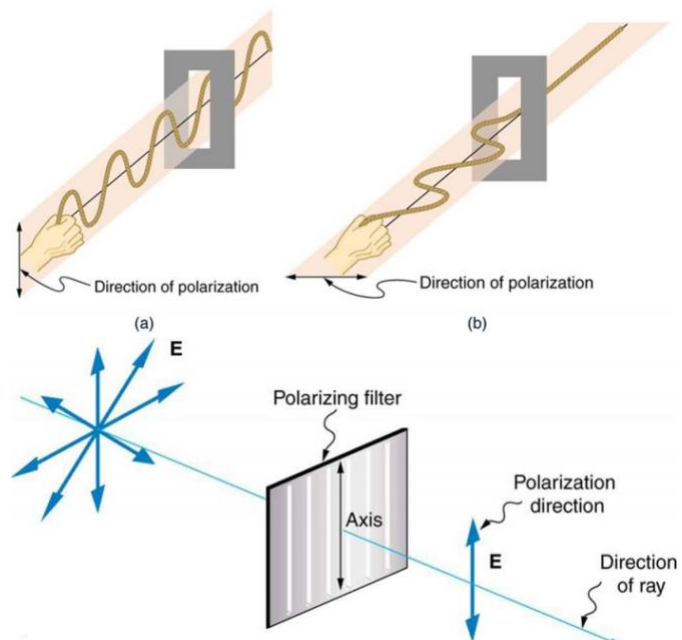
- On January 1, 2024, ISRO's PSLV put into orbit the **XPoSat (X-ray Polarimeter Satellite)**. It is India's first **space observatory** to study the polarisation of cosmic X-rays.
- This is the **world's second space mission** to study the polarisation of cosmic X-rays, after **NASA's IXPE**, launched in 2021. XPoSat operates in a frequency band different from NASA's mission.
- XPoSat will study highly energetic X-rays emitted by Black holes and Neutron stars. It will help reveal more information about them.
- The high energy of X-Rays makes them impossible to focus with lenses, like ordinary light. The Earth's atmosphere absorbs most of it. Hence, a space observatory was necessary to study them.

What are X-rays?

- X-rays are a form of **electromagnetic waves**. These are generated by movements of electric charges when the electric and magnetic fields in its vicinity are disturbed.

What are Polarised X-rays?

- In electromagnetic waves like X-rays, the **electric field oscillates or varies in strength and direction** as the wave propagates. The



direction and nature of this variation in the electric field depend on the motion of the electric charge responsible for generating the wave.

- Sometimes these variations acquire directionality (**variations in a particular direction**). When the field of rays oscillates only in a particular plane, the rays are said to be polarized e.g., in the adjacent image, the rays have become polarized in the vertical plane (as the field is vibrating only in the vertical plane) after passing through the polarizing filter.
- **Stars mostly emit unpolarised light**, however it is different in the case of stars with very large magnetic fields. Electrons in those objects spiral around the magnetic field lines and emit X-rays. The electrons' motion provides the X-rays with some directionality, making them polarised.
- Measuring the polarisation of X-rays can enable astronomers to **understand the nature of these polarised X-ray emitting-objects**, such as **pulsars** or **regions around blackholes**. A pulsar (or pulsating radio source) is a **neutron star that rotates quickly** and releases two polarised radio lights. The beams create a unique timing and polarisation signature as they burst across space. Pulsars are among the few celestial objects that emit circular polarised light.

How will XPoSat Mission study X-rays?

- The main instrument aboard, the payload called **POLIX (Indian X-ray Polarimeter)**, aims to study a special property of X-rays in space. POLIX is shaped like a cubical cylinder. At its core lies a disc of beryllium. Detectors kept along the walls collect X-rays after their scattering from the metallic disc. POLIX's beryllium disc will let astronomers **probe lower energy X-rays** than what the NASA instrument is capable of.
- The other instrument (**XSPECT**) aboard XPoSat will study timing and spectral properties of X-ray emitting objects in space.
- With this venture, ISRO has signalled that it has the expertise and maturity to contribute to all aspects of planetary research.

10. Wildlife Laws and Conflict with Forest Rights

News: Laws and initiatives related to wildlife have played a vital role in its conservation. However, the laws have also given rise to certain challenges.

How have Wildlife Laws evolved in India?

- **1972 Wildlife (Protection) Act (WLPA):** National Parks and Wildlife Sanctuaries were established, affecting the rights of forest-dwellers and strengthening State control. Under this act, **Critical Tiger Habitats (CTHs)**, also known as the core areas of tiger reserves, are identified.
- **Project Tiger (1973):** A result of WLPA, leading to the creation of tiger reserves.
- **2006 Amendment of WLPA:** Formation of the **National Tiger Conservation Authority (NTCA)** and introduction of tiger conservation plans, modifying rights of forest-dwellers in tiger reserves.
- **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 (FRA):** Recognized rights of forest-dwellers in tiger reserves and established Gram Sabhas as authorities for forest management.
- **Introduction of Critical Wildlife Habitat (CWH) under FRA:** Different from CTH under WLPA, once notified as CWH, land couldn't be diverted for non-forest purposes.
- **Notification of FRA Rules (2009) and Challenges:** Planned but overshadowed by the NTCA's rush to delineate CTHs, leading to notification of tiger reserves without full compliance with WLPA provisions.

What are the implications of legal changes in Wildlife Laws?

- **Expansion of Tiger Reserves:** From 9 reserves in 1973 to 54 in 2022, covering 78,135.956 sq. km across 18 States.
- **Increase in Tiger Population:** Due to enhanced protection, tiger numbers rose to 3,167-3,925 by 2022.
- **Challenges in Implementing the FRA, 2006:** Though recognizing forest-dweller rights, the implementation has been problematic, leading to disputes over land use in tiger reserves.
- **Lacked Buffer Area:** Under the Wildlife Protection Act of 1972, India designated 26 tiger reserves across 12 States as Critical Tiger Habitats (CTHs), covering 25,548.54 sq. km, 91.77% of which are CTHs. However, except for Odisha's Similipal, these lacked Buffer Areas until mandated by a 2012 Supreme Court order.
- **Relocation and Rehabilitation Challenges:** Relocation and rehabilitation under wildlife conservation laws face challenges. Despite legal mandates for fair compensation and resettlement, the process often lacks transparency and adequate compensation, leading to disputes and dissatisfaction among relocated communities.
- **Conflict with the National Tiger Conservation Authority (NTCA) Directives:** The NTCA's 2007 directive for delineating CTHs conflicted with the FRA's provisions, complicating the balance between tiger conservation and community rights.
- **Fixed compensation:** The Union and State governments offer INR 15 lakh, (increased from INR 10 lakh in 2021), for relocation under the Project Tiger 2008 guidelines. However, this doesn't fully cover the legal requirements for compensation, resettlement, and relocation under the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 (LARR Act).

What should be done?

- **Respectful and Informed Relocation:** Implement relocation policies as per the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act, ensuring that relocation from tiger reserves is voluntary, informed, and includes fair compensation.
- **Addressing Conflicts Proactively:** Develop strategies to proactively address and resolve conflicts that arise from the expansion of tiger reserves and the increased protection measures, **balancing conservation needs with the rights of local communities.**



Factly

Polity

1. Shiv Sena Split: Decision of the Speaker of Maharashtra Legislative Assembly

News: The Speaker of the Maharashtra Legislative Assembly has provided his decision on the defection case related to split in the Shiv Sena.

About the Speaker's Ruling

- **Recognition of the Eknath Shinde Faction as Shiv Sena:** The Speaker has ruled that there was no case to disqualify members of either faction (Eknath Shinde, Uddhav Thackeray (UBT)). The Speaker recognized the Eknath Shinde faction as the 'real political party'.
- **No Violation of Whip:** The Speaker declared that the appointee of the UBT faction ceased to be the authorized whip, and that the appointee of the Shinde group was the **valid whip**. Hence, there was no case of the Shinde faction MLAs violating any whip.

Observations of the Supreme Court in the Case (May 2023)

- **Disqualification of MLAs:** The SC did not interfere with the proceedings related to the disqualification of 16 MLAs. The SC said that the issue of disqualification **should be decided by the Speaker of the Legislative Assembly** in accordance with the established procedures in law.
- **Appointment of the Whip:** The SC deemed the appointment of the whip by the split-led faction to be illegal. The Speaker should have **conducted an independent inquiry** to verify the decision of the political party regarding the appointment of the whip. (Refer EPIC May 2023 ([click](#)) for Supreme Court's Judgment on Shiv Sena Dispute).
- The Speaker may have to decide on which faction is the real party in this case of defection. For this, the party constitution and the leadership structure submitted to the ECI could be considered.

Criticism of Speaker's Decision

- In **Rajendra Singh Rana vs Swami Prasad Maurya (2007)**, the Supreme Court had said that when members of the ruling party join the Opposition party and try to form the Government, they are deemed to have voluntarily given up the membership of their original party. Thus, the consequence of the conduct of the Shinde group of MLAs is disqualification.
- In **Subhash Desai vs Principal Secretary, Governor of Maharashtra & Ors. (2023)**, the Supreme Court observes that a split has taken place in the Shiv Sena party, and thus two factions have come into existence. But the Tenth Schedule does not recognise a split anymore. Hence, a split in a party no longer exempts the legislators from disqualification.

2. New Rules for Allocation of Symbols to Registered Unrecognized Political Parties (RUPPs)

News: The Election Commission of India has brought in new rules for the allocation of symbols to the Registered Unrecognized Political Parties (RUPPs).

About the New Rules

- RUPPs are now required to furnish **audited accounts** for the last 3 fiscal years.
- They are mandated to **submit expenditure reports** for the 2 preceding elections.
- The application process for symbols, along with the authorized party official's signature, has been integrated into a unified format.
- The updated regulations are set to be enforced from January 2024.

- They aim to **streamline the process** and **improve transparency** in the allocation of symbols to RUPPs.

About RUPPs

- RUPPs are either **newly-registered parties** or those which have:
 - Not secured enough percentage of votes in the State Legislative Assembly or General Elections to become a State Party
 - **Never contested elections after being registered.**
- Common symbols are provided to RUPPs based upon an undertaking that they would put up **‘at least 5% of total candidates with regard to Legislative Assembly election of a State’.**
- The ECI receives the applications from RUPPs for allotment of symbol under **the Election Symbols (Reservation & Allotment) Order, 1968.**
- In September 2022, the ECI had **de-listed 86 non-existent RUPPs** and declared another **253 as ‘Inactive RUPPs’.**

3. Foreigners can't Claim Right to Reside in India: Delhi High Court

News: The Delhi HC has held that foreigners cannot claim the right to reside in India under the Article 19(1)(e) of the Constitution.

About the Judgment

- The Delhi HC was hearing a **habeas corpus petition** filed by a man; claiming that his nephew, suspected to be a Bangladeshi national, was unlawfully detained by the **Foreign Regional Registration Office.**
- The Delhi HC dismissing the petition observed that **foreigners cannot claim the right to reside and settle** in India under the **Article 19 (1) (e) of the Constitution of India** as their fundamental rights are limited to the protection of life and liberty under **Article 21.**
- The HC made it clear that the prayer in the present writ petition is confined to habeas corpus relief. There is no indication that the detention of the person is deemed illegal. The HC emphasized that **restrictions on movement** are imposed to **facilitate availability** of the person **for deportation**, and such restrictions **can't be considered unlawful.**
- The HC cited the Supreme Court's ruling in **Hans Muller of Nuremburg Vs. Superintendent, Presidency Jail, Calcutta**, highlighting that the SC had emphasized the **absolute and unlimited power** of the Government of India to expel foreigners. There is no provision in the Constitution restraining such discretion.

Article 19 and the Freedom to Move and Reside

Article 19(1)(d) ensures the right to move freely within the country.

Article 19(1)(e) affirms the fundamental right of every citizen to reside and settle in any part of India.

Article 19(5) allows reasonable restrictions on the right to freedom of movement and residence for the interests of the general public or the protection of any Scheduled Tribe.

About Illegal Detention

- It is the **unjustifiable imprisonment** or the **unlawful deprivation of liberty** by the way of arrest for a **wrongful cause** or suspicion and continued restriction of freedom by such person in custody.
- If a person is unlawfully detained by the police, the Constitution allows redressal by the filing of a **habeas corpus** petition under **Article 32 or 226.**

4. Supreme Court Legal Services Committee (SCLSC)

News: Justice BR Gavai has been nominated as the Chairperson of the Supreme Court Legal Services Committee (SCLSC), replacing Justice Sanjiv Khanna.

Aspect	Details
About the Committee	<ul style="list-style-type: none"> The SCLSC was established under Section 3A of the Legal Services Authorities Act, 1987. It aims to offer 'free and competent legal services to the vulnerable sections of society' in cases under the Supreme Court's jurisdiction.
Composition	<ul style="list-style-type: none"> It comprises a sitting SC Judge as the Chairperson and 9 other members appointed by the Chief Justice of India (CJI). The Centre prescribes the qualifications for membership. The CJI can also appoint the Secretary to the Committee.
Features	The Committee has the authority, as per the Centre's prescription and in consultation with the CJI, to appoint officers and employees.

Constitutional Provisions

- **Free Legal Aid: Article 39A** underscores the imperative of making justice accessible by providing free legal assistance to the impoverished and vulnerable segments of society.
- **Articles 14 and 22(1):** Advocating for equality and ensuring well-informed rights for all.

About the Legal Services Authorities Act, 1987

- The Act established a **statutory foundation** for legal aid programs. Its aim is to offer free and competent legal services to various eligible groups, such as women, children, SC/ST and EWS categories, industrial workers, disabled persons, etc.
- **Section 27 of the 1987 Act** empowers the Union Government, in consultation with the CJI, to make rules through notification for implementing the Act.
- In 1995, **National Legal Services Authority (NALSA)** was constituted under the Act to **monitor and evaluate the implementation** of legal aid programs and to formulate policies for ensuring the availability of legal services.
- In every state, **State Legal Services Authorities (SLSA)** were established to implement NALSA's policies and directions, give free legal services to people, and conduct **Lok Adalats**.
- Similarly, **District Legal Services Authorities (DLSAs)** and Taluk Legal Services Committees were established in districts and most taluks.

5. Requirement of Prior Approval for Prosecution

News: The Supreme Court has delivered a divided verdict on ex-Andhra Pradesh CM's plea to dismiss an FIR in a case of corruption.

About the SC Judgment

- One Judge held that **prior approval was necessary before conducting an inquiry** into the allegations against the former CM, which the CID did not have when it opened the inquiry.
- The other Judge held that it was necessary to seek approval under Section 17A of the PCA Act **only to investigate offences committed after 2018**, the year this requirement was introduced.

About the Requirement of Prior Approval

- In 2003, an amendment to the **Section 6A of the Delhi Special Police Establishment Act, 1946** mandated that agencies like the CBI are required to seek approval of the Union Government before probing alleged offences under the Prevention of Corruption Act (PCA), 1988, if the implicated **employee held a rank higher than Joint Secretary**.

- The Supreme Court had eliminated this requirement in 2014. In 2018, the PCA was amended, incorporating a comparable provision as Section 17A.
- According to Section 17A, if a public servant commits an offense under the Act during official duties, investigators must receive approval from the Union/State Government or a competent authority to initiate an inquiry or investigation.
- In **CBI vs RR Kishore**, a Constitution Bench had ruled that officials cannot assert immunity under Section 6A, even if the offense occurred prior to the annulment of this provision.

6. Foreign Contribution Regulation Act

News: The registration of the Centre for Policy Research (CPR) under the Foreign Contribution Regulation Act (FCRA) has been revoked by the Union Ministry of Home Affairs.

About Cancellation of CPR Registration

- According to the Ministry of Home Affairs, the registration was revoked due to ‘violations’ of FCRA regulations. The Ministry highlighted instances of CPR transferring foreign contributions to other entities, depositing them in **non-designated accounts**. It is violation of **Section 7** (Prohibition on transferring foreign contributions to other persons) of the FCRA.
 - CPR also published reports on “current affairs programmes”, which is a violation of the FCRA.
- According to Section 3(1) in The Foreign Contribution (Regulation) Act 2010, No foreign contribution shall be accepted by any association or company engaged in the **production or broadcast of audio news or audio-visual news or current affairs programmes** through any electronic mode, or any other electronic form.

About the FCRA

Aspect	Details
About the Act	<ul style="list-style-type: none"> • It is a legislation enacted to regulate the acceptance and utilization of foreign contributions and foreign hospitality by individuals, associations, and companies in India. • It was enacted in 1976. It was amended in 2010, 2020 and 2022.
Applicability	It is applicable to all associations, groups, and NGOs which intend to receive foreign donations..
Features	<ul style="list-style-type: none"> • It is mandatory for all such NGOs to register themselves under FCRA. • To open a bank account for the receipt of the foreign funds in State Bank of India, Delhi. • To use the funds solely for the intended purpose as received and specified in the Act.

7. Reservations under Rights of Persons with Disabilities Act, 2016

News: According to Ministry of Social Justice, people with blood disorders are not eligible for job reservations in government roles under the Persons with Disabilities category.

About the Issue

- The Right of Persons with Disabilities Act (RPwD), 2016 provides for **reservation of 4% in government jobs** for people with specific disabilities, such as total loss of vision, low vision, complete loss of hearing etc.
- The 3 blood disorders; thalassemia, haemophilia, and sickle cell disease have been **included in the list of disabilities** under the RPwD Act, 2016. However, the Government has held that as per **Section 34 of the Act**, persons with blood disorders including Thalassemia are **not eligible for reservation in government jobs**.

- Under Section 34 of RPwD, 2016, each Government establishment is required to set aside **1% each** for the following categories:
 - **(a)** Blindness and low vision; **(b)** Deaf and hard of hearing; **(c)** Locomotor disability including cerebral palsy, leprosy cured, dwarfism, acid attack victims and muscular dystrophy
 - And **another 1%** for **(d)** Autism, intellectual disability, specific learning disability and mental illness; **(e)** Multiple disabilities from amongst persons under clauses (a) to (d) including deaf-blindness in the posts identified for each disabilities:
- There are concerns that the exclusion of these blood disorders from job reservations undermines the intended purpose of the legislation.

About the Blood Diseases

Disease	Details
Thalassemia	It is a genetic blood disorder causing abnormal haemoglobin production and anaemia.
Haemophilia	It is a genetic bleeding disorder that hinders the blood's clotting ability.
Sickle cell disease	It is a genetic blood disorder involving abnormal haemoglobin , causing mis-shapen red blood cells.

Policy

1. Poor Infrastructure for Women in Lower Judiciary

News: The Supreme Court Report 'State of the Judiciary' highlights the absence of women's restrooms in almost 20% of District Court complexes nationwide.

Key Findings of the Report

- Citing data from the **National Judicial Data Grid**, it highlighted that **~20% of district court complexes** in the country **lack separate toilets for women**.
- It emphasized the need for **women-friendly toilets**, noting that just 6.7% have sanitary napkin vending machines.
- It noted that court toilets have broken doors and **inadequate water supply**. It also highlighted **the** absence of a designated maintenance service in some cases.
- It also highlighted **lack of toilets for transgender individuals** in most district courts, underscoring the importance of having '**gender-inclusive toilets**' in every court complex.

2. Annual Status of Education Report (ASER), 2023

News: ASER 2023 has been released by Pratham.

Major Findings of the ASER, 2023

- **Enrolment Rates:** Overall, 86.8% of 14-18-year-olds are enrolled in an educational institution. The percentage of youth not enrolled is 3.9% for 14-year-old youth and 32.6% for 18-year-olds. Most of the people in this age group were enrolled in the Arts/Humanities streams.
- **Gaps in Foundational Skill:** ~25% cannot read Grade 2 text, and over 50% face difficulties with arithmetic skills expected by Grade 5, highlighting a **deficit in foundational learning**.
- **Under-utilization of Digital Technology:** Despite the high availability of smartphones in rural households (95%), their use for educational purposes is limited.

- **Gender Disparities:** Fewer females (28.1%) are in the Science, Technology, Engineering, and Mathematics stream (STEM) stream compared to males (36.3%).
 - Females are better at reading in their regional language, while males excel in Arithmetic and English.
 - Males are **more likely to own and use smartphones**.
- **Vocational Training:** The survey shows a low enrolment in vocational training, with only 5.6% of young people participating. Among these, college students are more engaged, with 16.2% enrolled in courses, usually lasting no more than six months.

Suggestions Provided by the Report

- **Pedagogic Reforms for Rural Students:** The Report suggests reforming teaching methods to help students who balance academic and farm work, addressing the educational challenges faced in rural areas.
- **Leverage Smartphones for Education and Address Digital Gender Gaps:** ASER advocates using the widespread access to smartphones (95% of households) for educational purposes and emphasizes **closing the gender gap in digital skills**, as females lag behind males in smartphone proficiency.
- **Rethink Vocational Education:** To increase enrolment in vocational courses, ASER suggests reimagining vocational training to **make it more aspirational and aligned with students' interests**.

3. Revised Rules Under Schedule M of the Drugs and Cosmetic Rules, 1945

News: The Ministry of Health and Family Welfare has notified revised rules to ensure the production of high-quality drugs meeting international standards.

Aspect	Updated Rule
5 New Categories of Drugs	Pharmaceutical products containing hazardous substances such as: Sex hormones, Steroids (anabolic and androgenic), Cytotoxic substances (used to destroy cancer cells), Biological products, Radio-pharmaceuticals (used in nuclear medicine for diagnostic and therapeutic purposes).
Additional Sections under Schedule M	<ul style="list-style-type: none"> • Introduction of a pharmaceutical quality system (PQS). • Quality risk management (QRM). • Product quality review (PQR). • Qualification and validation of equipment. • Computerized storage system for all drug products.
Other Revised Guidelines	<ul style="list-style-type: none"> • The manufacturer is obligated to take responsibility for the quality of pharmaceutical products, ensuring their suitability for use. • They also need to comply with license requirements and prevent any risks to patients arising from inadequate safety, quality, or efficacy. • Companies are required to market a finished product only upon obtaining 'satisfactory results' from ingredient tests. • They must also retain sufficient samples of intermediate and final products for potential retesting or batch verification.
Implementation	<p>The updated rules apply to companies based on their turnovers:</p> <ul style="list-style-type: none"> • Small and medium manufacturers (annual turnover < Rs. 250 crore) must comply within 12 months of publication. • Large manufacturers (annual turnover > Rs. 250 crore) have a 6-month deadline.

About the Schedule M

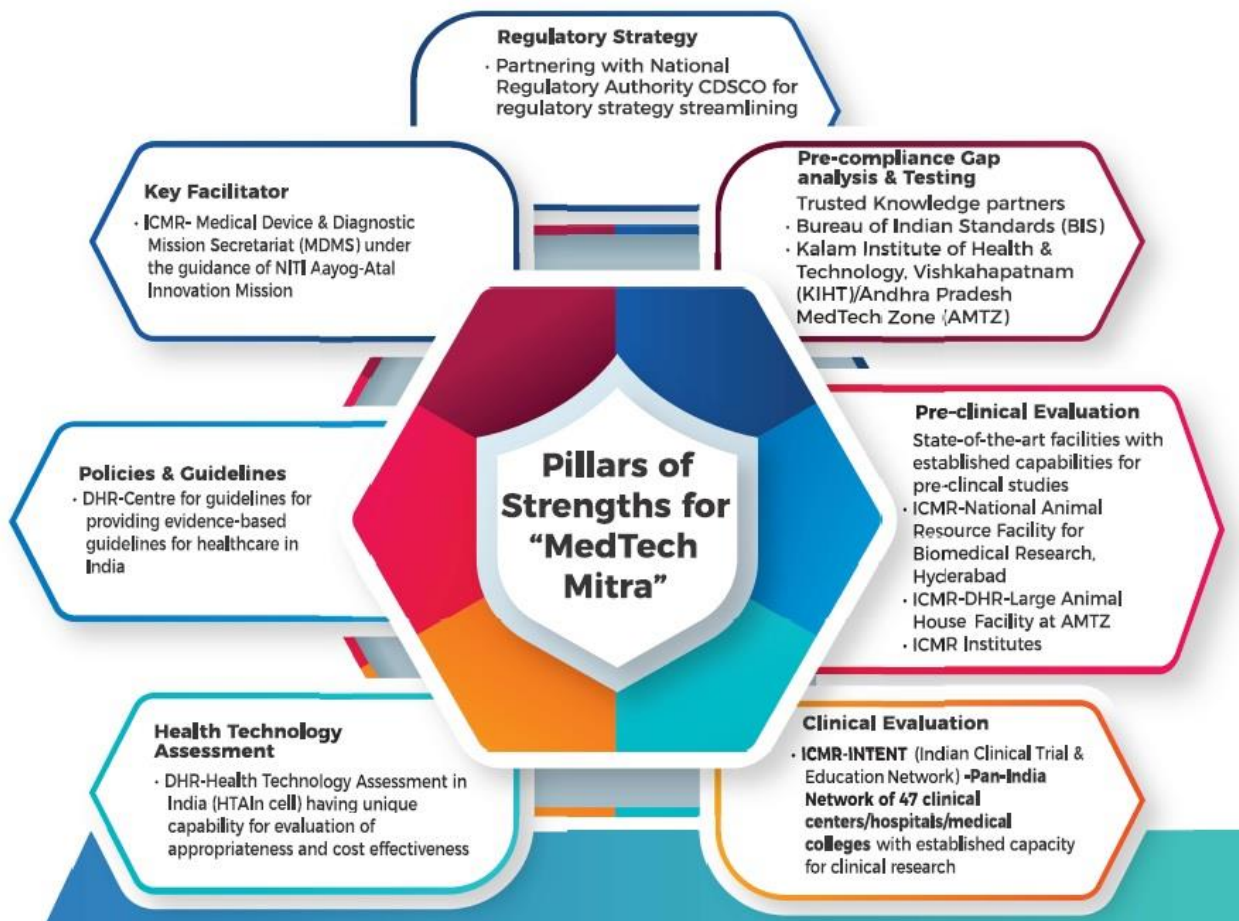
- Schedule M of the Drugs and Cosmetics Rules, 1945, pertains to the **Good Manufacturing Practices** for the manufacture of drugs. (Refer EPIC August 2023 (click) for Good Manufacturing Practices (GMPs) for Pharmaceutical Industry).
- The revised Schedule M has **13 parts**.
- Schedule M originated from the recommendations of the **Hathi Committee** in 1975, which proposed making Good Manufacturing Practices (GMPs) **mandatory for all drug manufacturers**.

4. MedTech Mitra

News: The Union Health Minister has launched the 'MedTech Mitra' portal.

About MedTech Mitra

- It is a **web platform** to foster development of **affordable and accessible indigenous Medical devices/In-vitro diagnostics**.
- It is designed to provide strategic handholding support to MedTech innovators with **assessing clinical viability, regulatory facilitation, and adopting new products**.
- MedTech Mitra will address the queries of the innovators and **provide personalized guidance** in consultation with the Regulator and other relevant stakeholders.
- The portal will be coordinated by the **Indian Council of Medical Research (ICMR)** and the **Central Drugs Standard Control Organisation (CDSCO)**, under the guidance of NITI Aayog's **Atal Innovation Mission**.



Significance of the Portal

- It will enable the **indigenous development** of cost-effective, high-quality MedTech devices and diagnostics. It will reduce the dependence on imports (~80% in MedTech).
- It will **facilitate innovation and R&D** for **emerging startups** in the field of medical technology.

5. Parliamentary Committee Report on Child Labour

News: A report of the Parliamentary Standing Committee on Labour has highlighted the gaps in eliminating child labour by 2025.

About the Observations in the Report

- The Panel identified **ambiguity in the definition of 'child'** across multiple legislations. Under **Child and Adolescent Labour (Prohibition and Regulation) Act, 1986 (CALPRA)**, as amended in 2016, a child is defined as someone between 14-18 years. But under **Right to Education Act, 2009**, child means between 6-14 years of age.
- **Non uniformity in employment of children being a cognizable offence:** Employment of children in contravention of the **CALPRA Act** is a **cognizable offence**, whereas under the **Juvenile Justice Act, 2015**, it is a **non-cognizable offence**. This leads to ambiguity as well as delay in justice to the aggrieved children.

Key Suggestions/Recommendations of the Committee

- Bringing **uniformity in the definition** of 'child' under various laws.
- The **removal of hazardous occupations** from the list of approved jobs and processes for adolescents.
- Incorporating **stricter punishments**, such as license cancellation and property attachment, in addition to the 3/4 times increase in fines.
- In instances of use of child labour, **accountability** should be assigned not only to the employer but also to the principal employer and traffickers.
- The Ministry should formulate suitable **guidelines for the utilization of the fund** (collected as fine for child labour employer).
- Recommended establishing a **district-level fund** as well for immediate relief and rehabilitation for child laborers.
- It has suggested incorporating provisions for taking **action against the police for not registering FIRs** in the CALPRA Act, similar to the Protection of Children from Sexual Offences Act, 2012.
- Steps should be taken to establish a **National Level Child Tracking Mechanism** to facilitate coordination among the States/Centre.

6. Election Commission's Guidelines for Political Inclusion of the Disabled

News: The Election Commission has released guidelines for political parties to use disability-friendly language and be more inclusive of persons with disabilities.

About the Guidelines

- The Election Commission of India has issued 11 guidelines for political parties. These guidelines focus on 3 main areas:
- **Disability-Inclusive Language:** The Guidelines urge political parties to **avoid derogatory and dehumanizing terms** when referring to persons with disabilities (PwDs).
- **Accessibility of Information:** Political parties are advised to make their websites accessible to PwDs. They should organize events in locations that are accessible to everyone, including those with disabilities.

- **Inclusion Within Political Parties:** The Guidelines encourage the inclusion of PwDs at all levels within political parties. This includes **developing training modules on disability** for party workers and making efforts to **integrate PwDs in various party roles** and activities.
- The guidelines are expected to **encourage political inclusion of PwDs**.
- The guidelines are aligned with the principles of the **UN Convention on the Rights of Persons with Disabilities**.

Limitations of Guidelines

- **Advisory Nature:** The guidelines are **not mandatory**. Only some provisions use mandatory language like “should” and “shall,” while most others are more discretionary, using terms like “may.”
- **Exclusion from the Model Code of Conduct:** These guidelines are not part of the official Model Code of Conduct for elections. It’s **unclear if violations of certain guidelines will lead to actions** under section 92 of the RPwD Act, which penalizes atrocities against PwDs.
- **Ambiguity in Language:** There is some confusion about the usage of certain terms like “blind,” “deaf,” and “dumb,” which can be technical terms but might be considered derogatory in some languages.

Economy

1. SBI Report on Income Inequality in India

News: According to a report by SBI Research, there has been a reduction in income inequality in India, signalling a favorable shift towards upward mobility and the expansion of the middle class.

Findings of the Report

- **Increasing tax base:** The report notes (based on data by CBDT) a continuous expansion in the Income Tax base. The number of tax filers increased to 74 million in AY 2022-23 from 70 million in AY 2021-22.
- **Decline in Gini Coefficient:** Gini Coefficient (a measure of income inequality) has declined from 0.472 during Assessment Year 2014-15 to 0.402 for AY 2022-23.
- **Decline in Share of Top Earners:** The share of top earners with incomes exceeding INR 10 crores and INR 100 crores has decreased from 2013-14 to 2020-21.
- **Improving Upward Mobility:** The drop in income inequality stems from significant upward mobility. More than 36% of individuals originally in the lowest income bracket in FY14 have transitioned to higher income levels. It led to a notable 21% increase in their earnings from FY14 to FY21.
- The report indicates **rising female labour force participation**.
- Evident shifts in income levels for MSMEs and evolving consumption patterns in the aftermath of the Covid-19 pandemic debunk the myth of **K-shaped growth**.

About Gini Coefficient

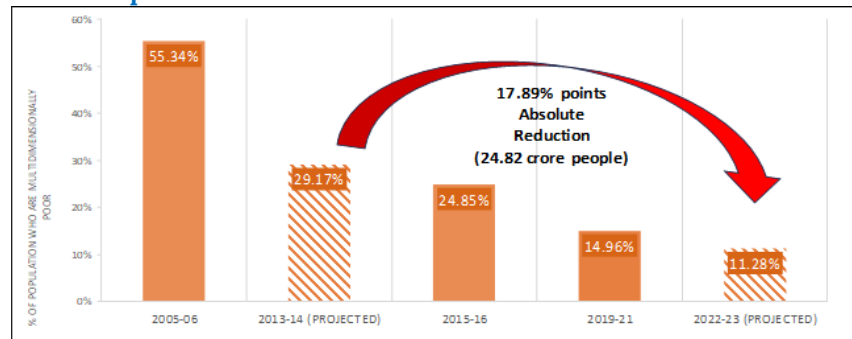
- The Gini coefficient, **derived from the Lorenz curve**, serves as an indicator of income or wealth inequality.
- The coefficient ranges from 0 (0%) to 1 (100%), **0 representing perfect equality** (every resident in a country has the same income) and **1 representing perfect inequality** (one resident earned all income and the rest earned nothing). Thus, higher the value of Gini coefficient, higher the inequality.

2. Fall in Multidimensional Poverty in India

News: NITI Aayog has released a discussion paper ‘Multidimensional Poverty in India since 2005-06’. It notes that ~248.2 million individuals in India emerged from poverty over the last 9 years.

Key Findings of the NITI Aayog Discussion Paper

- The discussion paper utilizes MPI data (MPI, 2023, released in July 2023) derived from the National Family Health Surveys (NFHS) conducted in 2015-16 and 2019-21. It also used data from NFHS-3 (2005-06), to analyse long-term poverty trends.



- India has registered a significant decline in multidimensional poverty in India from **29.17% in 2013-14** to **11.28% in 2022-23** (a reduction of 17.89 percentage points).
- In numbers about 24.82 crore people escaped multidimensional Poverty in last 9 years.
- Uttar Pradesh topped the list with 5.94 crore people escaping poverty followed by Bihar and Madhya Pradesh.
- The paper reveals a **faster decline in the poverty headcount ratio from 2015-16 to 2019-21** (10.66% annual rate) **compared** to the period 2005-06 to 2015-16 (7.69% annual rate).
- All 12 indicators of MPI have recorded significant improvement during the entire study period.
- India is poised to achieve single-digit poverty rates by the year 2024.
- India is likely to achieve **Sustainable Development Goals (SDGs) 1.2** (reducing multidimensional poverty by at least half) much ahead of 2030. (Refer EPIC July 2023 (click) for National Multidimensional Poverty Index (MPI)).

Reasons for Fall in Multidimensional Poverty

- Digital Integration:** The 'JAM' trio – Jan Dhan accounts, Aadhaar identities, and mobile phones – played a crucial role in **streamlining welfare distribution**.
- Direct Cash Transfers:** These transfers ensured efficient coverage of various benefit schemes, **reducing leakages** significantly.
- Expanded Welfare Budgets:** Economic growth enabled increased funding for welfare programs, contributing to poverty alleviation.
- Targeted Measures:** Focused efforts on health, education, and living standards addressed key aspects of deprivation.
- Multidimensional Approach:** Adoption of the multidimensional poverty index (MPI), similar to the United Nations Development Program's method, helped in **better targeting** and **measuring poverty**.
- Data-Driven Decisions:** Use of National Family Health Surveys for **accurate assessment** and **strategy formulation**.

Concerns

- Data Quality:** Some experts have expressed concerns regarding quality of data, especially after the rejection of the 2017-18 consumer expenditure survey by the Government.
- Regional Disparities:** There are significant disparities in poverty levels across different states, indicating **uneven development** and the need for **region-specific policies**.
- Educational Outcomes:** The index includes education but does not fully address the quality of education. For example, the learning outcomes in remain poor as indicated by the ASER.
- Policy Direction and Spending:** The report questions the efficiency of current government expenditure, such as free food distribution and cash transfers, suggesting a need for more focused spending on development areas like education quality.

3. T+0 Settlement

News: SEBI has proposed to introduce the T+0 settlement cycle on an optional basis. This facility will be in addition to the existing T+1 (Trade plus one day) settlement cycle.

Current Settlement Cycle

- At present, the settlement cycle for all traded instruments is ‘**T+1**’ day. T represents the day of trade. It means that trade settlements will have to be cleared within one day after the actual transaction takes place e.g., if the Trade execution (transaction) takes place on Monday, it gets settled on Tuesday. Settlement means exchange of securities (like share) and cash between the buyer and seller.
- T+1 Cycle was introduced in 2021 in a phased manner and was fully implemented in 2023.

SEBI’s Proposal

- It suggested adding a **shorter settlement cycle** as an option for the equity cash segment, alongside the existing T+1 cycle.
- The proposed implementation involves **2 phases**:
 - Optional T+0 settlement for trades until 1:30 PM with settlement by 4:30 PM on the same day.
 - Option for immediate trade-by-trade settlement with trading till 3:30 PM.
- SEBI proposes introducing T+0 settlement for top 500 listed equity shares by market capitalization.

Benefits of New Settlement Cycle

- An immediate settlement mechanism allows for the **instant receipt of funds and securities**. It will **strengthen investor protection** by enhancing the control of the investor over the securities and funds.
- It can position Indian equities as a resilient, cost-effective, and time-efficient asset class, surpassing emerging contenders in alternative asset classes.

4. Domestic-Systemically Important Banks (D-SIBs)

News: The Reserve Bank of India (RBI) issued the list of Domestic Systemically Important Banks (D-SIBs).

About the D-SIB List

- The RBI has retained the **State Bank of India, HDFC Bank and ICICI Bank** as Domestic Systemically Important Banks (D-SIBs).
- **SBI** has been shifted from **bucket 3 to bucket 4**, and **HDFC Bank from bucket 1 to bucket 2**. ICICI Bank continues to maintain its previous categorization of bucket 1.
- The higher D-SIB surcharge for SBI and HDFC Bank will be applicable from April 1, 2025. The **additional Common Equity Tier 1 (CET1) requirement** will be in addition to the capital conservation buffer.

About Domestic Systemically Important Banks (D-SIBs)

- D-SIB are banks whose **potential failure might seriously disrupt the financial system** due to the **bank’s size, cross-jurisdictional activities, complexity, lack of substitutability and interconnectedness**.
- Systemically Important Banks (SIBs) are hence considered ‘Too Big to Fail (TBTF)’.
- The D-SIBs was published by RBI in 2014 and was effective from 2015.
- RBI places D-SIBs in appropriate buckets depending upon their **Systemic Importance Scores (SISs)**. Based on the bucket in which a D-SIB is placed, an **additional common equity requirement** has to be applied to it.
- In case a foreign bank having a branch presence in India is a **Global Systemically Important Bank (G-SIB)**, it has to maintain additional **CET1 capital surcharge** in India as applicable to it as a G-SIB, proportionate to its **Risk Weighted Assets (RWAs)** in India.

Bucket	Banks	Additional Common Equity Tier 1 Requirement as % of Risk Weighted Assets (RWAs)
5	-	1%
4	State Bank of India	0.8%
3		0.6%
2	HDFC Bank	0.4%
1	ICICI Bank	0.2%

5. Yen-denominated Green Bonds

News: State-owned REC Ltd. has issued its inaugural green bonds worth JPY 61.1 billion.

About the Yen-denominated Green Bonds

- The Bonds have been issued by Rural Electrification Corporation (REC). It is a *Maharatna* Central Public Sector Enterprise (CPSE) under the Ministry of Power.
- Its purpose is to **finance eligible Green Projects**, adhering to the Company's Green Finance Framework and **RBI's External Commercial Borrowings Guidelines**.
- The Bonds have been classified as Baa3/BBB- /BBB+ (Moody's/Fitch/JCR).
- The Bonds have been listed on Global Securities Market of India International Exchange (India INX) and NSE IFSC in GIFT City, Gandhinagar, Gujarat.
- This issuance marks REC's first venture into the Yen bond market. It is the first Yen Green Bond issuance by an Indian PSU.
- This issuance represents the largest ever Euro-Yen issuance in South and South East Asia, the largest Yen-denominated issuance from India, and the largest non-sovereign Yen-denominated issuance ever from the South and South East Asia.

About Green Bonds

- Green bonds are bonds issued by any sovereign entity, inter-governmental groups or alliances and corporates with the aim to **utilise for projects classified as environmentally sustainable**.
- They offer investors a platform to engage in good practices, influencing the business strategy of bond issuers.
- Since 2008, the World Bank had issued approximately US\$ 18 billion equivalent in Green Bonds through over 200 bonds in 28 currencies.

6. RBI Guidelines on Green Deposits

News: The RBI has released updated guidelines related to the Green Deposits Framework.

About the RBI Guidelines on Green Deposits

- Green deposits are similar to regular bank deposits. The key distinction is that banks commit to allocating the funds from these deposits to **support environmentally friendly initiatives** (like renewable energy).
- It is not mandatory for the financial institutions (Banks/NBFCs) to raise green deposits.
- Green deposits can be invested in **short-term liquid instruments**, limited to a 1-year maturity. However, this restriction applies until the funds are allocated to green activities or projects.
- The framework applies to green deposits raised by banks from June 1, 2023, onward. Banks cannot secure green deposits after financing green activities/projects.
- Banks **must pay interest** on green deposits, with no restriction on **premature withdrawal**, subject to guidelines. Early withdrawal does not impact activities funded by green deposits, and there is no penalty for non-allocation to green projects.

- Banks can provide **overdraft facilities** against green deposits, following guidelines outlined by RBI.
- The green deposits can be denominated in Indian Rupees only.
- Deposits obtained within this framework fall under the protection of the **Deposit Insurance and Credit Guarantee Corporation**.
- Given that the activities specified in the green deposits framework align with those outlined in sovereign green bonds, **investments in sovereign green bonds are consequently included within the framework**.

International Relations

1. India and Pakistan Exchange List of Nuclear Installations

News: India and Pakistan recently exchanged lists of nuclear installations under a bilateral pact that prohibits attacks on each other's atomic facilities.

About the Agreement between India and Pakistan

- In December 1988, India and Pakistan signed an agreement that **prohibits** them from **attacking nuclear installations and facilities** of each other.
- The agreement came into force on January 27, 1991 and the first exchange of such a list took place on January 1, 1992. Since then, India and Pakistan have consistently exchanged the list every year (33 times).
- On January 1 every year, both nations are required to **notify each other** about their respective **nuclear facilities** to be covered under the agreement.
- The term 'nuclear installations and facilities' encompasses **nuclear power and research reactors, fuel fabrication, uranium enrichment, isotopes separation, reprocessing facilities**, and any establishments **storing substantial quantities of radioactive materials**, including those with fresh or irradiated nuclear fuel and materials in any form.

2. Free Movement Regime on India-Myanmar Border

News: The Government of India is considering a proposal to terminate the Free Movement Regime (FMR) along the Indo-Myanmar border.

About the Free Movement Regime (FMR)

- The FMR is a mutually agreed arrangement between India and Myanmar that **allows tribes** living along the border on either side **to travel up to 16 km inside** the other country **without a visa**.
- They can cross the border on production of a **border pass**, usually valid for a year, and can stay for up to 2 weeks per visit.
- The FMR is a reflection of the strong **ethnic and familial ties** across the border.
- It was implemented in 2018 as part of the **India's Act East Policy**.
- India had suspended the FMR in September 2022 following the 2021 Myanmar coup and the resultant migrant influx. Over 40,000 refugees took shelter in Mizoram, and around 4,000 refugees are



said to have entered Manipur. The persecution of **Kuki-Chin-Zo ethnic groups** by the ruling junta in Myanmar has pushed them towards India through the **unfenced, porous borders**.

About India-Myanmar Border

- India shares a **1,643 km-long border** with Myanmar. It passes through **Arunachal Pradesh** (520 km), **Nagaland** (215 km), **Manipur** (398 km), and **Mizoram** (510 km).
- The border remains largely unfenced and is protected by **Assam Rifles**.

3. Genocide Convention

News: South Africa approached the International Court of Justice (ICJ) to seek an immediate order affirming that Israel had violated its commitments under the 1948 Genocide Convention.

About the UN Convention on the Prevention and Punishment of the Crime of Genocide

- The Convention is an instrument of international law that codified the crime of genocide.
- It was the **first human rights treaty** adopted by the UN **General Assembly** in December 1948.
- According to the Genocide Convention, genocide can take place both in time of war and peace.
- In the Convention, genocide means any of the following acts committed with **intent to destroy**, in whole or in part, a **national, ethnical, racial or religious group**, as such:
 - Killing members of the group.
 - Causing serious bodily or mental harm to members of the group.
 - Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part
 - Imposing measures intended to prevent births within the group.
 - Forcibly transferring children of the group to another group.
- The Convention also states that any country involved in the agreement can request the relevant UN organs to take necessary actions to prevent and suppress acts of genocide.
- It puts **obligation on State parties** to **take measures to prevent** and **punish the crime of genocide**, including by enacting relevant legislation and punishing perpetrators.

About the International Court of Justice

- The International Court of Justice (ICJ) is the **principal judicial organ** of the UN.
- It was established in June 1945 by the **Charter of the UN** and began work in April 1946.
- Its role is to **settle legal disputes submitted to it by States** and to give **advisory opinions** on legal questions referred to it by authorized UN organs and specialized agencies.
- It is located at the Peace Palace in The Hague (Netherlands). Of the 6 principal organs of the United Nations, it is the **only one not located in New York, US**.
- It consists of 15 judges, who are elected for terms of office of **9 years** by the UN General Assembly and the Security Council.
- Its official languages are **English and French**.

4. OPEC

News: Several countries have left the OPEC group in recent years like Qatar, Indonesia, and Ecuador. Angola has become the latest country to quit the group.

About OPEC

With the leaving of Angola, the membership of OPEC has fallen to 12.

Specification	Detail
About OPEC	<ul style="list-style-type: none"> It is an intergovernmental organisation of oil producing nations. They together account for an estimated 44% of global oil production and 81.5 % of the world's "proven" oil reserves. It was founded in September 1960 in Baghdad, Iraq. It is headquartered in Vienna, Austria.
Objective	To coordinate and unify petroleum policies among its member countries to secure fair and stable prices for petroleum producers.
Functions	<ul style="list-style-type: none"> It plays a significant role in influencing global oil production levels to meet market demand and maintain the economic interests of its member nations. Decisions about matching oil production to expected demand are taken at the meeting of the OPEC conference.
Member Countries	12, Algeria, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, and Venezuela.

Science and Technology

1. Presence of CO₂ in Atmosphere and Habitability of Exoplanets

News: A recent study by a team of researchers suggests that lower levels of CO₂ in a planet's atmosphere may indicate the presence of liquid water, rendering the planet 'habitable'.

About Findings of the Study

- The researchers have devised a **new 'habitability signature'** as a practical method for detecting habitability of a planet.
- According to the researches, **lower levels of CO₂ in a planet's atmosphere** compared to neighbouring planets suggests **potential absorption by an ocean** or **isolation by biomass** on a planetary scale.
- Planets positioned at an ideal distance from their star (neither too close (excessive heat) nor too far (extreme cold)) are deemed to be in the habitable zone and may be capable of hosting water on their surface.

Significance of the Study

- The habitability signature can help in **identifying planets with oceans**, increasing the likelihood of their ability to support life.
- Studying CO₂ levels of other planets may also offer insights into Earth's environmental **tipping points** and the associated carbon levels at these points that could render our planet uninhabitable e.g., Venus and Earth share similarities, but Venus' high carbon levels suggest a past climatic tipping point that may have rendered it uninhabitable.
- The team suggested that the 'habitability signature' they developed could also function as a **biosignature**, considering that living organisms also capture CO₂.

2. Advanced Nuclear Energy for Enriched Life (ANEEL) Fuel

News: Clean Core Thorium Energy, a Chicago-based company, has developed ANEEL, a fuel that combines Thorium and High Assay Low Enriched Uranium (HALEU).

About High Assay Low Enriched Uranium (HALEU)

- It is Uranium that contains greater than 5% but less than 20% of the U-235 isotope.

- Most current reactors run on uranium fuel **enriched up to 5% of Uranium-235**.
- HALEU is needed for many of the advanced nuclear reactor designs under development. But HALEU is not yet widely available commercially.



Significance of ANEEL

- ANEEL can be used in the existing Pressurized Heavy-Water Reactors (PHWRs). The PHWRs are an indigenous reactor system.
- ANEEL provides an **easier and quicker alternative** for the **deployment of thorium** leveraging imported HALEU.
- By utilising this fuel, the **operation cost and nuclear waste can be reduced** significantly as compared with the currently used natural uranium.
- ANEEL fuel bundle **lasts much longer and burns more efficiently**.
- The spent ANEEL fuel **cannot be used for weapons**.
- With this, **India** can guarantee **green energy security** for the subcontinent by fast-tracking the use of Thorium in nuclear reactors.

Status of Thorium in India

- Thorium is contained in, and produced from, the **natural mineral monazite**, occurring often as a **sand deposit**.
- Department of Atomic Energy (DAE) has established **11.93 million tonnes** of in-situ resources **Monazite** in India, which contains about 1.07 million tonnes of thorium.
- **India** has the world's largest reserves of Thorium, which is estimated at 1.07 million tonnes, enough to last over a century.
- If India uses this thorium, it can then produce enough green energy and easily turn **net-zero by its target date of 2070**.

3. Quantum Gates

News: Quantum Gates have vital importance in quantum computing.

About Quantum Gates

- Quantum gates are fundamental components in quantum computing that **manipulate quantum bits or qubits**. A bit, short for binary digit, is the smallest unit of information storage.
- These gates **perform operations on qubits**, allowing the creation of quantum circuits that execute complex calculations.
- Unlike classical bits in traditional computing, which can only be in a state of 0 or 1, qubits can exist in **superpositions of both states simultaneously**.
- Quantum gates enable the implementation of **quantum algorithms** by performing operations such as the application of quantum logic gates like Hadamard gates, CNOT (controlled NOT) gates, and others.

Key Applications of Quantum Gates

- **Quantum Circuits:** Quantum gates are used to construct quantum circuits, analogous to classical circuits in traditional computers.

- **Quantum Algorithms:** Quantum gates play a vital role in implementing quantum algorithms, such as Shor's algorithm for integer factorization and Grover's algorithm for unstructured search problems.
- **Quantum Machine Learning:** Quantum gates are explored for applications in quantum machine learning algorithms.

4. Direct-to-Mobile Technology

News: The Telecommunication Engineering Centre (TEC) has identified challenges in implementing direct-to-mobile (D2M) technology. The technology has the potential to allow streaming of TV content directly to phones without an internet connection.

About Direct-to-Mobile (D2M) Technology

- Direct-to-Mobile (D2M) technology refers to the capability of delivering content, such as **streaming television, directly to mobile devices** without the need for an **internet connection**.
- The technology is based on the **convergence of broadband and broadcast** using which mobile phones can receive terrestrial digital TV.
- It would be **similar to how people listen to FM radio on their phones** where a receiver within the phone can tap into radio frequencies.

Key Challenges Identified by TEC

- **Integration:** Integration of smartphones supporting D2M and Digital Terrestrial TV to Mobile Devices (DTT2M) technologies poses a major challenge.
- **Infrastructure:** Implementing D2M technologies like Advanced Television Systems Committee (ATSC) 3.0 also known as NextGen TV may require a new nationwide indoor network for quality services, adding complexity to the process.
- **Cost:** Adoption of D2M technology could lead to higher cost for smartphone makers and consequently higher phone prices.
- **Ecosystem and Viability:** Challenges include availability of a handset ecosystem, scalability of D2M technology, business viability and opportunities and spectrum requirements.

Suggestions Given by TEC

- For D2M technology, it is essential to have a **standard, compatible with current mobile handsets** to ensure cost-effectiveness and capitalize on the existing ecosystem support.
- The standard should **facilitate offloading broadcasting traffic onto phones**, enabling the design and manufacturing of smartphones capable of directly receiving broadcast signals.

5. Counter-Drone Technology

News: DRDO has completed the development of its counter-drone system and will soon start production.

About DRDO's Counter Drone System

- It is a fully integrated anti-drone system that encompasses the **detection, identification, and neutralization of drones**.
- The technology can effectively **counter attacks**, employ soft kill measures, and implement hard kill methods against various types of drones, including micro drones.
- Users can also customize it for various other challenges.
- The Transfer of Technology (ToT) has been **provided to private industries** such as BEL, Adani, L&T, and Icom.

Other Technologies Being Developed by DRDO

- The Tapas **Medium Altitude Long Endurance** (MALE) UAV for the Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) application is in advanced developmental trials. ISTAR is a military concept that integrates diverse technologies for gathering and analyzing information, aiding strategic and tactical decision-making.
- The short-range armed UAV Archer, designed for reconnaissance, surveillance, and low-intensity conflict, is currently undergoing developmental flight trials.

6. Bio-Imaging for Detection of Cancer

News: Tata Memorial Hospital (TMH), Mumbai is deploying AI with a 'Bio-Imaging Bank' for early-stage detection of cancer.

About Bio-Imaging Bank

- It is a comprehensive **repository containing radiology and pathology images** with clinical details, outcome data, treatment specifics, and additional metadata. It is strategically crafted for training, validation, and rigorous testing of AI algorithms.
- The project uses **deep learning** to develop a **cancer-specific tailored algorithm** for **early detection**, incorporating data from 60,000 patients.
- Initially the project is dedicated to **head, neck and lung cancers**, with a goal of having at least 1000 patients for each cancer type.
- It focuses on medical tasks like screening for lymph node metastases, nucleus segmentation, classification, and predicting biomarkers (e.g., HPV in oropharyngeal, EGFR in lung cancer), as well as therapy response prediction.
- The project is funded by the Department of Biotechnology, in collaboration with IIT-Bombay, RGCIRC-New Delhi, AIIMS-New Delhi, and PGIMER-Chandigarh.

AI's Role in Detection of Cancer

- It analyzes radiological and pathological images, learning from extensive datasets to **identify unique features associated with different cancers, enabling early detection of tissue changes** and potential malignancies.
- Doctors segment and annotate images, correlating them with biopsy results, pathology reports, and genomic sequences to develop algorithms.
- The AI aids in early diagnosis which has proven to be 98% correct after doctors cross-check.
- AI's potential lies in **tailoring treatment approaches** based on diverse patient profiles, and thus optimising therapy outcomes.
- It **reduces radiation exposure** for paediatric patients undergoing CT scans by 40 %.

7. NCDC Survey on Use of Antibiotics

News: The Ministry of Health has released results of survey conducted by the National Centre for Disease Control (NCDC), mapping patients for antibiotic usages across 15 States and 2 UTs.

About the Results of the Survey

- The survey reveals that **94% patients were prescribed antibiotics before receiving a definitive diagnosis** of the infection, with only 6% receiving antibiotics after a confirmed diagnosis.
- **55% of patients were prescribed antibiotics for preventive indications** and the rest 45% for therapeutic indications. This indicates overuse of antibiotics for preventive measures rather than curative.

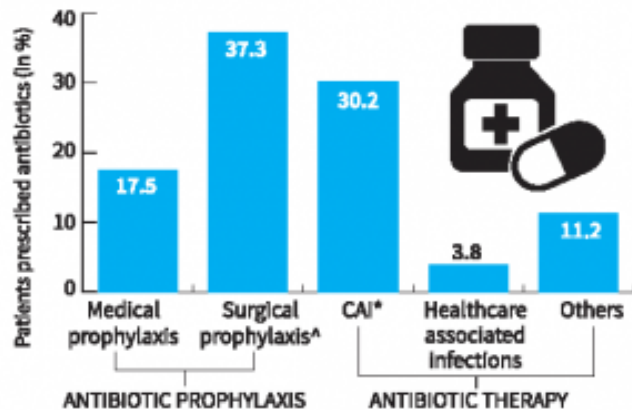
- The report also identified **significant variations among hospitals, with antibiotic prescriptions ranging from 37% to 100%** across different institutes.
- Applying the WHO's Access, Watch, and Reserve (AWaRe) classification, 57% of the prescriptions were for antibiotics in the **Watch group**, designated for specific, limited infective syndromes and **more susceptible to antibiotic resistance**.
- The report highlights that a major factor contributing to antimicrobial resistance (AMR) is the **excessive and inappropriate use of antibiotics**.

About the NCDC

- It was established in 1963 under Ministry of Health to function as a **national centre of excellence for control of communicable diseases**.
- It serves as the **nodal agency for India's national program on AMR containment**.
- To attain AMR monitoring, it has set up the **National Antibiotic Consumption Network (NAC-NET)**, where network sites collect and forward data on antibiotic consumption in their health facilities to the NCDC.

Is prevention better than cure?

As per a NCDC survey, 55% of eligible patients were given antibiotics for disease prevention (prophylaxis), with 37.3% receiving antibiotics for preventing surgical site infections^A



*Community acquired infections

Environment

1. Impact of Rising Temperatures on India

News: 2023 was India's second-warmest year, causing various weather issues and affecting the economy, agriculture, and employment.

About Abnormal Events in 2023

- **Temperature Rise:** 2023 was marked as the second warmest year since 1901, with the average temperature 0.65°C above the long-term mean.
- **Extreme Rainfall:** December 2023 saw rainfall 60% above normal, making it an exceptionally wet month, except in the north and Northeast regions.
- **Tropical Storms:** The Indian Ocean experienced 6 tropical storms, significantly higher than usual, with three escalating to severe cyclonic storms, indicating a rise in extreme weather events.
- **El Nino Contribution:** The unusual weather patterns and increased global temperatures were partly attributed to El Nino, underscoring the broader impact of climate change.

Impact of Climate Change on India

- The Reserve Bank of India's 2022-23 Report on Currency and Finance projects a **potential 2% loss in GDP** and a **decline in living standards** for half the population by 2050. It particularly emphasized the **loss in productivity** in major sectors such as agriculture and construction due to increasing heat stress.
- The World Bank predicts India will face over **40% of global job losses** due to heat-induced productivity decline by 2030.
- It is bad for the **poorest populations**, as evident by skyrocketing prices of essentials like vegetables (tomatoes, onions, potatoes, chilly, and cumin) due to **erratic weather impacting production**.

Possible Steps

- Accelerate strategies to **reduce carbon intensity** in GDP by 2030.
- **Allocate sufficient funds** for both **mitigation** and **adaptation** to climate impacts.
- **Prioritize renewable energy sources** over thermal power to reduce dependence on coal.

2. Efforts for Tiger Conservation at the Corbett Tiger Reserve

News: Conservation efforts at the Corbett Tiger Reserve has led to rapid rise in population of tigers.

About the Corbett Tiger Reserve (CTR)

- Jim Corbett National Park was established in **1936 as Hailey National Park**. It was the **first national park in India**.
- It was **declared as a Tiger Reserve in 1973**. It is the first to come under the **Project Tiger** initiative.
- The CTR is situated in the Shivalik hills of the Himalayas while administratively it spreads over Pauri Garhwal, Nainital and Almora districts of Uttarakhand State in India.
- It boasts the **highest density of tigers globally**, with **260 tigers recorded in 2022** (231 in 2018).

Steps for Conservation of Tigers

- **Digital and Intensive Patrolling:** Adopting electronic-eye under project E-eye and **increasing foot patrols** to curb poaching and monitor wildlife movement.
- **Habitat Management:** Meticulous management of grasslands and water resources, including the development of palatable grasses and waterholes, supports the prey base necessary for tigers.
- **Strategic Corridors:** Establishment of wildlife corridors facilitates movement and **reduces inbreeding**, contributing to healthier tiger populations.
- **Community Initiatives:** Introduction of the '**Living with Tigers**' initiative and beehive fencing project '**Corbee Honey**' to **mitigate human-wildlife conflicts** and promote community involvement in conservation. The 'Living with Tigers' initiative is an **awareness program** in villages and schools around reserve, focusing on cultivating safe practices and behaviours amidst human-wildlife conflict scenarios.
- **Cultural Importance:** The tiger's role in India's religious and mythological iconography has fuelled a nationwide drive to conserve it. It led to increased public and political support for tiger conservation initiatives.

Challenges in Tiger Conservation

- **Human-Wildlife Conflict:** The increasing number of tigers poses challenges in managing human-tiger conflicts and ensuring sufficient territory for each tiger.
- The protection work is risky, often facing dangers from wild animals. Adequate field staff and ensuring their safety is a constant challenge.
- Maintaining diverse ecosystems, including 27 types of grasslands and water sources for a robust prey base.
- Ensuring animal movement and gene pool exchange through corridors is complicated by **habitat fragmentation** and **increasing infrastructure** like roads.
- **Balancing tiger conservation with the ecotourism and safety of local communities** requires continuous effort and innovative projects like "Living with Tigers."

Steps Required

- Boost field staff numbers and safety measures for effective patrolling and incident management.
- Continue to develop and maintain wildlife corridors and safe animal crossings to ensure healthy gene flow, reduce territorial disputes among tigers, and conflicts between tigers-elephants, and humans-tigers.

- Implement a grassroots strategy involving ‘willing cooperation’ from villagers, as emphasized by Salim Ali.

3. Pong Dam Reserve

News: The Government of Himachal Pradesh is reviewing eco-sensitive zone boundaries around Pong Dam to address challenges for locals and support agriculture activities during low water levels.

About Eco-Sensitive Zones

- Eco-Sensitive Zones (ESZ) or Ecologically Fragile Areas (EFAs) are areas in India **notified by the Ministry of Environment** around protected areas such as national parks and wildlife sanctuaries.
- The objective of declaring an area as ESZ is to create some kind of ‘**shock absorbers**’ to the protected areas by regulating and managing the activities around such areas.

Specification	Detail
Location	<ul style="list-style-type: none"> • It is located in Kangra district of Himachal Pradesh. It is also known as Pong Dam Reservoir or Pong Dam Lake. • The dam was created in 1975 and the reservoir was declared as a wildlife sanctuary in 1983.
Ramsar Site	The lake was declared as a Ramsar Site in 2002 .
Feeding Rivers	The lake is fed by the Beas River . Its numerous perennial tributaries are Gaj, Neogal, Binwa, Uhl, Bangana, and Baner.
Vegetation	The sanctuary area is covered with tropical and subtropical forests .
Flora	Acacia, Jamun, Shisham, Mango, Mulberry, Ficus Kachnar, Amla, and Prunus.
Fauna	<ul style="list-style-type: none"> • It includes animals like Sambhar, Barking Deer, Wild Bear, Nilgai, Clawless Otter, and Leopards. • The lake’s flagship species is the Bar Headed Geese, with other prominent species including Eurasian Coot, Northern Pintail, Common Teal, Great Cormorant, GreyLag Goose, and more.

4. Impact of Climate Change and Logging on Montane Birds

News: Researchers at the Indian Institute of Science (IISc.) Bengaluru have found that logging and climate change pose a major threat to montane birds.

About the Research

- The team collected data from the **Eaglenest Wildlife Sanctuary, Arunachal Pradesh** which is home to over 500 bird species.
- Researchers studied the effects of **forest logging** and **climate change** on bird communities in tropical mountains by examining over 10 years of data.
- Data were used to understand how the composition of the mid-elevation Eastern Himalayan understory bird community changed in primary (undisturbed) forests as well as in logged forests. (*Understorey bird communities remain beneath the main canopy of a forest*).

Findings of the Research

- **Forest loss and climate change are major threats** to the ecosystem of Tropical montane forests in mountains.

- Many bird species have started **shifting to higher elevations** due to rising temperatures.
- Logging can lead to the **loss of large-bodied, old, growth-dependent species**, and **decrease the overall biodiversity**.
- Logging has a **detrimental impact on understorey insectivores**, which are typically confined to specific niches, leading to a significant decline in their numbers.
- Logged forests also **experience decreased densities of foliage-dwelling insects**, diminishing the available resources for birds.
- The study highlights the need to **safeguard primary forests** in order to **mitigate the effects of climate change**.

5. Conservation of Black Tigers

News: The Government is undertaking several efforts to conserve Black Tigers.

Specification	Detail
About Black Tigers	<ul style="list-style-type: none"> • Black Tigers are a rare colour variant of the Bengal tiger and are not a distinct species or geographic subspecies. • They are also called Melanistic Royal Bengal Tiger.
IUCN Status	Endangered.
Population in India	<ul style="list-style-type: none"> • They have been recorded only in the Similipal Tiger Reserve in Odisha. • In the 2022 All India Tiger Estimation, Similipal Tiger Reserve reported 16 tigers, with 10 being melanistic.
Cause of Black Colour	<ul style="list-style-type: none"> • The broadened black stripes in these tigers is caused by a single mutation in the Transmembrane Aminopeptidase Q (Taqppe) gene. • As the phenomenon is related to mutation and not the high deposition of melanin, it is considered pseudo-melanism. • Since this mutation is caused by a recessive gene, it is rare. • However, the geographical isolation of tigers in Similipal Tiger Reserve has led to inbreeding, offering the recessive gene frequent chances to show up.

Conservation Efforts

- The **National Tiger Conservation Authority (NTCA)** issued a **Standard Operating Procedure** for active management of tiger rehabilitation in source areas.
- Recognized as a unique genetic cluster, Similipal Tiger Reserve obtains funding through Centrally Sponsored Scheme of **Integrated Development of Wildlife Habitats (CSS-IDWH)** for conservation of tigers, raising awareness on tiger & other wildlife conservation, habitat management, etc under the Tiger Conservation Plan.

6. Efforts and Achievements of NTCA in Wildlife Conservation

News: National Tiger Conservation Authority (NTCA) has played a crucial role in conservation of tigers.

About the Efforts and Achievements of NTCA

- Project Tiger has completed 50 years of successful implementation through the efforts of NTCA and has put the endangered wild tigers of India on assured path of recovery.

- **India now hosts over 70% of the global wild tiger population**, with a minimum of 3,167 tigers, according to the 5th cycle of the All India Tiger Estimation 2022 summary report.
- The Prime Minister inaugurated the **International Big Cat Alliance (IBCA)** during a special program, aiming to **conserve seven major big cat species** (Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, and Puma) through collaborative efforts of the range countries.
- **Successful reintroduction of the Cheetah**: Project for translocation of cheetahs from South Africa and Namibia to Kuno National Park, Madhya Pradesh was launched. Work is also under progress at Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh for establishing the second home for cheetah meta population.
- Tiger Reserves undergo **Management Effectiveness Evaluation (MEE)** every 4 years by NTCA following the IUCN framework. It is a crucial tool to enhance the management of Tiger Reserves and their landscape connectivity.
- With the declaration of the new **Rani Durgavati Tiger Reserve in Madhya Pradesh**, India now has a **total of 54 tiger reserves**, covering more than 2.30% of its geographical area.
- At present, **23 tiger reserves** in India have received CA|TS accreditation. **Conservation Assured | Tiger Standards (CA|TS)** is a criteria set ensuring that tiger sites **meet international standards** for successful conservation.
- In 2022-23, **Pench Tiger Reserve** in Madhya Pradesh and Maharashtra, along with **Satpura Tiger Reserve** in Madhya Pradesh, jointly received the **Tx2 award**. This international recognition is bestowed by a consortium of organizations including GEF, UNDP, IUCN, WWF, and GTF.

7. Poor Air Quality in Indian Cities

News: According to an analysis conducted by Respirer Living Sciences and Climate Trends, most Indian cities are considerably distant from achieving clean air target.

Parameters	Observations
PM2.5	<ul style="list-style-type: none"> • Out of 49 cities, only four achieved or surpassed the targeted decline in PM 2.5 (the most hazardous pollutant) with 27 cities experiencing a decrease. • Delhi has only seen a 5.9% decline in average annual PM 2.5 levels, while Navi Mumbai has witnessed a 46% rise. • Varanasi showed a significant improvement with a 72% reduction in PM 2.5 levels and a 69% reduction in PM 10 levels from 2019-2023.
NCAP Targets	<ul style="list-style-type: none"> • The National Clean Air Programme (NCAP) seeks a 40% reduction in average particulate matter by 2026 (compared to 2017) in 131 cities. • Despite the 3-year deadline, major Indian cities are experiencing either slight reductions or increases in pollution levels.
Ambient Air Quality Monitoring System	<ul style="list-style-type: none"> • Majority of Indian cities have only a few pollution monitors. • Among the 92 cities analyzed, only 4 have over 10 stations.

8. eSoil

News: A recent study by a Swedish University on 'electronic soil' (eSoil) and hydroponics (soil-less cultivation) presents hope for sustainable urban agriculture and food security.

About eSoil

- eSoil serves as a low-power bioelectronic growth substrate capable of **electrically stimulating** both the **root system** and the **growth environment of plants**.
- This innovative substrate has been derived from cellulose and the conductive polymer PEDOT.

- Its active material is an organic mixed-ionic electronic conductor.
- Its advantages include:
- It is environmentally friendly.
- It provides a **safe alternative** to previous methods that relied on high voltage and non-biodegradable materials.
- eSoil employs **minimal energy** and reduces resource consumption.

Significance of eSoil

- The finding holds significance for hydroponics cultivation and will promote its associated benefits such as **vertical farming**.
- It will ensure the **viability of urban agriculture** and ensure food security.
- It's **low energy consumption** offers a sustainable solution for growing food needs.

9. Bamboo Composites

News: Technology related to Bamboo Composites was displayed at the India International Science Festival (IISF 2023) in Faridabad.

About Bamboo Composites

- Bamboo composites **blend bamboo fibres** with other substances to form composite materials.
- The composites utilize **strength, flexibility, and sustainability** of bamboo for versatile applications in construction, furniture, and various industries.
- In ~3-4 years, mature bamboo can be used for bamboo composites, contrasting with teak wood that takes 30-40 years to grow.
- The resulting bamboo composite product shares similarities with teak wood but boasts improved durability, dimensional stability, high strength, density, etc.



Natural bamboo culm



Bamboo mat board



Laminated bamboo



Bamboo scrimber



Bamboo fiber



Bamboo fiber-reinforced polymer composite

About the Bamboo Composite Manufacturing Technology

- It has been developed by CSIR – Advanced Materials And Process Research Institute (AMPRI), Bhopal
- CSIR-AMPRI's bamboo composite technology cuts, treats, and compacts bamboo for optimal strength and shape.
- Significance of Technology: The bamboo composite can be used in various sectors, especially for aerospace.
- It has the potential to yield future products akin to wood but with a **harvest cycle ten times faster**.



- The technology has the potential to attract MSMEs, startups, etc., contributing to achieving sustainable goals like Aatmanirbhar Bharat, Swasth Bharat Abhiyaan, and Swachh Bharat Abhiyaan.

10. Camelids

News: The United Nations has named 2024 the International Year of Camelids to emphasize their vital role in the lives of global communities.

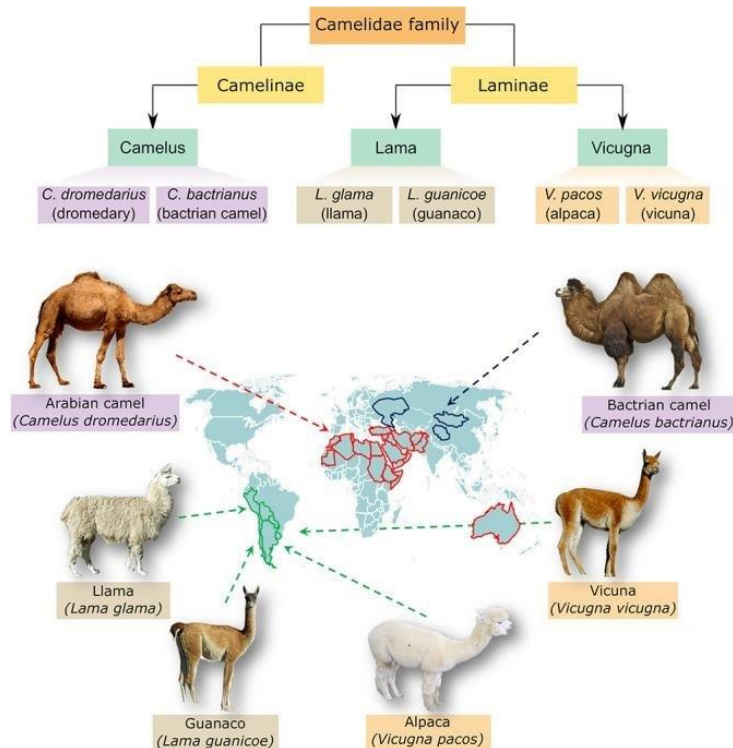
Aspect	Details
About Camelids	<ul style="list-style-type: none"> • Camelids are a family of mammals belonging to the Camelidae family. • Camelids include various species like Bactrian camels, dromedaries, llamas, alpacas, vicuñas, and guanacos.
Characteristics	<ul style="list-style-type: none"> • They are large animals with long necks, slender legs, and in some cases, a hump on their back. • They are strictly herbivores, feeding on vegetation. • They have a 3-chambered stomach, split upper lips allowing separate mobility, and elliptical red blood cells, setting them apart from other mammals. • They are usually found in herds.

Objective of The International Year of Camelids 2024

- Raise awareness about the untapped potential of camelids and advocate for increased investment in the camelid sector.
- Promote research and capacity development and the adoption of innovative practices and technologies.

Importance of Camelids

- They help ensuring **food security**, nutrition and economic growth in more than 90 countries, particularly benefiting indigenous peoples and local communities.
- They are instrumental in achieving Sustainable Development Goals (SDGs) by **supplying milk and meat** for fighting hunger as well as **fibre for clothing and shelter**.
- They are used for **transportation**.
- They also provide **organic fertilizer** for agriculture.
- They are **known to survive in harsh conditions**. Inhabitants rely significantly on camelids for their livelihoods in the Andes mountain ranges, as well as in arid and semi-arid lands across Africa and Asia.
- Camelids represent strength in adversity thus can be **ambassadors to raise awareness about climate change**.



History, Art and Culture

1. Maharishi Valmiki

News: Maharishi Valmiki International Airport was inaugurated in Ayodhya, Uttar Pradesh.

Key Features of the Airport

- The airport has been dedicated and named after **Maharishi Valmiki**, a revered sage credited as the **author** of the **oldest version** of the **Ramayana**.
- The interiors of the terminal Building are decorated with **local art, paintings & murals depicting the life of Bhagwan Shri Ram**.
- The terminal building of Ayodhya Airport is also equipped with various **sustainability features** like an insulated roofing system, LED lighting, rainwater harvesting, landscaping with fountains.
- It also includes a **water treatment plant**, a **sewage treatment plant**, **solar power plant** to meet the 5-star **GRIHA ratings** (Green Rating for Integrated Habitat Assessment).

About Maharishi Valmiki

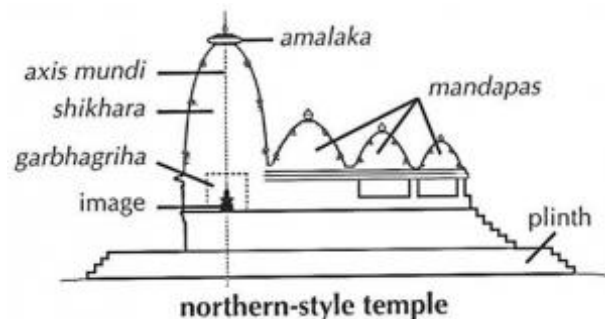
- Maharishi **Valmiki** is referred to as **Adi Kavi**, which translates to the first/original poet in Sanskrit.
- He is credited with **composing the Ramayana**, one of the earliest and most revered epic poems in the Sanskrit literary tradition.
- Valmiki's **Ramayana** is composed of **24,000 verses** and is divided into **7 kandas** (books), each telling a different part of Lord Ram's story. Valmiki himself makes an appearance in the **Bala** and **Uttara Kandas**.
- **Valmiki Jayanti**, also known as **Pargat Diwas**, is celebrated annually to commemorate the birth anniversary of Maharishi Valmiki. It is celebrated on the full moon day of the Hindu month of **Ashvin** (September-October).

2. Nagara Style of Temple Architecture

News: The newly inaugurated Ram Temple in Ayodhya has been constructed in the Nagara Style.

Features of the Nagara Style

- The word Nagara style originated from the word **Nagar** meaning town or city.
- Nagara Style is the style of temples in the northern India. This style developed in the 5th century, characterized by a **curvilinear or convex shikhara**. The **shikhara** is topped by a larger round cushion-like element called an **Amalaka**.
- The Nagara style does not have elaborate boundary walls or **gateways**.
- The entire temple is built on a **stone platform** with steps leading up to it.
- The **garbhagriha** (sanctum sanctorum) is always located under the tallest tower. **Garbhagriha** is the place where **main deity is placed**. It is the **most sacred part** of the temple.
- **Shikharas** are human-made representations of the **natural and cosmological order**, as imagined in Hindu tradition e.g., Meru, Mandara, and Kailasaa are the three mountain which are believed to be axis of world. **Kandariya Mahadev Temple** in Khajuraho, MP epitomises this.
- **Amalaka** or **Kalash** installed on **Shikhara** is one of the features of this temple style.
- It also consists of **circumambulatory path** around the garbhagriha.



- Other examples of Nagara style of temples in India are **Sun temples** (Konark and Modhera) and **Ossian temple**, Gujarat.
- Adam Hardy (author of book The Temple Architecture of India (2007)) identifies 5 modes of Nagara temple architecture: *Valabhi, Phamsana, Latina, Shekhari, and Bhumija*.

Comparison: Dravida and Nagara Styles

Aspect	Dravida	Nagara
Location	Southern India	Northern India
Mandapa Towers	Single Tower	Multiple Towers
Central Towers	Shaped like a pyramid	Curvilinear in shape
Boundaries	Great Importance	Limited Importance

3. Lepakshi and Guruvayur Temples

News: The PM recently visited the Virabhadra Temple in Lepakshi, Andhra Pradesh and Guruvayur Temple in Kerala.

Significance of Lepakshi in Ramayana

- ‘Lepakshi’ in Telugu means ‘Rise, oh bird.’ It is named in honour of **Jatayu**, the legendary bird that bravely fought Ravan while he was abducting Sita to Lanka on his **Pushpaka Vimana**.
- According to the Ramayana, Lepakshi is believed to be the place where the **wounded Jatayu fell** during his fight with Ravan.
- The Lepakshi temple is also believed to have **preserved footprints of Goddess Sita**.



About Lepakshi Temple

Aspect	Details
Location	<ul style="list-style-type: none"> • It is a temple situated in Lepakshi, in Andhra Pradesh.
Built	<ul style="list-style-type: none"> • Vijayanagara rulers in 1530 AD.
Key Features	<ul style="list-style-type: none"> • The temple is dedicated to the Virabhadra, a fierce incarnation of Lord Shiva. • The primary deity of the main shrine is Lord Shiva, and there are additional shrines dedicated to Ganesha and Durga. • The temple exhibits Vijayanagara-style architecture, adorned with intricate carvings and paintings on nearly every visible surface. • The vibrant fresco paintings showcase intricate details in bright colors, depicting scenes from the Ramayana, the Mahabharata, and the Puranas. • According to the Skanda Purana, the temple is a significant divyakshetra, a pilgrimage site dedicated to Lord Shiva.

About Guruvayur Temple

Aspect	Details
About the Temple	<ul style="list-style-type: none"> It is a temple in Guruvayur, Kerala. It is often referred to as the Southern Dwarka. It is dedicated to Lord Vishnu in the youthful form of Lord Krishna.
Construction	<ul style="list-style-type: none"> The earliest temple records date back to the 17th century. Some literary texts and legends suggest that the temple may be approximately 5000 years old.
Key Features	<ul style="list-style-type: none"> The chief deity here is Lord Krishna, also known as Guruvayoorappan. The chief deity is portrayed standing with 4 hands, grasping Shankh, Sudarshana Chakra, Lotus, and Mace, all carved from a stone known as Patala Anjana. It follows the traditional Kerala architectural style. The temple has structures like the Nalambalam (temple structure surrounding the sanctum sanctorum), Balikkal (sacrificial stone), and Deepastambam (pillar of lights). A prominent feature is the Dwajasthamba, a 70-foot-tall flagstaff completely coated in gold. In 1931-32, Sathyagraha was initiated by Kelappan to advocate for the inclusion of untouchables into the temple. It resulted in the Travancore Temple Entry Proclamation of 1936. The temple is known for housing a significant number of captive male Asian elephants. The nearby Punnathur Kotta elephant sanctuary is home to 56 elephants.

4. Monuments of National Importance (MNIs)

News: 3697 ancient monuments and archaeological sites and remains have been declared as Monuments of National Importance in India.

About Monuments of National Importance

- Monuments of National Importance (MNIs) are declared by the **Archaeological Survey of India (ASI)**.
- They are declared under **Section 4** of the **Ancient Monuments and Archaeological Sites and Remains Act, 1958**.
- According to the ASMR Act, 1958, ancient monuments or archaeological sites and remains which are of **historical, archaeological or architectural interest** and have been in existence for **not less than 100 years** may be **declared by the Union Government** as of national importance.
- ASI undertakes conservation, preservation and maintenance of MNIs throughout the country. In addition, basic amenities and visitor facilities like pathways, signages, visitor benches, facilities for *divyangs*, etc. are provided at monuments.
- Uttar Pradesh (745 monuments/sites), Karnataka (506) and Tamil Nadu (413) have the highest number of ASI-maintained sites.

About Archaeological Survey of India (ASI)

- Archaeological Survey of India (ASI) is the premier organisation for archaeological research, scientific analysis and excavation of archaeological sites, conservation and preservation of protected monuments.

- It was founded in 1861 by Alexander Cunningham.
- It functions as an attached office under the **Ministry of Culture**.
- It is headquartered in New Delhi.
- It regulates all archaeological activities as per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958. It also regulates **Antiquities and Art Treasure Act, 1972**.

5. Sahitya Akademi Awards

News: Sahitya Akademi has announced the annual Sahitya Akademi Awards 2023 in 24 languages. This year's awards are for books published between January 2017 and December 2021.

Aspect	Details
About the Awards	<ul style="list-style-type: none"> • Literary honour conferred annually by the Sahitya Akademi. • Awarded to the most outstanding books of literary merit published in any of the 24 major Indian languages (22 languages of the 8th Schedule of the Constitution, Rajasthani and English). • Given to books first published during the 5 years immediately preceding the year of the award. • Instituted in 1954. • 2nd-highest literary honour by the Government of India, after the Jnanpith awards.
Purpose	To recognise and promote excellence in Indian writing and also acknowledge new trends.
Prize	Consists of an engraved copper plaque, a shawl, and a prize money of INR 1 lakh.
Criteria	<ul style="list-style-type: none"> • Author must be an Indian national. • It is conferred to living writers only (not awarded posthumously). • Eligible works must be outstanding contributions to their respective language and literature. • If books exhibit equal merit, criteria such as overall literary contribution and the standing of authors will be considered for the award.
Other Sahitya Akademi Awards	<ul style="list-style-type: none"> • Sahitya Akademi Bal Sahitya Puraskar: Awarded based on the author's overall contribution to children's literature. • Sahitya Akademi Yuva Puraskar: Applies to books published by authors aged 35 and below.

Significance of Sahitya Akademi Awards

- **Linguistic Diversity:** The awards recognize linguistic diversity of India.
- **Empowers Writers:** They boosts sales of literary works and provide educational recognition for writers.
- **Translation Opportunities:** The awards facilitate translation of awarded works into other regional languages including English, expanding their reach and impact.

Concerns Associated with the Sahitya Akademi Awards

- **Limited Recognition:** The Sahitya Akademi struggles with limited recognition compared to global counterparts like the **Booker Prize** or the **Pulitzer**.

- **Low Public Awareness:** The Akademi organizes various literary activities, lectures, and workshops. However, there is a lack in its promotion, hindering public awareness of its programs.
- **Outdated Website and Social Media:** The Akademi's digital presence is inadequate, with an unmaintained website and minimal social media activity.
- **Limited Availability of Books:** Despite affordable publications, Akademi books are often difficult to find, hindering their reach and impact.

There is a need for Sahitya Akademi to enhance its promotional efforts, improve accessibility, and leverage its resources to fulfil its mission of celebrating and promoting India's diverse literary landscape.

6. Old Settlement Discovered in Vadnagar, Gujarat

News: An archaeological excavation at Gujarat's Vadnagar has discovered evidence of human settlement dating back to 1,400 BCE.

Findings of the Excavation

- Excavation has revealed characteristic archaeological artefacts, potteries, copper, gold, silver and iron objects and intricately designed bangles.
- One of the oldest **Buddhist monasteries** also has been discovered.
- The study suggests that **climate-induced changes**, such as rainfall or droughts, played a key role in the rise and fall of various kingdoms over 3,000 years and recurring invasions of India by Central Asian warriors.
- The successive rulers of Vadnagar include:
 - Indo-Greeks (until 100 CE).
 - Indo-Scythian or Shakas, known as Kshatrapa kings (until 400 CE).
 - Maitrakas (Gupta kingdom), Rashtrakuta-Pratihara-Chawada kings (until 930 CE).
 - Solanki kings (Chalukya rule until 1,300 CE).
 - Sultanate-Mughals (1680 CE).
 - Gaekwad/British.



Significance of the Study

- This discovery is crucial as it **fills a gap** in Indian archaeological history between 1,500 BCE and 500 BCE, revealing a **continuity in human settlement in India** spanning over 5,500 years.
- No advanced city-like settlement was recorded before 500 BCE.
- The settlement might date back to **1,400 BCE**, aligning with the late phase of the post-urban Harappan period. If accurate, it challenges the notion of a **Dark Age**, indicating a cultural continuity in India for the past 5,500 years. (*Dark Age is the time frame from the decline of the Indus Valley Civilization ~4,000 years ago (early 2nd millennium BCE) until the rise of the Iron Age and Mahajanapada cities like Gandhar, Koshal, and Avanti (6th-5th century BCE).*)

7. Contributions of Savitribai Phule

News: The 193rd Birth Anniversary of Savitribai Phule was celebrated on January 03, 2024.

About Savitribai Phule

- She was a Dalit woman from the Mali community, was born on January 3, 1831, in the village of Naigaon in Maharashtra.

- She was married to **Jyotirao Phule** (a social reformer) at a young age and he provided her education at home.

Contributions of Savitribai Phule

Education

- She, along with her husband, pioneered **India's earliest girls' school** in Bhidewada, Pune, in 1848, shattering patriarchal barriers.
- She became **India's first woman teacher** and **first Indian headmistress**.
- The couple opened more such schools for **girls, Shudras**, and **Ati-Shudras** (the backward castes and Dalits, respectively) in Pune.
- Pune University bears the name of Savitribai Phule, serving as a tribute to her passionate advocacy for women's education in India.

Social Reform and Activism

- Along with her husband, she started the **Balhatya Pratibandhak Griha** ('Home for the Prevention of Infanticide') as a care centre for children who were victims of rape, sati and those who escaped female infanticide.
- She also advocated inter-caste marriages, widow remarriage, and eradication of child marriage, sati and dowry systems, among other social issues.
- In **1873**, they established the **Satyashodhak Samaj**, which translates to the '**Truth-seekers' Society**'. This platform welcomed individuals regardless of their caste, religion, or class hierarchies, with the primary goal of promoting social equity.
- They also introduced the '**Satyashodhak Marriage**', which rejected Brahmanical rituals. In this ceremony, the marrying couple pledged to **advocate for education and equality**.
- Savitribai became involved in relief work during the 1896 famine in Maharashtra and the 1897 Bubonic plague.

Literary Works

- Savitribai Phule published her first collection of poems, called **Kavya Phule** ('**Poetry's Blossoms**') in 1854.
- She also wrote the famous poem '**Go Get Education**' to encourage the oppressed and backward classes to obtain an education.

8. Selection of Tableaux for the Republic Day Parade

News: The Ministry of Defence has proposed a 3-year rotation plan for the selection of tableaux for the Republic Day parade.

About the Selection Process

- The selection process of tableaux for the Republic Day parade is carried out by **the Ministry of Defence**. An Expert committee (appointed by MoD) consisting of prominent people from art, culture, painting, sculpture, music, architecture, choreography does the shortlisting of the tableaux.
- The members hold 6-7 rounds of meetings to examine the proposals before shortlisting and making the ultimate decision.
- The submitted sketches or designs of the proposals are scrutinised by the Committee. Committee can make suggestions for any modifications in the sketch or design.
- The 3D-models of their proposals are again examined by the expert committee for final selection.
- The final selection is dependent upon a **combination of factors** such as visual appeal, impact on the masses, idea or theme of the tableaux, degree of detail, accompanying music, and use of local resources.
- The Ministry of Culture has empanelled 30 agencies for design and fabrication of tableaux through an open selection process and States/UTs are advised to engage these agencies for the same.

Guidelines for Tableaux

- Writing/use of logos on tableaux is not allowed except the name of States or UTs that are presenting it.
- The names of the States should be written in Hindi in the front, in English on the back and in regional language on the sides of the tableau.
- The number of performers on the trailer will not be more than 10 persons and artists performing on or along the tableau should be from the concerned State/UT only.

Miscellaneous

1. E-Prime Layer in Earth's Interior

News: Researchers from the Arizona State University have discovered the origin of the previously known E-Prime layer in the Earth's interior.

About the E-Prime Layer

- The E-Prime layer is a distinct layer formed at the outermost part of Earth's core. This layer is formed by **surface water penetrating deep into the layers of Earth over billions of years**.
- It is a **hydrogen-rich** and **silica-depleted layer**.
- Over billions of years, surface water has been transported deep into the Earth by descending tectonic plates. Upon reaching the core-mantle boundary about 1,800 miles below the surface, this water chemically reacts with core materials.
- This reaction leads to the **formation of a hydrogen-rich, silicon-depleted layer** at the outer core, resembling a **film-like structure**. This is known as the E-Prime layer.
- The reaction also generates silica crystals which rise and integrate into the mantle, impacting the overall composition.

Significance of the Study

- These findings also have significant implications in understanding Earth's internal processes, heat generation and plate tectonics.
- These findings point to a **dynamic core-mantle interaction**, suggesting substantial material exchange.
- It also indicates a **more extensive global water cycle** than previously acknowledged.

Various Boundaries in Earth's Interior

Discontinuity/Boundary	Layers
Conrad	Upper Crust and the Lower Crust.
Mohorovicic	Crust and Mantle.
Repetti	Outer Mantle and Inner Mantle.
Gutenberg	Mantle and Core.
Lehmann	Outer Core and Inner Core.

2. Satellites and Weather Forecasting

News: Satellites play a central role in weather forecasting.

Satellites and Weather Forecasting

- **Advanced Imaging:** INSAT satellites like 3D and 3DR use **Red-Green-Blue (RGB) imagers**. These help in **identifying different weather phenomena** by analyzing **solar reflectance** and **brightness temperature** at various wavelengths.

- INSAT 3D and 3DR's **geostationary orbits** ensure **consistent monitoring** over India, crucial for real-time weather analysis.
- **Day and Night Monitoring:** With 'day microphysics' and 'night microphysics' components, these satellites effectively track weather changes both during day and night. This dual capability allows for more comprehensive monitoring.
- **Snow and Cloud Differentiation:** The satellites differentiate between snow and clouds by their **reflectance** in different parts of the spectrum, crucial for accurate weather predictions.
- **Enhanced Weather Predictions:** By combining day and night data, scientists can **track cyclone formation** and thunderstorm predictions, enhancing early warning systems.
- **Advanced Radiometers:** Upgraded radiometers on satellites like 3DR provide better **spatial resolution** and functionality compared to earlier models like Kalpana 1 and INSAT 3A.
- **Atmospheric Sounders:** These measure temperature, humidity, and water vapor, providing detailed atmospheric profiles essential for weather analysis.
- **Continual Improvement:** Each new satellite in the INSAT series offers improved technology, like INSAT 3DR's upgraded VHRR, sounder, and additional transponders, enhancing weather monitoring capabilities.

Analysis of Colour and Snow

- **Colour Determination:** Satellites like INSAT 3D use RGB imaging; **colours depend on solar reflectance and brightness temperature**. For instance, the strength of visible, shortwave infrared, and thermal infrared signals determine the amounts of green, red, and blue colours.
- **Tracking Snow:** Snow has a unique **signature**. It reflects similarly to clouds in the visible spectrum but absorbs shortwave infrared radiation strongly. This absorption **weakens the red component** in the RGB scheme, allowing satellites to **differentiate snow from clouds**.

3. Low Snowfall in J&K in Winter Season (2023-24)

News: Jammu and Kashmir, and Ladakh received almost no snow in the month of January 2024. The unexpected weather drastically reduced the tourist footfalls in the region.

Weather in the Winter Season (2023-24)

- According to data from the India Meteorological Department (IMD), Jammu and Kashmir recorded an 80% rainfall deficit in December and a 100% deficit (no rain at all) in January (till 4th week). Typically, the region experiences its initial snowfall in the first half of December, extending through most of January.
- The decline in snowfall is associated with **reduced western disturbance events** and **rising temperatures**, signalling the **impact of climate change**.
- Scientists propose that the ongoing **El Niño event** in the eastern Pacific Ocean may have also have a role.

About Western Disturbances

- These are large **eastward-moving wind systems** carrying rain that originate beyond Afghanistan and Iran.
- They gather moisture from the Mediterranean Sea.
- These are the primary source of **precipitation in winters** in the **Himalayan region** and **North-west India**.
- Alongside the southwest monsoon (June to September) and the northeast monsoon affecting Tamil Nadu and other areas, they constitute the **three major contributors to India's annual rainfall**.



4. National Landslide Susceptible Map

News: IIT Delhi has developed India's first National Landslide Susceptibility Map.

Features of the National Landslide Susceptible Map

- The map has been devised using **1.5 lakh known landslides event** from sources like Geological Survey of India (GSI) along with **16 landslide conditioning factors** such as soil cover, the number of trees covering the area, and how far it is from any roads or mountains, etc.
- The team used **Ensemble Machine Learning** methods to analyse the data. *(In Ensemble Machine Learning multiple machine learning models are used together to average out an oversize impact from any one model).*
- **High Resolution Mapping:** The map offers a detailed (100 sqm. resolution) overview of landslide susceptibility across India, including previously unrecognized areas.
- **New Risk Zones:** It identified high landslide susceptibility in familiar areas like the Himalayan foothills, Assam-Meghalaya region, and Western Ghats. Additionally, it uncovered new high-risk zones, including parts of the Eastern Ghats north of Andhra Pradesh and Odisha.
- **Accessibility of Maps:** The map is accessible to the public, and anyone can engage with the data.

About National Landslide Susceptibility Mapping (NLSM) Programme

- The Geological Survey of India initiated the Macro Scale (1:50,000) NLSM program in 2014.
- The goal is to **map the 0.42 million sq. km landslide-prone areas** across the country. Its aims include:
 - To create a dynamic National Landslide Susceptibility Geodatabase for India.
 - To prepare GIS-based seamless Landslide Susceptibility Maps of India on 1:50,000 scale.

5. Tripartite Agreement with ULFA

News: The Union Government, State of Assam, and the United Liberation Front of Assam (ULFA) have entered into a tripartite agreement aiming for enduring peace, prosperity, and development in Assam.

Key Points in the Agreement

- ULFA representatives have agreed to **renounce violence**, surrender weapons, vacate camps, participate in democratic process, and uphold national integrity.
- Out of the 126 Assembly seats in Assam, 97 seats would be reserved for indigenous people, and future delimitation exercises will adhere to this principle.
- The Government has pledged investment of INR 1.5 lakh crore, staggered through the years.
- A time-bound program will be made by the Ministry of Home Affairs, Government of India, to fulfil the demands of ULFA and a committee will also be formed for its monitoring.
- The agreement was signed with the pro-talks faction of ULFA under Arabinda Rajkhowa while the other faction led by Paresh Baruah (known as ULFA-I) has not joined the peace process.

About ULFA

- The United Liberation Front of Asom (ULFA) is a **militant outfit operating in Assam**.
- It was founded in 1979 by Paresh Baruah during **anti-foreigners movement**. Subsequent to internal conflicts, the organization splintered into various factions.
- It advocated for a sovereign state for the Assamese people in response to an influx of Bengali-speaking individuals following the 1971 Bangladesh Liberation War.
- ULFA was banned in 1990 under the Unlawful Activities (Prevention) Act, as a terrorist organisation.
- Rajkhowa faction of the ULFA signed a ceasefire agreement with the Union Government in 2011, and has since been in negotiations for a peace deal.

Pointly

1. Chancay Port

China has constructed a **mega deep-water port** in the Chancay city, Peru. It is primarily owned by the Chinese state-owned company Cosco Shipping, which holds 60% stake in the port. It signifies China's first control of a port in South America. It is built as part of China's **Belt and Road Initiative** investments in Latin America. It will provide China with a direct access to the resource-rich region. Over the past decade, **China has surpassed the US as South America's leading trade partner**.



2. Peru

Peru is located in western South America, entirely in the Southern Hemisphere. It shares borders with Ecuador and Colombia to the north, Brazil to the east, Bolivia to the southeast, Chile to the south, and the Pacific Ocean to the west and south.

It is a **megadiverse country** with habitats ranging from the arid plains of the Pacific coastal region in the west to the peaks of the Andes mountains extending from the north to the southeast of the country to the tropical **Amazon basin rainforest** in the east with the Amazon River.

Peru has a population of over 32 million, and its capital and largest city is Lima. It has an area of 1,285,216 km² (496,225 sq mi) and is the 19th-largest country in the world, and the 3rd-largest in South America.



3. Drishti 10 Starliner UAV

Indian Navy got its first indigenous **medium-altitude long-endurance** (MALE) drone, the Drishti 10 Starliner unmanned aerial vehicle (UAV). It is an advanced **intelligence, surveillance, and reconnaissance** (ISR) platform. It is India's first indigenous MALE drone. 70% of the drone is made using indigenous components. It is a **variant of Elbit Systems' Hermes 900 Starliner drones**.



It has **~36 hours of endurance** and a **substantial 450 kg payload capacity**. It stands out as the only all-weather military platform certified with NATO's STANAG 4671 (standardized agreement 4671) for airworthiness. Drishti 10 Starliner is equipped with state-of-the-art sensors, enhanced endurance, advanced communication capabilities, and cutting-edge technologies. The UAV would play a pivotal role in shaping future naval operations and **safeguarding India's national maritime interests** in the Indian Ocean region.

4. New Design Epaulettes for Admirals (Navy)

The new design of epaulettes for admirals has been unveiled by the Navy. The newly designed epaulettes features a **golden Navy button** at the top, followed by an **octagon with the National Emblem**, a **crossed Indian sword** and **telescope**, and **Stars denoting the ranks**. The octagon in the new design has been **drawn from the naval ensign** and inspired by **rajmudra** of **Chhatrapati Shivaji**.



Adopting the new design reaffirms their commitment to the two pillars of Panch Pran (Five Resolves) given by the PM during the 76th Independence Day: Take Pride in our Roots and Remove any trace of Colonial Mindset.

5. Cold Dark Matter

Scientists have found a new approach to exploring cold dark matter (CDM), a hypothetical dark matter that constitutes 25% of the current Universe. The universe is made up of at least two kinds of matter: **Baryonic matter and Dark matter**. Baryonic matter made of protons and neutrons, which can be measured. Baryonic matter includes stars and galaxies and all objects they contain.

Dark matter can be classified into 3 general groups: hot dark matter (HDM), warm dark matter (WDM), and cold dark matter (CDM). Of the three, CDM has long been the leading candidate to account for the missing mass in the universe. CDM is believed to have been existed since the universe began influencing the growth of galaxies and the formation of the first stars. Scientists think it's likely an exotic particle that hasn't been detected yet. The widely used **Weakly Interacting Massive Particles (WIMP) model** proposes that cold dark matter comprises heavy particles with very weak interactions with normal matter.

6. Amaterasu

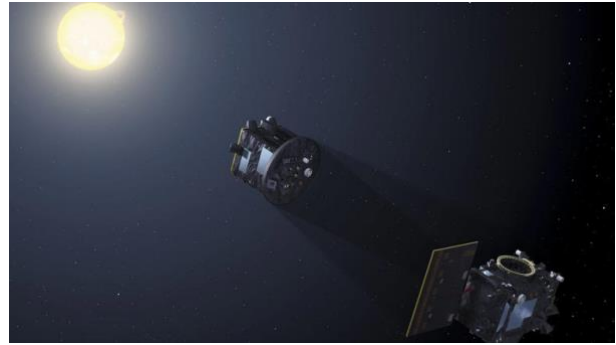
Japanese scientists discovered a very high energy **cosmic-ray event** named 'Amaterasu,' the 2nd-highest energy cosmic ray ever discovered. It has been named after the Japanese Sun goddess. It appears to have arrived from a void in space where nothing is known to exist. The Amaterasu particle possesses **energy surpassing 240 exa-electron volts (EeV)** (exa = 10^{18}) making it **40 millions times more powerful than particles produced by the Large Hadron Collider**, the world's most powerful particle accelerator. It **ranks second only to the Oh-My-God particle**, another ultra-high-energy cosmic ray detected in 1991, which registered at 320 EeV.

7. Cosmic Rays

They are high-energy particles, moving at nearly the speed of light, originate from the Sun, other Stars in the galaxy, and distant galaxies. These particles can include **protons, alpha particles (helium nuclei)**, and **heavier ions**. Ultra-high-energy cosmic rays are subatomic particles from extragalactic sources with energies greater than 1 EeV. They are crucial for studying astrophysical phenomena and understanding the properties of particles at very high energies.

8. Proba-3 Mission

India will launch the **European Space Agency's (ESA) Proba-3 mission** in September 2024. It will be the world's first **precision formation flying mission**. Its aim is to form a 144-m long solar coronagraph, which will create an artificial eclipse, revealing **new views of the Sun's faint corona**. Proba-3 will consist of two small satellites: a **Coronagraph spacecraft** and a **solar-disc-shaped Occulter spacecraft**. The coronagraph will allow scientists to study the Sun's elusive corona with unprecedented proximity and detail.



By flying in tight formation about **150 metres apart**, the **Occulter** will precisely cast its shadow onto the Coronagraph's telescope, blocking the Sun's direct light. This will allow the **Coronagraph to image the faint solar corona in visible**, ultraviolet and polarised light for many hours at a time.

Proba-3's unique positioning will provide **new insights into the origins of coronal mass ejections (CMEs)** eruptions of solar material that can disrupt satellites and power grids on Earth. The mission will also **measure total solar irradiance**, tracking **changes in the Sun's energy output** that may influence Earth's climate. The Proba-3's formation flying also **serves as a testbed for future multi-satellite missions**.

9. Japan's SLIM Mission

SLIM is Japan's first lunar surface mission. Its objective is to showcase **precision landing capabilities** on the Moon, targeting a landing **within 100 meters** of its chosen site. The mission aims to **soft-land** with the smallest ever area tolerance on the moon, it is also being called as **Moon Sniper**. It weighs a mere 590 kg, $\sim 1/7^{\text{th}}$ of the weight of Chandrayaan-3 (3,900 kg). SLIM is lighter because it carried **much less fuel**. Upon soft landing, SLIM will deploy **two small rovers called Lunar Excursion Vehicle (LEV) 1 and 2**. They will study the lunar surface near the landing point, collect temperature and radiation readings, and attempt to study the moon's mantle.

10. Einstein Probe

China has launched a novel astronomical satellite named '**Einstein Probe**' into space. EP represents a mission led by the Chinese Academy of Sciences (CAS) focused on **time-domain high-energy astrophysics**. European Space Agency (ESA) and the Max Planck Institute for Extra-terrestrial Physics (MPE), Germany are the mission partners. Its objective is to monitor the sky in the soft X-ray band and to detect **intense bursts of high-energy light** originating from celestial objects like merging neutron stars and black holes. Unlike traditional X-ray telescopes, the distinctive design of the Einstein Probe enables it to simultaneously observe nearly one-twelfth of the sky. This capability allows the identification of new sources as they emit X-rays, facilitating **in-depth studies of known and new celestial phenomena over extended time frames**. It will identify light emissions from gamma-ray bursts, supernovae, flares from distant stars, and events within the Solar System, including emissions from comets.

11. Direct-to-Cell Satellite Technology

SpaceX has launched the first set of Starlink satellites equipped with **direct-to-cell capabilities**. These Starlink satellites can **beam phone signals from space directly to smartphones**.

Direct-to-cell technology **allows for the direct transmission of communication signals**, including text messages, voice, and data, from space-based satellites **to mobile devices** without conventional ground-based infrastructure. The technology will also **connect Internet of Things (IoT)** devices with common LTE mobile standards. This is beneficial in remote or underserved areas, where setting up conventional terrestrial networks can be difficult or economically impractical.

12. Plasma Waves

Scientists have detected high-frequency plasma waves in the upper atmosphere of Mars, offering valuable insights into the plasma processes within the Martian environment. Plasma waves are **oscillations or fluctuations in the density of charged particles**, such as electrons and ions, within a plasma. Plasma is a state of matter where gas particles become ionized, leading to a mix of positively charged ions and free electrons. These charged particles can collectively form various types of waves. Plasma waves can **have different frequencies**, including low-frequency waves (like ion acoustic waves) and high-frequency waves (like electron plasma waves).

Researchers frequently observe various **plasma waves in the Earth's magnetosphere**. These waves play a crucial role in **energizing and transporting charged particles** throughout the magnetosphere. Certain plasma waves, like electromagnetic ion cyclotron waves, act as a **cleaning agent** for the Earth's radiation belt, which can be **hazardous to satellites**.

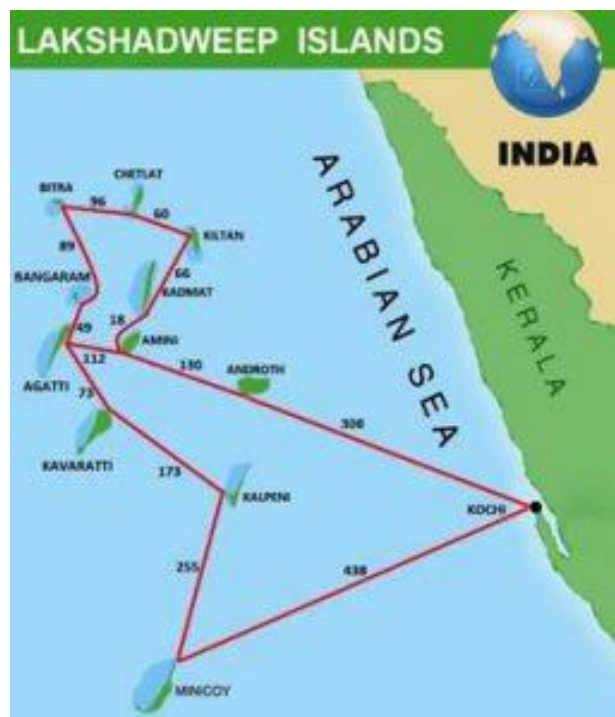
13. Magnetars

A study has revealed that AstroSat (India's first multi-wavelength space observatory) has detected intense sub-second **X-ray bursts** from a new neutron star 'SGR J1830-0645'. SGR J1830-0645 (a magnetar) is a relatively young and solitary neutron star, with an age of approximately 24,000 years. Magnetars are **neutron stars with an ultrahigh magnetic field**. The emission of high-energy electromagnetic radiation in magnetars is powered by the decay of their magnetic fields. They also exhibit strong temporal variability, featuring slow rotation, rapid spin-down, and bright, short bursts, sometimes extending to months-long outbursts.

14. Kochi-Lakshadweep Islands Submarine Optical Fibre Connection (KLI-SOFC)

The PM has inaugurated the Kochi-Lakshadweep Islands Submarine Optical Fiber Connection (KLI-SOFC) project in Kavaratti, Lakshadweep. The project has extended **submarine cable connectivity from Kochi to 11 Lakshadweep Islands**, including Kavaratti, Agatti, Minicoy etc. Till now, communication with the Islands relied solely on satellite, with limited bandwidth capacity unable to meet the growing demand. Population of Lakshadweep Islands will be provided high speed wireline broadband connectivity through **FTTH and 5G/4G Mobile network**.

It will contribute significantly to the 'Digital India' and 'National Broadband Mission' objectives, facilitating implementation of

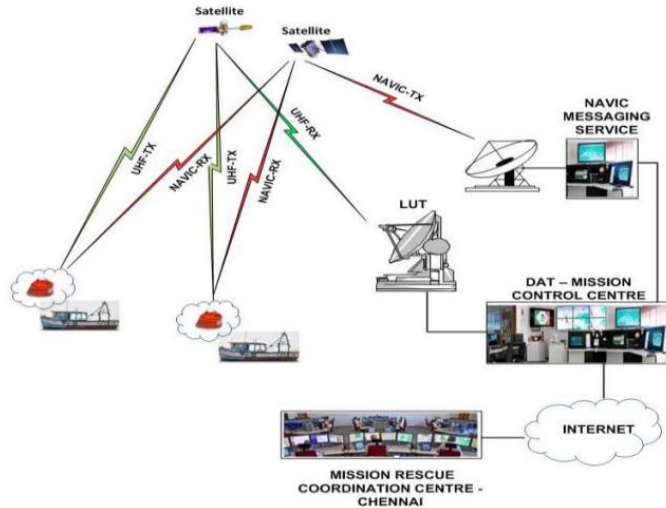


various e-governance projects in the Lakshadweep Islands by the Government of India. It will help **boost e-Governance, tourism, education, health, commerce, and industries** in the region, which may lead to **enhanced standards of living and accelerated social and economic development** on the islands.

15. Second Generation Distress Alert Transmitter (DAT-SG)

ISRO has developed an improvised distress alert transmitter (DAT-SG) with advanced capabilities for fishermen at sea to **send emergency messages from boats**.

Conventionally, using DAT, messages are transmitted via a communication satellite to the **Indian Mission Control Centre**, where alert signals are decoded for the fishing boat's identity and location. The information is then relayed to **maritime rescue coordination centers (MRCCs)** of the **Indian Coast Guard**, which coordinates search and rescue operations for distressed fishermen. The Second Generation DAT has some additional features.



Real-Time Acknowledgments: Besides sending distress signals, the DAT-SG has the facility to **send back acknowledgement** to the fishermen who activate the distress alert from sea. This will provide them with assurance that help is on the way.

Two-way communication: In addition to sending distress signals, it can also receive messages from control centers. It will help in **providing advance warnings** about adverse weather, cyclones, tsunamis, or emergencies.

Potential Fishing Zones (PFZs) updates: DAT-SG transmits regular updates on Potential Fishing Zones (PFZs) to fishermen, aiding them in maximizing catches and saving time and fuel.

Bluetooth connectivity: It can connect to mobile phones via Bluetooth, allowing messages to be read in the native language through a dedicated app.

16. Zosurabalpin Antibiotic

Researchers have identified a new class of antibiotics called 'Zosurabalpin' with the potential to tackle a drug-resistant bacterium, *Acinetobacter baumannii*. Zosurabalpin is an **antibody** that is effective **against CRAB (carbapenem-resistant *Acinetobacter baumannii*)-induced pneumonia and sepsis in mouse models**. The antibiotic kills *A. baumannii* through a previously unknown mode of action. It **inhibits the transport of the molecule lipopolysaccharide (LPS)** by inhibiting a complex of proteins. The antibiotic has demonstrated efficacy against over 100 clinically tested samples of CRAB in the laboratory.

17. Operation AMRITH

The Government of Kerala has launched operation 'AMRITH' to **tackle anti-microbial resistance**. AMRITH stands for **Antimicrobial Resistance Intervention for Total Health**. Under the operation unannounced inspections will be conducted at retail pharmacies to detect over-the-counter sales of

antibiotics, without prescription. Pharmacies need to **maintain accurate records of antibiotic sales** and **comply with prescription regulations**. They should also display a poster which states, 'antibiotics not sold without doctor's prescription'. Kerala's plan reflected a multi-sectoral approach, which is aligned with **India's National Action Plan on AMR**.

18. National Essential Diagnostics List

Indian Council of Medical Research (ICMR) has started the process of revising the current National Essential Diagnostic List for the first time since its introduction in 2019. In 2018, **WHO had recommended the development and implementation of NEDL** to facilitate the availability of diagnostics across various tiers of healthcare pyramid. NEDL lists the essential and most basic tests that should be available at various levels of healthcare facilities in a country. These facilities include primary health centers, health and wellness centers, sub-health centers, and the village level. Tests are listed after a careful consideration of the **disease burden data** across different States of India. List is aligned with National programs and adhere to Indian public health standards. The list contains **117 general laboratory tests for diagnosis** of a broad range of common conditions that include both **communicable** and **non-communicable disease**.

19. Tricholime

ICAR-Indian Institute of Spices Research, Kozhikode has developed a new granular lime-based Trichoderma formulation which is a fungal bio-control agent. Trichoderma is a **fungal biocontrol agent** present in all soils. Tricholime integrates **Trichoderma and lime** into a single product, making the **application easier for the farmers**.

Tricholime serves as a **bio-pesticide** and **bio-fertiliser in crop production**. Being a bio pesticide, it **promotes plant growth** and **shields crops from soil-borne pathogens**, all in a single application. Functioning as bio fertiliser, tricholime **improves the physical condition of soil**, enhances **secondary nutrient availability** and boosts **soil microbial activity**.

20. Wetland City Accreditation

MoEF&CC has nominated Indore (Madhya Pradesh), Bhopal (Madhya Pradesh), and Udaipur (Rajasthan) for **Wetland City Accreditation (WCA)**. It is a **voluntary system** under the **Ramsar Convention** to acknowledge cities that have taken **exceptional measures to conserve and protect urban and peri-urban wetlands**. It was introduced in 2015. Its aim is to enhance the conservation and sustainable utilization of urban and peri-urban wetlands, providing socio-economic benefits for local communities. The WCA allows cities to **gain international recognition for their efforts** in protecting their wetlands. It will **raise public awareness** about urban wetland conservation. It will **aid in nationwide implementation of Amrit Dharohar** initiative by MoEF&CC.

Indore has 2 Ramsar sites: **Sirpur Lake** and **Yashwant Sagar**, Bhopal has Bhojpur wetland and Udaipur is surrounded by 5 major wetlands, Pichola, Fateh Sagar, Rang Sagar, Swaroop Sagar, and Doodh Talai.

21. Chandaka-Dampara Wildlife Sanctuary

The Government of Odisha is planning to introduce Sambar and Gaur (bison) to the Chandaka-Dampara wildlife sanctuary. It is located in the Odisha's **Khurda district**. It marks the north-eastern edge of the Eastern Ghats. It was designated as a sanctuary in 1982. Its landscape experiences a **tropical climate** characterized by distinct summer, rainy season, and winter periods. The flora is moderately diverse, blending **evergreen** and **deciduous elements**. Despite falling under the **semi-evergreen forest zone**, the interplay of biotic factors has altered the original vegetation character. The flora include Bankapasia

(Kydia calycina), Gandhana (Premna mucronata), Dhaman (Grewia Tiliaefolia), Kansa (Hymenodictyon excelsum), Jamu (Syzygium Cumini), Kusum (Schleichera oleosa), Sidha (Lagerstroemia parviflora), Karanja, Thorny bamboo etc. The fauna include Elephants, barking deer, Wild Boar, Rhesus Monkey, Pangolin, Sloth Bear, Indian Wolf, Hyena and other mammals.

22. Indian Gaur or Bison

Indian Gaur or Bison is the largest species among the wild cattle and the Bovidae. Indian Bisons are mostly found in the hilly parts of the Western Ghats region such as Bandipur, Wayanad and Mudumalai. Gaur is the state animal of Goa and Bihar. Its IUCN Status is vulnerable and falls under Schedule I of the Wildlife Protection Act, 1972.

23. Snow Leopard Conservation Programme

After 40 years of a conservation breeding program, the Darjeeling zoo now holds the **world's largest captive snow leopard population**. The total snow leopards are 14 (7 males and 7 females). The conservation programme at Darjeeling Zoo is the first and only conservation program in the country for snow leopards. It was initiated in 1985. A major highlight of the conservation program is the **utilization of a broad genetic pool** for snow leopard breeding.

24. Padmaja Naidu Himalayan Zoological Park (Darjeeling Zoo)

It is situated in Darjeeling, West Bengal. It is the **largest high altitude zoo** in India. It specializes in breeding animals adapted to alpine conditions. It has successful captive breeding programs for the snow leopard, the endangered Himalayan Wolf and the Red Panda. The zoo serves as the **central hub for Central Zoo Authority of India's Red Panda program**. It is a member of the **World Association of Zoos and Aquariums (WAZA)**

25. Snow Leopards

Snow leopards (Panthera uncia) belong to the family of cats called Felidae. The snow leopard's fur is whitish to gray with black spots on head and neck, but larger rosettes on the back, flanks and bushy tail. Snow leopards are found in **12 range countries** namely Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan. China contains as much as 60% of all snow leopard habitat areas. In India, snow leopards are found in the **high altitude areas in the forested areas above 3,000 m**. Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh constitute snow leopard Habitat range in India. Snow leopard is the State animal of Himachal Pradesh.

Snow leopards are listed as **Vulnerable** on the **IUCN Red List of Threatened Species**. They are also listed on **Appendix I** of the **Convention on International Trade of Endangered Species (CITES)**. Government of India has also identified the snow leopard as a **flagship species** for the high altitude Himalayas.

26. Himalayan Wolf

The Himalayan Wolf (Canis lupus chanco) has been **assessed for the first time** on the **International Union for Conservation of Nature (IUCN) Red List**. It is a subspecies of the gray wolf found in the Himalayan region. The Himalayan wolf resides in Tibetan Plateau in China. In Northern India, the Himalayan wolf is found in **Ladakh** and the **Lahaul-Spiti** region in north-eastern Himachal Pradesh. The assessment estimates that there are 2,275-3,792 mature individuals scattered throughout the Himalayan region, encompassing Nepal, India, and the Tibetan Plateau. Himalayan wolves

are smaller and more compact than other subspecies, characterized by shorter legs and snouts. **Well-adapted to the harsh mountainous terrain**, they possess strong limbs and a stout body, enabling them to navigate and survive in challenging environments.

The Himalayan Wolf has been classified as **Vulnerable by IUCN** and falls in **Schedule I** of the **Wildlife Protection Act, 1972**.

27. Punganur Cows

It is an **indigenous breed of cattle**, native to **Punganur village** in the **Chittoor district of Andhra Pradesh**. They're a distinctive dwarf breed, recognized as the **world's shortest humped cattle** (Standing at just around 70-90 cm tall and weighing less than 200 kg). The colour of their coat ranges from white, grey, and light brown to dark brown or red, while some individuals may exhibit a combination of white with patches of red, brown, or black. Punganur cows are currently present in Andhra Pradesh, Telangana, Karnataka, Kerala, Maharashtra, and Tamil Nadu. This breed is well-suited to hot and arid climates. They are valued for their high-fat A2 type milk, perfect for ghee production, yielding 1 to 3 litres per day with 8% milk fat, surpassing other native breeds with 3 to 4% fat.

28. Eurasian Otter

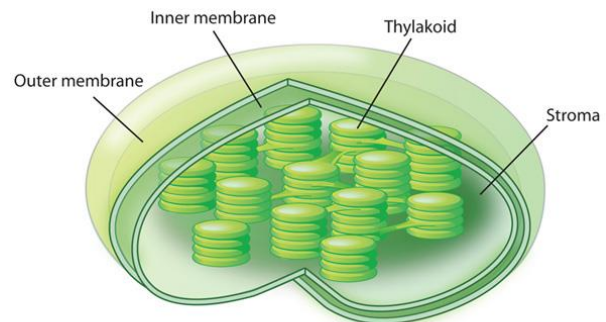
Eurasian Otter (*Lutra lutra*) was spotted for the **first time in Kerala** at the **Chinnar Wildlife Sanctuary in Idukki**. Eurasian Otter is a **semi-aquatic carnivorous mammal**. They are **shy and nocturnal**. The Eurasian otter lives in a **wide variety of aquatic habitats** including highland and lowland lakes, rivers, streams, marshes, swamp forests and coastal areas independent of their size, origin or latitude. The species holds a conservation status of **Near Threatened** on the **IUCN list**. It is classified under **Schedule I of the Indian Wildlife (Protection) Act of 1972** and falls under **Appendix I of the CITES**. There are three species of otters found in Kerala, including **Eurasian Otter (*Lutra lutra*)**, **Smooth-coated Otter** and **Small-clawed Otter**.

29. Vulture Restaurant

In Jharkhand, a 'Vulture Restaurant' has been established in Koderma district as part of **conservation efforts to conserve the diminishing vulture population**. The initiative aims to mitigate the negative effects of veterinary drugs, especially **diclofenac**, on vultures. (Exposure to diclofenac-contaminated tissues leads to kidney failure in vultures). It serves as a **designated feeding site for the Vultures**. To prevent interference from other animals, bamboo fencing has been erected around the feeding site. The Jharkhand Forest Department also plans to establish a center for vulture interpretation and rescue, incorporating geo-tagging for enhanced monitoring.

30. Thylakoid

Thylakoids are little pouches located in **chloroplasts of plants**. They are found in **ancient, light-sensitive bacteria called cyanobacteria**. They are **photosynthetic bacteria** that obtain energy through photo-synthesis. They are often referred to as **blue-green algae**, although they are not classified as true algae. They store **chlorophyll**, the substance in plants that reacts to sunlight and triggers photosynthesis. The



function of thylakoid is to **perform light-dependent reactions in photosynthesis**.

31. Thylakoid Fossils

Researchers at the **University of Liège, Belgium** have identified microstructures in fossil cells that are **1.75 billion years old**. The oldest known fossil thylakoids date back approximately 550 million years. However, researchers have identified thylakoid membranes in fossil cells that are 1.75 billion years old. These findings suggest a minimum age for the divergence between cyanobacteria with and without thylakoids. It presents a possibility that the development of thylakoids might have significantly contributed to the phenomenon known as the '**Great Oxygenation**'.

32. Great Oxygenation Event

Around 2.4 billion years ago on earth the oxygen released by cyanobacteria filled the ocean and made its waters oxygen rich. Over time, this **oxygen started escaping into the atmosphere**, where it **reacted with methane**. As more oxygen escaped, **methane was eventually displaced**, and oxygen became a major component of the atmosphere. This event is known as the **Great Oxidation Event**.

33. Goddess Sita's Birthplace

The Bihar Chief Minister has launched a INR 72-crore development plan for Goddess Sita's birthplace at **Punaura Dham in Sitamarhi, Bihar**. The plan for development includes renovation of the existing temple dedicated to Goddess Sita and preparing a roofed **pradakshina path** (path for circumambulation) around it.; development of the Luv Kush Vatika, Sita Vatika, and Sita Kund etc.

Earlier, the **Janaki temple in Sitamarhi** was believed to be the birthplace of Sita. But now Punaura Dham is recognized as Sita's birthplace in Sitamarhi by both the Union and State Governments. Researchers have found that the Janaki temple is only about 200 years old, while Punaura Dham aligns with references in the Ramayana and has historical structures like Sitakund and dedicated gardens.

34. Discovery of Jain Scriptures

Three 11th-century Jain sculptures were recently discovered in Varuna village of Mysuru district, during drainage work. Of the three sculptures, one has suffered severe damage and is beyond recognition. However, the other two were in relatively good condition. One of the sculptures **portrays a Jain Tirthankara**, but it is difficult to ascertain exact identity in the absence of any symbols. These sculptures have been shifted to the Archaeological Survey of India (ASI) museum at the Indira Gandhi Rashtriya Manav Sangrahalay in Madhya Pradesh.

35. Jain Tirthankaras

In Jainism, a **Tirthankara is a spiritual teacher and savior** of the righteous path (dharma). **Tirthankaras are supreme preachers of dharma**. Having conquered the cycle of death and rebirth (samsara) themselves, they pave the way for others to follow. Upon realizing the true nature of the self or soul, the Tirthankara achieves **kevala jnana** (omniscience). The Jain tradition **recognizes 24 Tirthankaras** who contributed towards the development of the Jain



religion. The 1st **Tirthankara** is **Rishabhanatha** and the 24th and **last Tirthankara** is **Lord Mahavira**.

36. Kadamba Inscription

A 10th century A.D. Kadamba inscription written in Kannada and Sanskrit has been found in Goa. The Kadamba Inscription has been found in the **Mahadeva temple** at **Cacoda** in southern Goa. The epigraph is engraved in **Kannada and Nagari characters** of the 10th century AD. It records that when Talara Nevayya was administering the mandala, his son Gundayya having taken a vow to fulfil his father's desire of capturing a gopura of the port of Goa, fought and died after fulfilling his father's wish. It is in the **literary style of the Talangre inscription of Jayasimha I** of the same period.



37. Kadambas of Goa

The Kadambas of Goa served as **subordinates to the Chalukyas of Kalyana**. They ruled Goa between **10th-14th century CE**. Chandor, formerly known as Chandrapur, was the capital of this Kadamba dynasty, and also an important port. Emperor **Tailapa II of the Chalukyan dynasty** appointed Kadamba Shasthadeva as **Mahamandaleshwara of Goa** in recognition of his assistance in **dethroning the Rashtrakutas**. In 960 AD, **Kadamba Shasthadeva** successfully captured the city of Chandavara from the Shilaharas. Subsequently, he conquered the port of **Gopakapattana**, known as present-day Goa.

38. GI Tag for Kachchhi Kharek

Kachchhi Kharek, the **indigenous variety of dates** of Kutch, has become the second fruit of Gujarat (after Gir Kesar Mango) to get a GI tag. The presence of dates in Kachchh (Kutch) is believed to be **~400-500 years old**.

Unlike other countries, dates grown in Kutch are harvested at the **khalal stage**, as they can't withstand moist weather. Kutch is the **only place around the world** where **fresh dates** (without wait for getting it dark or soft) are



economically cultivated, marketed, and consumed. In other countries, growers wait to **ripen** it further till they become **soft** and **dark brown** or **black** in colour. The **khalal stage** occurs when fruits have matured, accumulated sucrose, turned red or yellow, but remain crisp.

As these are **seedling propagated palms**, each of them is a unique palm in itself, representing a **vast range of diversity in characteristics**. The Kachchh area accounts for more than **85 % of total dates palm cultivation in India**.

39. National Transit Pass System

The Union Government has launched the **National Transit Pass System (NTPS)**. It has been launched to facilitate the **seamless transit of timber, bamboo, and other forest produce** across the country through a **single permit**. With this permit, individuals involved in the forest and agroforestry sector will no longer need **permits from multiple States** to facilitate the transit of their goods. The **QR coded**

transit permits generated under NTPS will allow check gates across various States to verify the validity of the permits and allow seamless transit. As of now, **25 States and UTs** have **adopted the unified permit system**, simplifying interstate business operations for producers, farmers, and transporters.

40. MoU with JioMart to onboard SHGs as e-Commerce Suppliers

The Ministry of Rural Development (MoRD) has entered into a Memorandum of Understanding (MoU) with **JioMart** to onboard DAY-NRLM's Self Help Groups (SHGs). This collaboration will enable **SHGs** operating under the **Deendayal Antyodaya Yojana**-National Rural Livelihoods Mission (DAY-NRLM) to be **on-boarded as sellers onto the e-commerce fold on JioMart**. Once on-boarded, all SHG sellers will get to avail benefits and guidance in growing their businesses online like amplify the visibility of their products and widen their market, increase the income of SHGs on a sustainable basis, and boost MoRD's provision under the SARAS Collection to be available to a larger consumer base. The **Saras Collection** showcases **daily utility products made by rural SHGs** and aims to provide SHGs in rural areas with market access to Union and State Government buyers.

41. Palna Scheme

The Women and Child Development Ministry aims to establish 17,000 creches in Anganwadi Centres across India. This is being done as part of **Palna Scheme**. Its aim is to address the urgent need for quality day-care facilities /creches for the children of working women and to improve nutrition and health status of children.

The scheme focuses on two types of creches **Anganwadi-cum-Crèches** and **Stand-alone creches** (The crèches which were running under the erstwhile **National Creche Scheme** have been included as Stand Alone Creches). The scheme focuses on **children of 6 months to 6 years**, of working women in **rural and urban areas** who are employed for a minimum period of **15 days in a month**, or **6 months in a year**.

42. PRASADAM

The Union Minister for Health & Family Welfare, has inaugurated India's first Healthy & Hygienic Food Street, **PRASADAM**, at Neelkanth Van, Mahakal Lok, in Ujjain, Madhya Pradesh. It aims to connect people in every corner of the country with pure and safe local and traditional food. The food street is designed to provide various facilities including a kids' play area, drinking water facility, CCTV surveillance, parking, public conveniences and seating spaces. It strives to enhance **Ujjain's tourism** and **safeguard its culinary heritage** while also playing a role in fostering economic development. The initiative will be provided financial support with a funding distribution ratio of either 60:40 or 90:10, under the **National Health Mission**.

43. UPI Tap and Pay

The **National Payments Corporation of India (NPCI)** has initiated the deployment of '**UPI Tap and Pay**'. Instead of a camera, it employs **Near-Field Communication (NFC)** technology (short-range wireless connectivity technology) to capture the **payee's UPI ID** or **Virtual Payment Address (VPA)**. Users are required to find the 'Tap & Pay' button within their UPI app, and the transaction is finalized by tapping the device on the UPI Smart Tag/Smart QR. If a user activates the tap feature for the UPI LITE account, transactions below Rs. 500 will be processed through UPI LITE. For transactions exceeding INR 500, a UPI PIN will be necessary.

44. Mumbai Trans Harbour Link (Atal Setu)

The Mumbai Trans Harbour Link has been inaugurated. It is India's **longest bridge over the sea**.

It is a 22-km-long **twin-carriageway 6-lane bridge** over the **Thane Creek** in the **Arabian Sea**. It has officially been named as the **Atal Setu Nhava Sheva Sea Link**. The MTHL includes a **16.5 km sea link and viaducts** on land at either end with a **cumulative length of 5.5 km**. The **objective of the project** is to **improve connectivity** in the Mumbai Metropolitan Region which comprises the districts of **Mumbai, Thane, Palghar, and Raigad**, and promote the **region's economic development**.

It will connect **Sewri in the island city of Mumbai to Chirle** in Raigad district on the mainland. It will **cut travel time**, and will **decongest the existing route over the Vashi bridge**. It will significantly **improve connectivity** between South Mumbai and the under-construction **Navi Mumbai International Airport**, the **Mumbai Pune Expressway**, the **Mumbai-Goa Highway**, and the main hinterland in general. It will also provide improved access to **Jawaharlal Nehru Port**.

45. Inland Waterways Development Council (IWDC)

The Inland Waterways Authority of India is hosted the inaugural 'Inland Waterways Development Council' meeting in Kolkata.

The IWDC was established in October 2023 by the Government of India. It has been established to focus on comprehensive development of inland waterways and the associated **Inland Water Transport (IWT) ecosystem** for **improved cargo efficiency, passenger movement, and river cruise tourism**, with active participation from States and Union Territories.

The Ministry aims to raise inland waterways' cargo modal share **from 2% (present) to 5%** under the **Maritime India Vision 2030**. The 2047 goals envision cargo volumes to rise from **120 million tonnes per annum presently to over 500 million tonnes**.

SEA LINK & VIADUCTS

MUMBAI TRANS HARBOUR LINK is a 22 km long 6-lane (3+3-lane) bridge, with an emergency lane on each side, connecting Sewri in the island city to Chirle on the mainland.

THE SEA LINK IS 16.5 KM LONG; the viaducts on land on both sides are cumulatively 5.5 km long.

INTERCHANGES ARE LOCATED AT Sewri on the Mumbai side, and at Shivaji Nagar and Jaisa on SH-54 (Uran-Panvel Road) and Chirle on NH-348 (JNPT Road) on the mainland side.

STEEL & CONCRETE



Trucks that moved the concrete for the project travelled a distance *equal to that from Earth to Moon*



Reinforcing bars (used in reinforced concrete) used in the project could have built *17 Eiffel Towers*.



Length of prestressed steel wire in project is *equal to four times the diameter of the Earth*.



85,000 tonnes of orthotropic steel used in the deck, the weight of *more than 185 Boeing 747 jumbo jets* (without passengers or fuel)

NOTE: With effect from 1st February 2022, the monthly ForumIAS Epic Magazine, for the month will provide wholistic coverage for the said month up to 20th of the month. This ensures that issues / stories that occur after 21st of the month are allowed to fully develop and are covered wholistically in the next month.