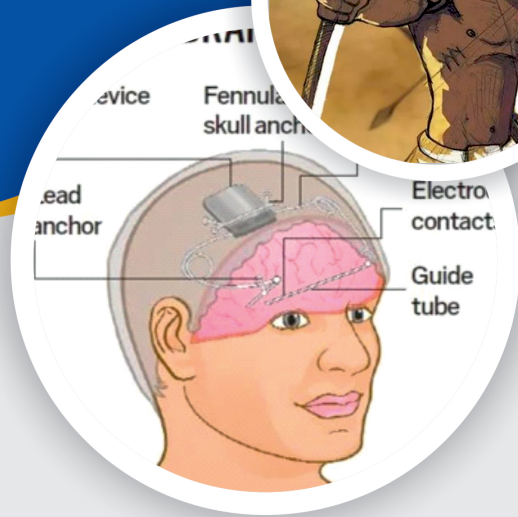
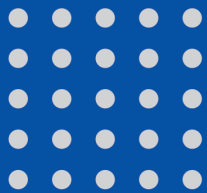




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# Current Affairs

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## Santhal Hul

### Syllabus: GS1/History and Culture

#### Context

- In Jharkhand, June 30 is observed as Hul Diwas, marking the anniversary of the 1855 Santhal rebellion/ Santhal Hul, one of the earliest peasant uprisings against the British.

#### Santhal Hul

- Santhal Hul of 1855 was a revolt against imperialism led by four brothers, Sidho, Kanho, Chand, and Bhairav Murmu, along with sisters Phulo and Jhano.
- The Santhals also fought against the upper castes, zamindars, darogas, and moneylenders, described by the umbrella term 'diku', in an attempt to safeguard the economic, cultural, and religious aspects of their lives.

#### Genesis of the uprising

- In 1832, certain areas were delimited as 'Santhal Pargana' or 'Damin-i-Koh', in present-day Jharkhand.
- The area was allocated to the Santhals from areas of the Bengal Presidency.
- However they followed the repressive practice of land-grabbing and begari (bonded labor) of two types: kamioti and harwahi.
- The Murmu brothers led around 60,000 Santhals against the East India Company and engaged in guerrilla warfare.
- The British hanged Sidhu in 1855, followed by Kanhu in 1856.

#### The SPT and CNT Acts

- The Santhal Pargana Tenancy Act of 1876 (SPT Act) enacted by the British, prohibited the transfer of Adivasi lands (urban or rural land) to non-Adivasis.
- The land can only be inherited as per the Act, thus retaining the rights of Santhals to self-govern their land.
- The Chotanagpur Tenancy Act, (CNT Act) enacted by the British in 1908 as a result of the Birsa Movement, allows land transfers within the same caste and certain geographical areas with the approval of the District Collector.

## Amaravathi: The Rise and Fall of One of the Greatest Buddhist Sites

### Syllabus :GS 1/History

#### In News

- Union Finance announced the facilitation of financial support of Rs.15,000 crore through multilateral development agencies for the development of Amaravati .

#### About Amaravathi

- Discovery and Initial Use (Late 1700s): Raja Vessareddy Nayudu discovered ruins in Dhanyakatakam village, Andhra Pradesh, and used the limestone pillars and panels for building materials, unknowingly destroying parts of the ancient Amaravathi site.
- Others in the region followed suit, leading to further destruction until 1816.
- Colonial Survey : Colonel Colin Mackenzie, first surveyor general of India, began surveying the site in 1816 after an earlier visit in 1798.
- This led to the rediscovery of the Amaravathi stupa but also resulted in further destruction.
- Modern Capital Named Amaravati : In 2015, Andhra Pradesh Chief Minister named the new capital Amaravati, derived from the ancient Buddhist site, for numerological reasons.

- The capital is about 20 km from the original Amaravathi.
- Amaravati, famous for the Amareswara temple, which is dedicated to Lord Shiva, dates back to the 2nd century BCE and was once the capital of the Satavahanas and also the Pallava kings.

### Introduction and Spread of Buddhism in Andhra:

- Buddhism, emerging in the 5th century BCE in Magadh, reached Andhra through trade.
- Amaravati was a seat of Buddhism prior to the rise of Satavahanas, and a stupa and monastery were built there during the reign of Emperor Ashoka (269-232 BC) under Mauryan Empire.
- Emperor Ashoka's 3rd-century BCE inscription boosted its spread
- Andhra's first urbanization was linked to Buddhism's growth. Merchants played a key role in supporting Buddhism.
- Local practices like megalithic burials influenced the design of stupas.

### Significance of Amaravathi in Buddhism:

- Amaravathi was a major center for Mahayana Buddhism, with Acharya Nagarjuna's teachings spreading it across South Asia and beyond. It is considered sacred by figures like the Dalai Lama.
- The Amaravathi stupa led to the development of the Amaravathi school of art, a major style of ancient Indian art known for its aesthetic sculptures and influence on later Buddhist art across South and Southeast Asia.

### Decline of Buddhism in Andhra:

- The decline of Buddhism in Andhra was linked to the rise of Shaivism and socio-economic changes. By the 4th century CE, Buddhism faced reduced patronage and competition from other religions.
- Destruction and Looting (19th Century): Following Mackenzie's survey, many sculptures were removed and sent to various locations, including London, where they experienced further deterioration.

### Recent Repatriation Efforts:

- Australia returned a stolen Amaravathi-style sculpture under the 1970 UNESCO Convention. However, there is a lack of systematic provenance research and proactive repatriation efforts in India.
- Many Amaravathi sculptures are dispersed globally. There is a lack of dedicated academic programs in India at the Amaravathi School of Art, with the Art Institute of Chicago being an exception.

## Saint Hilarion Monastery

Syllabus: GS1/ Culture

### Context

- Recently, the UNESCO tag for Tell Umm Amer heritage site in Gaza was announced during the ongoing 46th session of the World Heritage Committee at New Delhi.

### About Tell Umm Amer (aka Saint Hilarion Monastery)

- It stands and nestled amidst the coastal dunes in Nuseirat Municipality, Palestine, this remarkable site dates back to the 4th century as a testament to centuries of devotion and cultural exchange.
- The monastery owes its existence to Saint Hilarion, a visionary ascetic who sought solitude in the wilderness.
- Initially, it served as a haven for solitary hermits, but over time, it evolved into a vibrant coenobitic community—a place where monks lived together, sharing their spiritual journeys.
- It was inscribed on both the 'World Heritage List' and the 'List of World Heritage in Danger'.
- This dual recognition underscores both its historical value and the urgent need to protect it from the ongoing conflict in Gaza.

### Significance and Influence

- First Monastic Community: Saint Hilarion Monastery holds the distinction of being the first monastic community in the Holy Land. Its establishment laid the groundwork for the spread of monastic practices throughout the region.
- Strategic Location: Positioned at the crossroads of major trade and communication routes between Asia and Africa, the monastery became a hub of religious, cultural, and economic interchange during the Byzantine period.

## Kalaripayattu

Syllabus :GS 1/Art and Culture

### In News

- Ministry of Youth Affairs & Sports Recognized Kalaripayattu Federation of India for Promotion of Kalaripayattu in Country

### About Kalaripayattu

- Origin and Historical linkages : It originated in Kerala, India, but its exact origin is uncertain.
- It is mythologically linked to Lord Parasurama reclaiming Kerala, though historians dispute this.
- Historically dated between 200 BCE and 600 CE, with peak popularity in the 14th to 16th centuries.
- Evolution : Initially used for hunting, it evolved into a structured combat system effective for self-defense and warfare.
- It is considered one of the oldest and most scientific martial arts globally.
- Physical Feats: Includes feats like chattom (jumping), ottam (running), and marichil (somersault), integral to the training.
- It Involves learning to use various weapons such as swords, daggers, spears, maces, and bows with arrows.
- Cultural Significance: Kalaris (training grounds) are important centers of both martial training and religious worship.
- Specialization in indigenous medicinal practices is also a focus of Kalaripayattu.



## Corridor Projects for Vishnupad and Mahabodhi Temples

Syllabus: GS1/Art and Culture

### Context

- The Finance Minister announced corridor projects for Bihar's Vishnupad and Mahabodhi temples during her Union Budget speech.

### About

- These will be modelled on the successful Kashi Vishwanath Temple Corridor, to transform them into world-class pilgrim and tourist destinations.
- The Vishnupad Temple at Gaya: The Hindu temple is dedicated to Lord Vishu.
- Architecturally, the temple is around 100 feet tall and has 44 pillars.
- It is located on the banks of the Falgu river and was built in 1787 on the orders of Queen Ahilyabai Holkar of Ahmadnagar.
- Mahabodhi Temple at Bodh Gaya: The Mahabodhi Temple Complex at Bodh Gaya is a UNESCO World Heritage Site.
- The temple stands to the east of the Mahabodhi Tree, where Gautam Buddha is believed to have attained nirvana.
- The temple has a unique shape and a height of 170 feet.
- The Mahabodhi Temple Complex is the first temple built by Emperor Asoka in the 3rd century B.C., and the present temple dates from the 5th–6th centuries.







## Khandagiri & Udayagiri Caves

Syllabus: GS1/Art and Culture

### Context

- President Droupadi Murmu, visited the Khandagiri and Udayagiri caves in Bhubaneswar, Odisha.

### About

- The rock cut caves were built around the 2nd century BC by King Kharavela of the Meghavahana dynasty.
- These were first discovered by British Officer Andrew Sterling in the 19th century AD.
- The caves were built for the Jain monks and offered them a place to stay and meditate.
- Originally there were around one hundred and seventeen caves built. However only thirty-three caves survive today.
- Eighteen caves are located in the Udaygiri hill and fifteen in the Khandagiri hill.

### Major caves of Udaygiri caves

- Hathigumpha: or the elephant cave as it is known, bears the inscriptions of King Kharavela.
- Rani Gumpha: or the Queen cave ; is a double storeyed structure with beautiful carvings.
- Ganesh Gumpha: the Ganesha Cave known for its carvings of Jain tirthankars and other sculptures.
- Vyaghra Gumpha: or the Tiger cave is so called because the entrance is shaped like the head of the tiger and the door shaped like a tiger's throat

### Major caves of Khandagiri caves

- Barabhuji Gumpha features the twelve armed Sasana Devi's facing each other along with Tirthankar sculptures.
- Trushula Gumpha: The twenty-four Jain Teerthankar's carved on the walls of the cave.
- Ambika Gumpha: The Yaksha and Yakshini of each Tirthankar is carved on the walls of the cave.

## World's Oldest Cave Paintings

Syllabus :GS 1/Art & Culture

### In News

- Recently, Scientists have discovered World's oldest cave paintings.
- Until now, the oldest-known cave painting was one at Leang Tedongnge cave, also in Sulawesi, from at least 45,500 years ago.

### About the painting

- The cave painting was found on the ceiling of Leang Karampuang cave in the Maros-Pangkep region of South Sulawesi, Indonesia.
- It depicts three human-like figures interacting with a wild pig, painted in dark red pigment.
- Scientists used a new dating method involving laser technology to date calcium carbonate crystals that formed over the painting.
- The painting has been determined to be at least 51,200 years old, making it the oldest confidently dated cave art discovered.
- Narrative Interpretation: Researchers interpret the painting as a narrative scene, potentially the oldest-known evidence of storytelling through art.

### Implications:

- Another Sulawesi cave painting at Leang Bulu' Sipong 4, depicting hunting scenes, was also re-dated to at least 48,000 years old.
- These discoveries predate European cave art, challenging previous assumptions about the birthplace of cave art and human storytelling.
- It underscores the importance of Southeast Asia as a pivotal region in the history of human cultural development.
- It opens new avenues for understanding the cultural and cognitive evolution of early humans through their artistic expressions.

## Kozhikode: UNESCO 'City of Literature

Syllabus :GS 1/Art and Culture

### In News

- Kerala's Kozhikode has become India's first UNESCO 'City of Literature'.

### About programme

- UNESCO's City of Literature programme is part of a wider Creative Cities Network which was launched in 2004 and is currently made up of 350 UNESCO Creative Cities globally.
- Members are drawn from more than 100 countries
- UNESCO offers Creative Cities status to cities across the globe based on their cultural contributions and traditions in categories such as Design, Film, Gastronomy, Literature, Media Arts, Music and Folk Art.
- The annual conference provides the member cities with a platform to share knowledge, experiences and good practices towards building sustainable cities of tomorrow.
- The theme of the annual conference of UCCN this year is "Bringing youth to the table for the next decade.

## Mudras in Buddhism

Syllabus: GS1/Art and Culture

### Context

- Recently, the Leader of Opposition in Lok Sabha, in his first speech, invoked the 'Abhaya Mudra', the gesture of the raised open palm that is commonly understood as conveying reassurance and a freedom from fear.

## About the Mudras in Buddhism

- Mudras are symbolic hand gestures used in Buddhist art and practice made during rituals or depicted in images of Buddhas, bodhisattvas, and tantric deities.
- These gestures convey specific ideas, evoke particular states of mind, and represent various Buddhas and bodhisattvas.

## Early Depictions

- For about 500 years after the Buddha, who lived in the 6th or 5th Century BCE, the person of the great teacher was not depicted in the form of an image or sculpture.
- At Sanchi, for instance, the Buddha is symbolised by a vacant throne or a footprint.
- The earliest physical depictions of the Buddha emerged around the turn of the first millennium.
- Gandhara Art (in present-day Pakistan and Afghanistan) and Gupta Period Art (in the Gangetic plains) featured the first Buddharupa (Buddha images).

## Four primary mudras appeared in these early depictions:

- Abhaya Mudra: The gesture, with the raised open palm, of fearlessness, symbolising protection and reassurance.
- Images of Tara, a popular figure in Vajrayana Buddhism, often show her with her right hand in the Abhaya Mudra.
- Bhumisparsha Mudra: The Earth-touching gesture, representing the moment of enlightenment.
- Dharmachakra Mudra: The wheel-turning gesture, symbolising teaching and spreading the Dharma.
- Dhyana Mudra: The meditation gesture, reflecting inner contemplation.

## Tantric Buddhism and Mudras

- Tantric Buddhism incorporated mudras into its rituals. Tantric elements like 'Dharini', 'Mantra', 'Mudra', 'Yantra', and 'Mandala' played a crucial role in worship.

### Buddhism

- Siddhartha, also known as Gautama was the founder of Buddhism
- Born: 563 BC in Lumbini (modern-day Nepal).
- He belonged to a small gana known as the Sakya gana, and was a kshatriya.
- He left his worldly possessions and principedom in search of knowledge. He wandered for several years, meeting and holding discussions with other thinkers.
- He attained enlightenment under the peepal tree in Bodh Gaya in Bihar and gave his first sermon at Sarnath near Varanasi which is known as Dharma-Chakra-Pravartana (turning of the wheel of law).
- He spent the rest of his life travelling on foot, going from place to place, teaching people, till he passed away at Kusinara.

### Mahayana and Vajrayana Buddhism

- As Mahayana (Greater Vehicle) and Vajrayana (Thunderbolt Vehicle) Buddhism evolved, hundreds of new mudras entered Buddhist iconography.
- Mahayana practitioners revered bodhisattvas and read Mahayana Sutras, while adhering to strict principles.

## Chapter- 2

## POLITY

### Agenda for the 16th Finance Commission

#### Syllabus :GS 2/Polity and Governance

#### In News

- The 16th Finance Commission chaired by Dr. Arvind Panagariya has begun its work.

#### About 16th Finance Commission

- The Government of India, with the approval of the President of India, has constituted the Sixteenth Finance Commission, in pursuance to Article 280(1) of the Constitution.
- It Focuses on devolution of the consolidated fund to states and local bodies.

#### Duration and Scope

- The 16th Finance Commission recommendations will cover a period of five years starting from April 1, 2026.
- Distribution of Tax Proceeds: Determine how taxes shared between the Union and States (under Part XII, Chapter I of the Constitution) should be distributed.
- Allocate shares of these proceeds among the States.
- Grants-in-Aid Principles: Define principles governing grants-in-aid of State revenues from the Consolidated Fund of India.
- Specify sums to be granted to States under Article 275 of the Constitution, excluding purposes specified in provisos to clause (1) of that article.
- Augmentation of State Consolidated Fund: Recommend measures to enhance the Consolidated Fund of a State.
- This enhancement aims to supplement resources for Panchayats and Municipalities within the State, based on recommendations from the respective State Finance Commissions.
- Review of financing Disaster Management initiative : It is also mandated to review the present arrangements on financing Disaster Management initiatives, with reference to the funds constituted under the Disaster Management Act, 2005 (53 of 2005), and make appropriate recommendations thereon.

#### Existing Challenges and Issues

- Despite efforts by multiple Finance Commissions, financial support to Urban Local Bodies (ULBs) remains inadequate.
- The fiscal health of municipalities is poor, affecting both city productivity and quality of life.
- Intergovernmental transfers (IGTs) to ULBs are only 0.5% of GDP, much lower than in other developing countries (2-5%).
- For instance, South Africa allocates 2.6%, Mexico 1.6%, the Philippines 2.5%, and Brazil 5.1% of their GDPs to their cities.

#### Other Issues include predictability, earmarking, and horizontal equity of IGTs.

- Impact of Taxation System: Introduction of GST reduced ULBs' tax revenue significantly.
- State Finance Commissions recommended minimal IGTs from states to ULBs (about 7% of state revenue).
- Role of Census Data: Lack of updated Census data (2011 being the latest) hampers evidence-based fiscal devolution.
- Significant urbanization and migration to Tier-2 and 3 cities underscore the need for accurate data.
- Concerns with Parallel Agencies: Growth of parallel agencies undermines local governments financially and operationally.
- Programs like MP and MLA Local Area Development Schemes distort federal structure roles.

## Conclusion and Way Forward

- Cities contribute significantly to India's GDP (66%) and government revenues (90%) and they are Essential for overall national development
- Therefore, The 16th FC must consider India's urbanisation dynamism
- Migration to Tier-2 and Tier-3 cities underscores the importance of capturing demographic changes and infrastructure demands accurately.
- The 16th Finance Commission should prioritize recommending robust fiscal measures to strengthen ULBs financially.
- Stable IGTs are critical to supporting ULBs until they can enhance their own revenue generation capabilities.
- Property tax collection should be improved in parallel with State GST to enhance local revenues.
- Emphasis on maintaining transparent accounts and efficient resource allocation for pollution control, primary healthcare, solid waste management, and drinking water facilities.

## Constitutional Morality

### Syllabus: GS2/Polity

#### Context

- While addressing the conference of the National Judicial Academy, CJI touched on the issue of “constitutional morality” that paves the way for conditions that respect diversity, promote inclusion and pursue tolerance.

#### Constitutional Morality

- Constitutional morality entails the adherence to constitutional norms within a democratic system.
- It goes beyond the literal interpretation to encompass a commitment to values such as sovereignty, social justice, and equality in constitutional adjudication.
- The term was first coined by British historian George Grote in his twelve-volume work, A History of Greece.
- In essence, constitutional morality embodies the balance between freedom and restraint.
- That is, citizens submit to constitutional authorities and, at the same time, have the freedom to criticise those in power.

#### Constitutional morality in Indian Constitution

- Though the term constitutional morality is not explicitly used in the Indian Constitution, it is deeply embedded in several of its sections:
- Preamble: It outlines the principles that underpin our democracy, including justice, liberty, equality, and fraternity.
- Fundamental Rights: It safeguards individuals' rights against the arbitrary use of state power. Notably, the Supreme Court allows for the enforcement of these rights under Article 32.
- Directive Principles: They provide guidelines for the state to pursue the goals set by the constitution's framers, drawing from Gandhian, socialist, and liberal intellectual philosophies.
- Fundamental Duties: Alongside their rights, citizens also have responsibilities to the nation.
- Checks and Balances: It includes judicial review of legislative and executive actions, legislative oversight of the executive, etc.

#### Supreme Court's viewpoint

- In the 2015 Krishnamoorthy case, the court emphasised that constitutional morality is essential for good governance.
- In the case of Union of India vs. Government of the NCT of Delhi, it was ruled that high-ranking officials must adhere to constitutional morality and uphold the ideals outlined in the Constitution to prevent the arbitrary use of authority.
- The Court, in the Government of NCT of Delhi case (2018), likened constitutional morality to a “second basic structure doctrine”, emphasising its role in curbing arbitrary authority.
- Similarly, in Navtej Singh Johar & Ors. vs. Union of India, the Supreme Court held that Section 377 infringed upon the rights of the LGBTQI community and violated the fundamental values of individual dignity as enshrined in Articles 14, 19, and 21 of the Constitution.

- In its decision in Justice K S Puttaswamy and Anr. vs. Union of India and Ors., the Supreme Court confirmed the constitutional validity of Aadhaar with certain restrictions, underscoring the role of courts in checking executive abuse of power.
- In the Justice K S Puttaswamy case (2018), the Court reiterated its duty to uphold constitutional morality by nullifying any law or executive action that contravenes the constitution.

### Challenges

- There have been debates on the interpretation of constitutional morality, particularly regarding conflicts between individual rights and collective interests or between different constitutional provisions.
- For example, issues like affirmative action, freedom of speech, and right to privacy have all invoked discussions on constitutional morality.

### Conclusion

- The judiciary plays a crucial role in interpreting the Constitution and upholding its values.
- Courts often invoke constitutional morality to strike down laws or actions that violate fundamental rights or undermine democratic principles.
- Constitutional morality is not static but evolves over time to reflect changing societal norms and values.
- In conclusion, constitutional morality in India serves as a guiding principle for governance, ensuring that all actions and decisions adhere to the core values enshrined in the Constitution.
- It is a dynamic concept that balances rights with responsibilities and facilitates the progress towards a just and equitable society.

## SC Launches Special Lok Adalat Drive

### Syllabus: GS2/ Polity & Governance

#### In Context

- The Supreme Court commenced special Lok Adalat drive to amicably settle long-pending disputes as a part of its 75th anniversary celebrations.
- Cases including matrimonial disputes, property disputes, motor accident claims, land acquisition, compensation, service and labour, pending before the apex court will be listed before the Lok Adalats for speedy disposal.

#### What are Lok Adalats?

- Lok Adalat is one of the alternative dispute redressal mechanisms.
- It is a forum where disputes/cases pending in the court of law or at pre-litigation stage are settled/compromised amicably.
- Article 39 A: With 42nd Amendment Act of Constitution of 1976, Article 39-A, has been inserted which requires the State to secure that the operation of the legal system:
  - Promotes justice, on a basis of equal opportunity,
  - Provide free legal aid, by suitable legislation or schemes or in any other way,
  - Ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities.
- Legal status: Lok Adalats have been given statutory status under the Legal Services Authorities Act, 1987.
- Decision of the Lok Adalat: Under the said Act, the award (decision) made by the Lok Adalats is deemed to be a decree of a civil court and is final and binding on all parties and no appeal against such an award lies before any court of law.
- If the parties are not satisfied with the award of the Lok Adalat though there is no provision for an appeal against such an award, but they are free to initiate litigation by approaching the court of appropriate jurisdiction by filing a case by following the required procedure, in exercise of their right to litigate.
- Court fee: There is no court fee payable when a matter is filed in a Lok Adalat.
- If a matter pending in the court of law is referred to the Lok Adalat and is settled subsequently, the court fee originally paid in the court on the complaints/petition is also refunded back to the parties.

### Role of members of Lok Adalats:

- The persons deciding the cases in the Lok Adalats are called the Members of the Lok Adalats, they have the role of statutory conciliators only and do not have any judicial role.
- Therefore, they can only persuade the parties to come to a conclusion for settling the dispute outside the court in the Lok Adalat.
- They shall not pressurise or coerce any of the parties to compromise or settle cases or matters either directly or indirectly.

### Difference between Lok Adalat and a regular Court

- The difference between Lok Adalat and law court is that the law court sits at its premises where the litigants come with their lawyers and witnesses go to the people to deliver justice at their doorstep.
- It is a forum provided by the people themselves or by interested parties including social activities or social activist legal aiders, and public-spirited people belonging to every walk of life.
- It is just a firm forum provided by the people themselves for enabling the common people to ventilate their grievances against the state agencies or against other citizens and to seek a just settlement if possible.

### What are Alternate Dispute Resolution Mechanisms?

- Uses a neutral third party to communicate, discuss the differences and resolve the dispute.
- Important Provisions Related To ADR:
- Section 89 of the Civil Procedure Code, 1908
- Acts dealing with ADR:
- Legal Services Authority Act, 1987 (established Lok Adalat System)
- Arbitration and Conciliation Act, 1996
- Types: Arbitration, Conciliation, Mediation, Negotiation, Judicial Settlements



## Legal Advisory Council

### Syllabus :GS 2/Polity and Governance

#### In Context

- In recent years, there has been growing discussion about establishing a Legal Advisory Council .

#### Need for Legal Advisory Council (LAC):

- Several legal issues of national and social importance have emerged from the present government's legislative and policy initiatives, for example:
- The Electoral Bonds Scheme was declared unconstitutional by the Supreme Court for violating voter right to information.
- Proactive proportionality testing could have prevented this.
- In the Aadhaar Act, Supreme Court intervention could have been avoided with prior legal scrutiny.
- Section 106(2) of the Bharatiya Nyay Sanhita, 2023, led to protests due to disproportionate penalties.
- The government had to delay enforcement for amendments.
- As many such issues have arisen due to a lack of adequate examination in terms of legal viability and impact assessments.
- Therefore ,A review of the government's legal consultancy process is needed for better legislative clarity.

#### About Legal Advisory Council (LAC):

- It will be akin to the Economic Advisory Council (EAC) but specifically focused on legal matters.
- It will provide continuous and informed legal inputs
- It would help in clarifying legislative intent and anticipating legal challenges.
- Composition : It could comprise legal luminaries, eminent jurists, prominent academicians, and researchers with specialisations in varied fields which are frequently legislated upon by governments such as criminal law, trade law, international law, business laws, and taxation laws.

#### Functions

- Analyze legal issues referred by the government.
- Assess impacts and outcomes of contemplated laws.
- Conduct suo motu research on contemporary legal issues.

#### How is it different from the Law Commission of India ?

- LAC would work with the Prime Minister's Office, unlike the Law Commission, which operates under the Ministry of Law and Justice.
- The Law Commission is primarily reactive, recommending reforms to existing laws, whereas the LAC would be proactive, addressing potential issues in forthcoming legislation.

#### Do you know ?

- The Law Commission of India is a non-statutory body constituted by the Government of India from time to time.
- The Commission was originally constituted in 1955 and is re-constituted every three years.
- Criticism: The LCI's recommendations are only partially implemented.
- The LCI has produced a limited number of reports despite the pressing nature of legal issues.

#### Conclusion and Way Forward

- Establishing a dynamic LAC and leveraging national law universities can improve the government's handling of legal challenges and legislative processes.
- National law universities can assist in creating constitutionally viable and socially acceptable laws.
- They have the expertise to conduct legal viability and impact assessments, as seen in their involvement in reform committees.
- Funding and administrative support would be crucial for the LAC's effectiveness.



## United Nation on Global Hunger Crisis

### Syllabus: GS2/Issues Relating to Poverty and Hunger

#### Context

- Recently, the State of Food Security and Nutrition in the World (SOFI) report was published by five United Nations specialised agencies, showing chronic hunger remained high and healthy food was out of reach of many people.

#### Key Findings of the Report

- Global Hunger Figures: Approximately 733 million people faced hunger in 2023. To put that in perspective, it's equivalent to one in eleven people globally.
- Future Projection: The report warned that with ongoing trends, about 582 million people are projected to suffer chronic undernourishment by the end of the decade, with half of this population in Africa.

#### Regional Variations

- Africa:** The percentage of the population facing hunger continues to rise, reaching 20.4%. In Africa, the situation is even more critical, where one in five people experienced hunger during the same period.
- Asia:** While hunger levels remain stable at 8.1%, this still represents a significant challenge because Asia is home to more than half of the world's undernourished population.
- Latin America:** Encouragingly, progress is visible here, with hunger levels at 6.2%.
- Impact of Urbanization:** Urbanisation, which was once thought to blur the lines between rural and urban food accessibility, is now drastically reshaping food systems. It affects the availability and affordability of healthy diets.
- Setback in Progress:** Unfortunately, progress in the fight against global hunger has suffered a setback of 15 years, with levels of undernourishment comparable to those seen in 2008-2009. It means that despite our efforts, millions of people still go hungry.
- COVID-19 and Ongoing Effects:** The enduring effects of the COVID-19 pandemic continue to complicate the hunger scenario. The report hints at what hunger might look like by 2030, considering these ongoing challenges.
- Countries are falling significantly short of achieving Sustainable Development Goal (SDG) 2: Zero Hunger by 2030.**
- Beyond Hunger (Food Insecurity):** Access to adequate food remains elusive for billions. In 2023, 2.33 billion people globally faced moderate or severe food insecurity.
- Among them, over 864 million experienced severe food insecurity—going without food for an entire day or more.
- These numbers have stubbornly persisted since 2020, especially in Africa, where 58% of the population faces moderate or severe food insecurity.
- According to UNICEF, almost 8 million children under the age of 5 in 15 crisis-hit countries are at risk of death due to severe wasting—a condition where children become dangerously thin for their height. This crisis is exacerbated by factors such as conflict, climate change, and economic instability.

#### Sustainable Development Goal 2: Zero Hunger

– It aims to achieve Zero Hunger by ensuring that all people have physical and economic access to sufficient, safe, and nutritious food. Unfortunately, the world is currently far off track in achieving this goal.

– The prevalence of moderate or severe food insecurity globally remained unchanged in 2022, affecting an estimated 2.4 billion people. This number is still 391 million more than in 2019.

##### Positive Trends

– Amidst these challenges, there is some positive news. Child stunting has declined steadily over the years, from 204.2 million in 2000 to 148.1 million in 2022. However, sustained efforts are needed to accelerate progress and address hunger comprehensively.

#### Dimensions of Food Security

- Availability:** This dimension encompasses food production within the country, food imports, and existing stockpiles. India's self-sufficiency in food grains has been a priority since Independence, with efforts like the Green Revolution contributing significantly.

- **Accessibility:** Ensuring that food is within reach of every person is crucial. It involves factors like distribution networks, affordability, and transportation.
- **Affordability:** Having enough resources to buy sufficient, safe, and nutritious food is essential. Poverty eradication plays a vital role in improving access to food.

### India's Hunger Situation

- India, unfortunately, bears a significant burden. Persistent droughts, economic challenges, and other factors have led to catastrophic levels of malnutrition among its children.
- Within the country, millions of children suffer from severe nutrition insecurity, meaning they lack access to a diverse diet necessary for healthy growth and development.
- Additionally, soaring food prices have made matters worse, leaving vulnerable children without access to life-saving treatment.

### Global Hunger Index 2023

- India faces significant challenges in ensuring food security for its population.
- According to the Global Hunger Index (GHI), which measures hunger levels in countries, India's score has been a cause for concern. As of the most recent data available (2023) India has ranked India 111 among 125 nations, categorising India's severity of hunger as 'serious'.
- Indicators For GHI are Undernourishment, Child Stunting, Child Wasting, and Child Mortality.

### Related Government Steps

- India's National Family Health Survey (NFHS) data shows positive trends in child stunting, wasting, and underweight percentages. These improvements reflect the impact of programs like the Integrated Child Development Services and the mid-day meal program.
- **Natural Calamities and Food Security:** During calamities like droughts, food production decreases, leading to shortages and price hikes. Some individuals may struggle to afford food, potentially resulting in starvation.
- Historical examples, such as the devastating Bengal Famine of 1943, highlight the severity of food crises during widespread disasters.
- The government has also taken critical steps to enhance food security, including through an India-wide Targeted Public Distribution System, a National Nutrition Mission and the National Food Security Act, and emergency assistance during the pandemic demonstrate the government's commitment to food security.

### Way Forward

- **Nutrition Education:** Raising awareness about balanced diets, micronutrients, and breastfeeding practices is crucial.
- **Agricultural Reforms:** Enhancing agricultural productivity, promoting sustainable farming practices, and improving supply chains are essential.
- **Social Safety Nets:** Strengthening safety nets like the Public Distribution System (PDS) ensures that vulnerable populations receive adequate food.
- **Waste Reduction:** Reducing food wastage at various stages—production, distribution, and consumption—can make a significant impact.
- **Community Participation:** Engaging local communities, NGOs, and civil society in hunger eradication efforts is vital.

### Conclusion

- Achieving Zero Hunger requires concerted efforts at the global, national, and local levels. It isn't just about food availability; it's also about equitable access, nutrition, and overall well-being.
- India, with its vast population and diverse challenges, must prioritise food security as a fundamental right for all its citizens.

### Revamped Model Skill Loan Scheme

#### Syllabus :GS 2/Welfare Schemes

#### In News

- The Minister of State for Skill Development and Entrepreneurship launched the New Model Skill Loan Scheme in New Delhi.

## About the Scheme

- It had been mentioned by the Union Finance Minister Nirmala Sitharaman in the Union Budget 2024-25.
- The Ministry of Skill Development & Entrepreneurship (MSDE) initially launched the Credit Guarantee Fund Scheme for Skill Development (CCFSSD) in July 2015.
- The new Model Skill Loan Scheme is the revised version of the same.
- Key Features : Under the scheme, education and upskilling opportunities will be provided to 25 thousand youth across the country.
- The loan amount limit has been increased to 7.5 lakh rupees which was 1.5 lakh rupees earlier.
- Several Non-Banking Financial Companies (NBFC), scheduled banks, and rural banks also have been added to the scheme which will provide hassle-free loans to students.
- Purpose : It is tailored to support advanced-level skill courses, which often come with higher fees, creating a significant financial barrier for many deserving students.
- This initiative aims to bridge that gap, ensuring that aspiring candidates receive the necessary financial support to pursue their skill training.

## Rule 267 of Rajya Sabha

### Syllabus: GS2/Indian Polity

#### Context

- Recently, the Rajya Sabha Chairman informed that the introspection among parliamentarians regarding the frequent use of Rule 267, terming it an ‘indiscriminate resort’ to the provision.

### About the Rule 267 of Rajya Sabha

- It is nestled within the broader category of ‘suspension of rules’, empowers any member of the Rajya Sabha to propose the suspension of a specific rule.
- It gives special power to a Rajya Sabha member to suspend the pre-decided agenda of the House, with the approval of the Chairman.
- It allows for the suspension of a day’s business to debate the issue suggested by a Member.
- By suspending a rule, the Rajya Sabha can fast-track discussions or decisions on specific issues.
- This suspension isn’t forever. Once the day’s business concludes, the suspended rule reclaims its rightful place.

## Supreme Court Upholds States’ Power to Tax Minerals

### Syllabus: GS2/ Polity and Governance, GS3/ Economy

#### Context

- A nine-judge Constitution Bench of the Supreme Court in, Mineral Area Development Authority v M/s Steel Authority of India, held that states have the power to levy tax on mines and minerals.

#### Background

- The dispute originated from the enactment of the Mines and Minerals (Development and Regulation) Act, also known as MMDR Act by the Union Government in 1957, which brought the control of mines and minerals under the Union government’s jurisdiction.
- Section 9 of the Act, requires those who obtain leases to conduct mining activities to “pay royalty in respect of any mineral removed” to the individual or corporation who leased the land to them.

#### What is Royalty?

- Royalties refer to the fees paid to the owner of a product in exchange for the right to use that product.
- For example, if a movie studio wants to use an existing piece of music by a specific artist in their new film, they will have to pay a royalty fee that goes to the artist.

#### Supreme Court Verdict

- The Supreme Court held that the “royalty” collected by state governments under Section 9 of the Mines and Minerals (Development & Regulation) Act, 1957 (MMDRA) is not a tax.

- The obligation to pay royalty arises from contractual agreements between the lessor and lessee and is not intended for public purposes; rather, it serves as compensation for the exclusive use of mineral resources.
- Contractual payments made to the government cannot be equated to taxes.
- The judgment overruled the decision of the case in *India Cement Ltd. v State of Tamil Nadu (1989)*, which had declared that royalty is a tax.

## Draft Broadcasting Services (Regulation) Bill, 2023

### Syllabus: GS2/polity and governance

#### Context

- The Internet Freedom Foundation decried secret changes to the draft Broadcasting Services (Regulation) Bill, which expands regulatory requirements on online news and entertainment media.

#### Key features of the Draft Bill

- The Bill is an attempt to replace the Cable Television Networks (Regulation) Act, 1995.
- Multiple types of broadcasters and broadcast network operators will be regulated under the draft Bill.
- Television broadcasting networks will have to register with the central government, while OTT platforms must provide an intimation after meeting a certain threshold of subscribers.
- The draft Bill also seeks to regulate broadcast of news and current affairs programmes (excluding print news). Such programmes will have to comply with the prescribed programme code and advertisement code.
- The draft Bill provides for a self-regulatory structure to ensure compliance with the programme and advertising codes. This includes;
  - Self-regulation,
  - Constituting self-regulatory organizations, and
  - Establishing a Broadcast Advisory Council.
- Each broadcaster will have to also set up an internal Content Evaluation Committee (CEC). All broadcast content must be certified by the CEC.
- The Bill also provides for the constitution of a Broadcast Advisory Council, with government membership, that would hear complaints against broadcasters.

## Proposal by PARAKH on student assessment

### Syllabus : GS 2/Education

#### In News

- The Performance Assessment Review and Analysis of Knowledge for Holistic Development (PARAKH) suggested to Include Class 9-11 performance for Class 12 results

#### About PARAKH

- National Assessment Centre- PARAKH was set up in NCERT as an independent constituent unit in 2023, to fulfil the basic objectives of setting norms, standards, guidelines and implement activities related to student assessment along with other tasks as mandated by the National Education Policy (NEP) 2020.

#### There are four major areas of focus for PARAKH:

- Capacity Development in Competency Based Assessment
- Large-Scale Achievement Survey
- Equivalence of School Boards
- Holistic Progress Cards for the Foundational, Preparational, Middle and Secondary Stages.

#### Recent Recommendations

- Integration of Performance: Performance from Classes 9, 10, and 11 should be included in the final Class 12 report card, with weighted contributions of 15% from Class 9, 20% from Class 10, 25% from Class 11, and 40% from Class 12.
- Assessment Types: Class 9: 70% formative assessments, 30% summative assessments.
- Class 10: 50% formative assessments, 50% summative assessments.

- Class 11: 40% formative assessments, 60% summative assessments.
- Class 12: 30% formative assessments, 70% summative assessments.
- Holistic Progress Card: Includes self-evaluation, teacher assessments of group work, and peer feedback.
- Credit System: Classes 9 and 10: 40 credits each.
- Classes 11 and 12: 44 credits each.
- Subject-specific credits include 32 for Classes 9 and 10 (e.g., 12 for languages, 4 each for mathematics, science, social science).
- National Credit Framework: Boards are recommended to develop a credit transfer system aligned with the National Credit Framework.
- The credit system aligns with the NEP 2020's concept of the Academic Bank of Credits.

## COMBINED EVALUATION

Weight	Class 9	Class 10	Class 11	Class 12
Formative	70%	50%	40%	30%
Summative	30%	50%	60%	70%

■ Formative are classroom assessments through holistic progress cards, projects, group discussions, etc; summative are end-term examinations

■ Each class will have two terms for assessment

### Weighted marks at the end of higher secondary stage

Class 9	Class 10	Class 11	Class 12
15%	20%	25%	40%

## ICMR to Transfer Technology for Commercialisation of TB Kit

Syllabus: GS2/Health

### Context

- Indian Council of Medical Research (ICMR) has begun work on bringing in affordable, faster and easy-to-use testing technology for detection of tuberculosis (TB).

### About

- The Council has invited Expressions of Interest (EOI) for undertaking 'Transfer of Technology' for the commercialisation of A CRISPR Cas based TB detection system for the detection of Mycobacterium TB.
- The system can detect the TB bacteria using DNA from a patient's saliva for a very low cost, can identify the bacteria with preliminary symptoms, and test over 1,500 samples simultaneously within approximately two hours.

### What is Tuberculosis?

- Tuberculosis (TB) is an infectious disease that most often affects the lungs and is caused by the bacteria Mycobacterium tuberculosis.

- It spreads through the air when infected people cough, sneeze or spit.
- TB can manifest in two forms: Latent TB infection and active TB disease.
- In latent TB infection, the bacteria are present in the body, but the immune system keeps them in check, and the person does not exhibit symptoms.
- However, the bacteria can become active later, leading to active TB disease, which is characterized by symptoms such as persistent cough, chest pain, weight loss, fatigue, and fever.
- Symptoms: prolonged cough (sometimes with blood), chest pain, weakness, fatigue, weight loss, fever, night sweats.
- The symptoms people get depend on where in the body TB becomes active. While TB usually affects the lungs, it also affects the kidneys, brain, spine and skin.
- Treatment: Tuberculosis is preventable and curable.
- Tuberculosis disease is treated with antibiotics.
- TB Vaccine: The Bacillus Calmette-Guérin (BCG) vaccine remains the only licensed vaccine against TB; it provides moderate protection against severe forms of TB (TB meningitis) in infants and young children.

### India's Burden of TB

- India accounts for around 27% of TB cases worldwide – which is the world's highest country-wise TB burden.
- In India TB kills an estimated 480,000 people every year or over 1,400 patients every day.
- Additionally, the country also has more than a million 'missing' TB cases annually, which are not notified.
- India's aim to eliminate TB by 2025.

### Challenges Faced by India in Eliminating TB

- Diagnostics and Case Detection: The accurate and timely diagnosis of TB remains a challenge.
- Some areas lack access to modern diagnostic tools, leading to reliance on older methods with limitations.
- Drug-resistant TB cases: India has a significant burden of drug-resistant TB, including multidrug-resistant TB (MDR-TB).
- This type of TB is much harder to treat and requires more expensive, specialized drugs and a longer duration of treatment.
- Poor primary health-care and infrastructure: In many parts of India, especially in rural and remote areas, there is limited access to healthcare facilities.
- This can result in delayed diagnosis and treatment, allowing TB to spread within communities.
- Stigma and Awareness: Stigma associated with TB can lead to delays in seeking healthcare, and lack of awareness about the disease may contribute to its persistence.
- Private Sector Engagement: A significant portion of healthcare services in India is provided by the private sector.
- Coordinating efforts between the public and private sectors and ensuring standardized treatment protocols are crucial for effective TB control.
- Treatment Adherence: TB treatment requires a prolonged course of antibiotics, and ensuring patient adherence to the full course is challenging.
- Vulnerable Populations: Certain populations, such as migrant workers, urban slum dwellers, and those living in crowded conditions, are at higher risk of TB.

### Steps Taken by Government of India to Eliminate TB

- Revised National Tuberculosis Control Program (RNTCP): The RNTCP, launched in 1997, was the flagship program to control TB in India.
- The program has been continuously revised and strengthened over the years.
- National Tuberculosis Elimination Program (NTEP): The Government of India has developed a National Strategic Plan (2017-25) for Ending TB in the country by 2025.
- Pradhan Mantri TB Mukta Bharat Abhiyan (PMTB MBA): Launched in 2022 for community support to TB patients with the objective to provide people with TB with additional nutritional, diagnostic and vocational support.
- Universal Drug Susceptibility Testing (DST): The government has scaled up efforts to provide universal

access to drug susceptibility testing, helping to identify drug-resistant strains of TB early and tailor treatment accordingly.

- Earlier, the patients were started on first line treatment and were tested for drug resistance only if the therapy did not work.
- Ni-kshay portal: An online Ni-kshay portal has been set up to track the notified TB cases.
- New Drugs: Newer drugs such as Bedaquiline and Delamanid for the treatment of drug-resistant TB have been included in the government's basket of drugs provided free TB patients.
- R&D for Treatment: Researchers have been studying shorter three- and four-month courses of anti-tubercular drugs, instead of the existing six-month therapy.
- Vaccine Development: Trials are underway to test the effectiveness of a vaccine called Immuvac, which was initially developed to prevent leprosy, in preventing TB.
- Researchers are also testing VPM1002, which is a recombinant form of the BCG vaccine modified to express the TB antigens better.

### Suggestions

- Setting norms and standards on TB prevention and care and promoting and facilitating their implementation;
- Developing and promoting ethical and evidence-based policy options for TB prevention and care;
- Monitoring and reporting on the status of the TB epidemic and progress in financing and implementation of the response at global, regional and country levels.

### CRISPR-Cas9

– Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) is a DNA sequence which is part of the bacterial defense system.

– Cas9 (CRISPR-associated) is the name of the protein that transfers resistance.

1. It is an enzyme that acts like a pair of molecular scissors, capable of cutting strands of DNA.

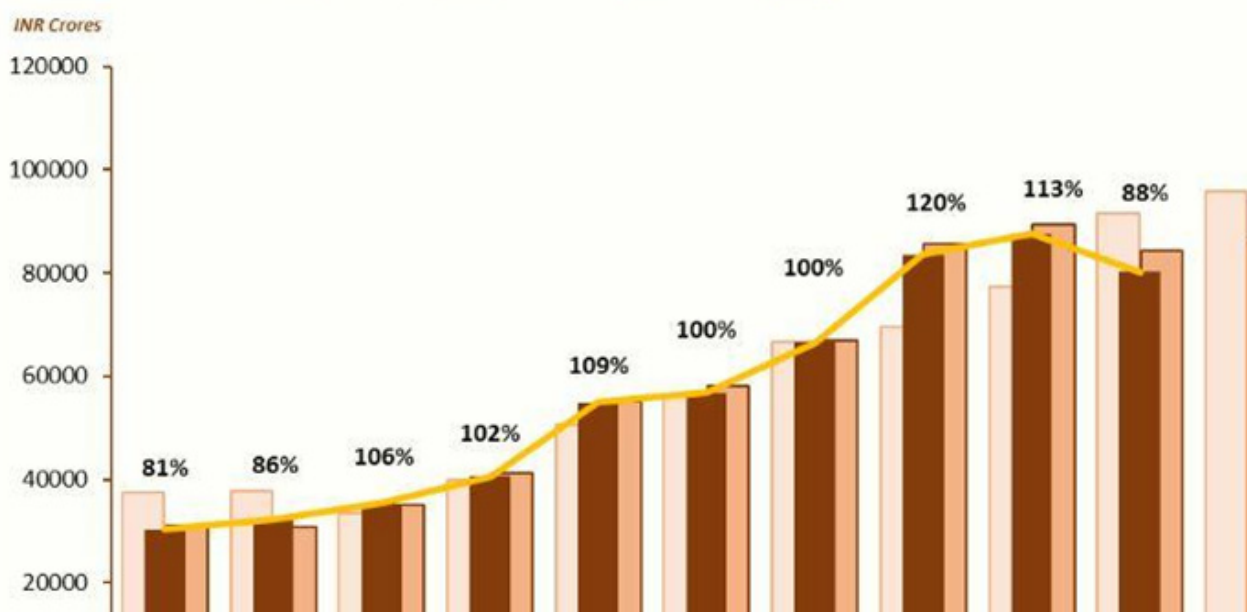
2. It allows researchers to easily alter DNA sequences and modify gene function.

– In 2020, Emmanuelle Charpentier and Jennifer A. Doudna was awarded the Nobel Prize in chemistry for discovering CRISPR-Cas9.

### A Decade of the Health Sector in Union Budgets

Health as a sum of figures from Department of Health & Family Welfare and Department of Health Research under Ministry of Health and Family Welfare, Ministry of AYUSH & Department of Pharmaceuticals under Ministry of Chemicals and Fertilisers

Expenditure Estimates: Budget Revised Actuals % Utilisation



## Budget 2024: India's Healthcare Sector

### Syllabus: GS2/Health

#### Context

- Finance Minister Nirmala Sitharaman announced significant measures in the Union Budget 2024 to bolster India's healthcare sector.

#### About

- The Health Ministry's budget allocation increased by 12.59% to Rs 90,658.63 crore.
- The Department of Health and Family Welfare will receive a significant portion of this allocation, with Rs 87,656.90 crore dedicated to its initiatives.
- The Department of Health Research will receive Rs 3,301.73 crore, ensuring continued support for medical research and development.
- One of the key measures announced was the exemption of customs duties on three additional cancer medications, a move designed to alleviate the financial burden on patients battling cancer.
- These three cancer medications: Trastuzumab Deruxtecan, Osimertinib, and Durvalumab, are commonly prescribed in India for breast cancer, lung cancer and bladder cancer.
- Changes in Basic Customs Duty (BCD) on X-ray tubes and flat panel detectors.

#### Healthcare Sector of India

- Healthcare Sector: It comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment.
- India's healthcare delivery system is categorised into two major components – public and private.
- Public Sector: It comprises limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of Primary Healthcare Centers (PHCs) in rural areas.
- Private Sector: The private sector provides the majority of secondary, tertiary, and quaternary care institutions with a major concentration in metros, tier-I, and tier-II cities.

#### Structure of Financing of Public Healthcare Sector in India

- The Ministry of Health and Family Welfare broadly takes responsibility for formulating policy for public health.
- It provides administrative and financial support to states to operate public health facilities and infrastructure, and to deal with specific health issues, such as maternal health and nutrition.
- It also establishes and runs medical Institutes of National Importance such as AIIMS as well as establishments in union territories including Delhi.
- The Ministry comprises: the Department of Health and Family Welfare, which is responsible for implementing public health schemes and regulating medical education, and
- The Department of Health Research which is responsible for conducting medical research.

#### Concerns with low Public Expenditure on Healthcare

- This has resulted in inadequate health infrastructure including human resources, and slow improvement in key health indicators.
- Limited Access to Healthcare Services: Low public spending hampers accessibility to healthcare services, particularly in rural and remote areas where infrastructure is already lacking.
- This exacerbates health disparities between urban and rural populations and leads to many people being unable to afford or access essential medical services.
- Neglected Preventive and Primary Care: A large portion of healthcare spending in India is directed towards tertiary care, neglecting preventive and primary healthcare services.
- This results in missed opportunities for early detection and management of diseases, leading to higher treatment costs and poorer health outcomes in the long run.
- Higher Disease Burden: Low public spending on healthcare contributes to a higher burden of preventable diseases such as communicable diseases, malnutrition, and maternal and child health issues.
- Increased Out-of-Pocket Expenditure: The lack of public healthcare infrastructure has led people to use private health services more, and that has increased the financial burden on citizens.



## Recent steps Taken by the Government for the Growth of Healthcare Sector

- National Digital Health Mission (NDHM): Launched in 2020, NDHM aims to create a digital health ecosystem, including health IDs for citizens and the establishment of a national digital health infrastructure.
- Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY): AB-PMJAY, launched in 2018, is a national health protection scheme that provides financial protection to over 100 million families for secondary and tertiary care hospitalization.
- National Health Policy 2017: The National Health Policy outlines the government's vision to achieve the highest possible level of health and well-being for all and emphasizes preventive and promotive healthcare.
- Health and Wellness Centers (HWCs): The government is working towards transforming primary health centers into HWCs to provide comprehensive primary healthcare services, including preventive and promotive care.
- Pradhan Mantri Swasthya Suraksha Yojana (PMSSY): PMSSY aims to enhance tertiary care capacities and strengthen medical education in the country by setting up new AIIMS (All India Institutes of Medical Sciences) institutions and upgrading existing government medical colleges.
- Research and Development Initiatives: The government has been encouraging research and development in healthcare, including support for the development of vaccines, drugs, and medical technologies.
- National Medical Commission (NMC) Act: The NMC Act, passed in 2019, aims to bring reforms in medical education and practice by replacing the Medical Council of India (MCI) and promoting transparency and accountability.
- Jan Aushadhi Scheme: The Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) aims to provide quality generic medicines at affordable prices through Jan Aushadhi Kendras.

### Way Ahead

- The COVID-19 pandemic had shown the cracks in India's health system and highlighted the need for increased public investment in healthcare.
- Effective primary health care can prevent or pre-empt the occurrence of more serious health issues, meaning that overall health outcomes can be improved significantly through investing in primary healthcare.

### Right to be Forgotten

Syllabus: GS2/ Governance

#### In News

- Supreme Court to examine plea on 'right to be forgotten' which pertains to securing digital privacy.

### Right to be Forgotten

- 'Right to be forgotten' deals with individual rights to have a control of the use of their personal data, including photos, videos, etc and have it removed from the records of organisations.
- The European Union's General Data Protection Regulation (GDPR) which outlines data protection laws, protects individual rights in this case under Article 17 of the rules.
- In India, 'right to be forgotten' is considered as a part of the right to privacy, which is a fundamental right granted to Indian citizens under Article 21 of the Constitution.
- In the key 2017 judgement of declaring 'right to privacy' as fundamental, the apex court had acknowledged that the 'right to be forgotten' is a facet of the 'right to privacy'.
- The Centre had passed the Digital Personal Data Protection Act, 2023 last year but is yet to be implemented.

### Sharing of Location in Return for Bail Violates Privacy:SC

Syllabus: GS2/ Polity and Governance

#### Context

- The Supreme Court held that courts cannot impose bail conditions that require accused persons to share their location on Google Maps.

### Background

- The verdict came in an appeal filed by a Nigerian national, Frank Vitus, who is an accused in a drugs case,

challenging a Delhi High Court order of 2022, mandating him to share his Google Map location with the probe officer as a condition for his bail.

### Supreme Court Verdict

- The court also held that “any bail condition which enables the Police/ Investigation Agency to track every movement of the accused by using any technology or otherwise would undoubtedly violate the right to privacy guaranteed under Article 21”.
- On the subject of the “certificate of assurance”, the court held that the grant of such a certificate is beyond the control of the accused, and ordered the removal of this condition as well.
- It stated that if the Embassy does not grant such a certificate within a reasonable time, the accused cannot be denied bail.

### Right to Privacy: Indian Scenario

- In 2017 the K.S. Puttaswamy vs. Union of India judgment declared that the right to privacy a fundamental right as part of the right to life and liberty under Article 21 of the Constitution.
- To protect the personal data the data protection Bill has been in the works since 2018 when a panel led by Justice B N Srikrishna had prepared a draft version of the Bill.

### Right to Privacy: Global scenario

- Article 12 of the Universal Declaration of Human Rights, 1948 and Article 17 of the International Covenant on Civil and Political Rights (ICCPR), 1966, legally protect persons against “arbitrary interference” with one’s privacy, family, home, correspondence, honor and reputation.
- India signed and ratified the ICCPR in 1979, without reservation.
- Article 7 and 8 of the Charter of Fundamental Rights of the European Union, 2012, recognises the respect for private and family life, home and communications.
- Article 8 mandates protection of personal data and its collection for a specified legitimate purpose.
- The General Data Protection Regulation (GDPR) of the European Union focuses on a comprehensive data protection law for processing of personal data.

## West Bengal Suit Against CBI Probes Maintainable

### Syllabus: GS2/Polity and Governance

#### Context

- The Supreme Court upheld the maintainability of a suit filed by the State of West Bengal accusing the Union Government of constitutional overreach and violation of federalism by unilaterally employing the Central Bureau of Investigation (CBI) without the State’s prior consent.

#### Background

- In 2018 the West Bengal government withdrew its consent that allowed the CBI to conduct investigations of cases in the states.
- In its suit, the State contended that despite the revocation of its consent for the central agency under the Delhi Special Police Establishment Act of 1946, the CBI continued to register FIRs concerning offenses that took place within the State.
- The Centre said that a state government cannot claim a right to issue omnibus, sweeping, and overarching directions to withdraw consent for a CBI probe into any matter.

### Central Bureau of Investigation (CBI)

- CBI, functioning under the Ministry of Personnel, Pension & Public Grievances, Government of India, is the premier investigating police agency in India.
- History: The CBI came into being during World War II, when the colonial government felt the need to probe cases of corruption in the War and Supply Department. A law came in 1941. It became the DSPE Act in 1946.
- It was established by a resolution of the Ministry of Home Affairs, Government of India, in 1963.
- The Santhanam Committee on Prevention of Corruption recommended the establishment of the CBI.

- Functions: CBI was established with a view to investigate serious crimes related to the defense of India, corruption in high places, serious fraud, cheating, and embezzlement and social crime, particularly hoarding, black marketing, and profiteering in essential commodities, having all-India and inter-state ramifications.
- It is also the nodal police agency in India that coordinates investigations on behalf of Interpol member countries.
- Jurisdiction: CBI derives power to investigate from the Delhi Special Police Establishment Act, 1946.
- Section 2 of the Act vests DSPE with jurisdiction to investigate offenses in the Union Territories only.
- The jurisdiction can be extended by the Central Government to other areas including Railway areas and States under Section 5(1) of the Act, provided the State Government accords consent under Section 6 of the Act.

### How many types of consent are there for the CBI?

- There are two types of consent for a probe by the CBI. These are: general and specific.
- When a state gives a general consent to the CBI for probing a case, the agency is not required to seek fresh permission every time it enters that state in connection with investigation or for every case.
- Specific Consent: When a general consent is withdrawn, CBI needs to seek case-wise consent for investigation from the concerned state government.
- If specific consent is not granted, the CBI officials will not have the power of police personnel when they enter that state.

### Issues in functioning of CBI

- Legislative Problems: The conduct or continuance of investigation into offenses committed within the territory of a state, consent of the state is required which most of the time is delayed or even denied.
- Political Issues: In 2013, the Supreme Court described the CBI as “a caged parrot speaking in its master’s voice” (Politicization of CBI).
- The observation was made in the context of government interference in the functioning of the CBI in its investigation of the coal blocks allocation cases.
- Transparency Issues: The CBI is exempted from the purview of the Right to Information (RTI) Act, 2005.
- Overlapping Functions: There is an overlap in jurisdictions of Central Vigilance Commission (CVC), CBI and Lokpal in certain cases leading to problems.

### Way Ahead

- The role, jurisdiction and legal powers of the CBI need to be clearly laid down. It will give it goal clarity, role clarity, autonomy in all spheres and an image makeover as an independent autonomous statutory body.
- The Second Administrative Reforms Commission (2007) also suggested that “a new law should be enacted to govern the working of the CBI”.
- The 19th and 24th reports of the parliamentary standing committees (2007 and 2008) recommended that “the need of the hour is to strengthen the CBI in terms of legal mandate, infrastructure and resources”.

## Special Financial Packages for States

### Syllabus: GS2/Polity

#### Context

- In the run-up to the Union Budget, the Chief Ministers of Bihar and Andhra Pradesh have demanded special financial packages for their respective States.

### Financial Grants to States

- The central government provides financial assistance to states through various grants such as:
- Finance Commission Grants: These are awarded based on the recommendations of the Finance Commission of India, which allocates a share of central taxes to states.
- Plan Grants: These are funds allocated under various central government plans for specific sectors like health, education, infrastructure, etc.
- Discretionary Grants: These grants are provided at the discretion of the central government for specific projects or emergencies.

## Constitutional Provisions Related to Centre State Financial Relations:

- Articles 202 to 206 deal with the financial administration of states, including provisions related to their budget, expenditure, borrowing, and taxation powers.
- Articles 268 to 272 outline the distribution of revenues between the Union and the states.
- Article 280 provides for the establishment of a Finance Commission every five years (or as specified by the President).
- Article 282 allows the Union government to provide financial assistance to states for any public purpose.

## What is the Special Category Status?

- It was introduced in 1969 when the fifth Finance Commission sought to provide certain disadvantaged states with preferential treatment. It was named Gadgil Formula after the name of then Deputy Chairman of the Planning Commission, Dr Gadgil Mukherjee. Initially, three states; Assam, Nagaland and Jammu & Kashmir were granted special status. From 1974-1979 Himachal Pradesh, Manipur, Meghalaya, Sikkim and Tripura were added under the category. In 1990, Arunachal Pradesh and Mizoram and in 2001 Uttarakhand were given special category status. On the recommendations of the 14th Finance Commission Gadgil formula-based grants were discontinued.

## Current Share of the States

- The government accepted the recommendations of the 14th Finance Commission and from 2015, it hiked the tax devolution to states from Centre, to 42 percent from 32 percent earlier, and also added a new provision of revenue deficit grants to states facing any resource gap.
- States' share is decided by a formula meant to incentivize demographic performance and each states effort to mobilize its own tax revenue.
- The formula also takes into account geographic area, forest cover and the state's per capita income.
- The 15th finance commission, under the chairmanship of N K Singh has revised tax devolution and brought it down to 41 percent from 42 percent.
- So the current tax devolution to states stands at 41 percent till 2026.
- The 90:10 rule is still applicable to the northeastern and hill states, although there is no special status category.
- All the other states receive Central funding in a 60:40 ratio, 60 percent being the Central government's contribution and 40 percent states.

## Way Ahead

- If the coalition government decides to revisit the status and meet the demands of Bihar and Andhra Pradesh for a special category status, the proposal has to be referred to the 16th Finance Commission.
- In addition to Bihar and Andhra Pradesh, Odisha, Chhattisgarh, and Rajasthan have also been demanding special category status.
- This clarifies that under the current provisions special category status for states does not exist.
- But, central government has the option to grant additional financial aid packages to states having revenue deficit and facing resource gaps.

## Draft Digital Competition Bill

### Syllabus: GS2/Governance

#### Context

- Recently, the Committee on Digital Competition Law (under the Ministry of Corporate Affairs) came to the conclusion that there was a need to supplement the current ex-post framework under the Competition Act, 2002 with an ex-ante framework in the draft Digital Competition Bill.

#### About the Draft Digital Competition Bill

- It emerges against the backdrop of the Competition Act, 2002, and subsequent amendments and recommendations aimed at updating India's competition framework to better address the digital economy.

## Ex-Post vs. Ex-Ante Framework

- **Ex-Post Framework:** The Competition Act, 2002 currently operates on an ex-post basis, which means that the Competition Commission of India (CCI) can take enforcement actions only after anti-competitive conduct has occurred.
- In digital markets, this approach can be time-consuming and allows offending actors to escape timely scrutiny.
- **Ex-Ante Framework:** The CDCL advocates for an ex-ante competition regulation for digital enterprises. This approach allows the CCI to pre-empt and prevent anti-competitive behavior before it happens.
- Notably, the European Union is the only jurisdiction with a comprehensive ex-ante competition framework (Digital Markets Act) currently in force.

### Competition Commission of India (CCI)

- It is the chief national competition regulator in India, and operates as a statutory body within the Ministry of Corporate Affairs and is responsible for enforcing the Competition Act, 2002.
- Its primary objectives are to promote competition and prevent activities that have an appreciable adverse effect on competition in India.
- Its vision includes inspiring businesses to be fair, competitive, and innovative, enhancing consumer welfare, and supporting economic growth.

### Legal Framework

- The CCI operates under the provisions of the Competition Act, 2002, which replaced the earlier Monopolies and Restrictive Trade Practices Act (MRTP Act).
- The MRTP Act was repealed, and the Competition Act, 2002, came into effect based on the recommendations of the Raghavan Committee.

### Key Features

- **Antitrust Regulation:** The CCI examines cases related to anti-competitive agreements, abuse of dominant position, and cartel behavior.
- **Regulation of Combinations:** It reviews mergers, acquisitions, and other combinations to assess their impact on competition.
- **Competition Economics:** The CCI analyzes economic aspects of competition and market dynamics.
- **Advocacy:** It promotes competition awareness and educates stakeholders.
- **International Cooperation:** The CCI collaborates with international competition authorities.
- **Anti-Profiteering:** The CCI ensures that benefits of reduced taxes are passed on to consumers.
- **Market Studies and Research:** The CCI conducts studies to understand market trends and competition issues.

### Unique Characteristics of Digital Markets

- **Economies of Scale and Scope:** Digital enterprises benefit from economies of scale (reduction in cost per unit as production increases) and economies of scope (reduction in total costs with an increase in services).
- These factors drive rapid growth compared to traditional markets.
- **Network Effects:** The utility of digital services increases with the number of users (network effects).
- Rapid growth, combined with network effects, can tip markets in favor of incumbents.

### Key Features of the Draft Bill

- **Quantitative Standards for Dominance:** The draft Bill outlines quantitative criteria for identifying dominance among digital enterprises.
- It uses the 'significant financial strength' test to assess dominance.
- **Preventative Obligations:** To address the unique challenges of digital markets, the CDCL proposes preventative obligations.
- These obligations supplement the ex-post enforcement framework, allowing timely intervention.

### Concerns and Implications

- **Data Privacy:** Stakeholders are concerned about the implications for data privacy. Stringent regulations could impact how companies handle user data.

- **Competitive Landscape:** The competitive dynamics of digital markets may be affected. Some fear that stringent rules could stifle innovation and hamper business operations.
- **Compliance Burdens:** Companies worry about the compliance burdens the bill may place on them.
- **Consumer Choice:** There are concerns that overly restrictive regulations could ultimately affect consumer choice and market dynamics.

### Balancing Act

- While the bill aims to address anti-competitive practices, stakeholders emphasize the need for a balanced approach — one that fosters innovation while safeguarding consumer interests.

### Conclusion

- The Draft Digital Competition Bill aims to enhance competition regulation in digital markets by introducing an ex-ante framework. As India navigates the complexities of the digital economy, this legislation could fundamentally alter the landscape of competition law in India.

## Defamation Case Against Wikipedia

### Syllabus: GS2/ Polity & Governance

#### Context

- News agency Asian News International (ANI) has filed a defamation suit against Wikipedia in Delhi High Court for allowing allegedly defamatory content on ANI's wiki page.

#### What is Defamation?

- It is the act of communicating to a third party false statements about a person, place, or thing that results in damage to its reputation.
- It can be spoken (slander) or written (libel).
- Article 19 of the Constitution grants various freedoms to its citizens. However, Article 19(2) has imposed reasonable exemption to freedom of speech and expression granted under Article 19(1) (a). Contempt of court, defamation and incitement to an offence are exceptions.
- In India, defamation can both be a civil wrong and a criminal offence.
- In civil law, defamation is punishable under the Law of Torts (area of the law that covers most civil suits) by imposing punishment in the form of damages to be awarded to the claimant. Under the Criminal law, Defamation is a bailable, non-cognizable offence and compoundable offence.

## National Security Council

### Syllabus: GS2/ Governance

#### In News

- The Union government has recently restructured the reporting relationships within the National Security Council Secretariat (NSCS). This is a significant development as the NSCS plays a crucial role in advising the government on matters of national security.

#### About the National Security Council (NSC)

- **Established:** 1998
- **Purpose:** The NSC is the apex body for considering political, economic, energy, and security issues of strategic concern. It formulates national security policies and advises the Prime Minister on their implementation.
- **Structure:** The NSC has a three-tiered structure:
  - **Strategic Policy Group:** This group is responsible for long-term strategic planning and policy formulation.
  - **National Security Advisory Board (NSAB):** The NSAB provides expert advice on national security matters.
  - **NSC Secretariat (NSCS):** The NSCS is responsible for coordinating the work of the NSC and its subsidiary bodies.
- **Leadership:** The National Security Advisor (NSA) presides over the NSC and is responsible for providing the Prime Minister with independent and objective assessments of national security threats and challenges.
- **Location:** The NSC operates within the executive office of the Prime Minister of India.

- Agenda: The NSC's agenda includes issues of external and internal security, military affairs, conventional and non-conventional defense, and other matters of strategic importance.

### Significance of Restructuring the NSCS

- The restructuring of the NSCS is expected to improve the efficiency and effectiveness of the organization. It may also strengthen the NSA's role in national security decision-making.

### 'Naavu Manujaru' Programme

#### Syllabus :GS 2/Governance

#### In News

- Karnataka government will start 'Naavu Manujaru' programme in schools.

#### About 'Naavu Manujaru' programme

- It is ordered to begin from the current academic year across all government, aided, and unaided primary and high schools.
- It involves two hours of weekly discussions and dialogues (three periods of 40 minutes each).
- It will cover discussions on social harmony, significance of local and national festivals, folk games, and sports.
- It will also focus on exploration of thoughts of social reformers, visits to local landmarks, and discussions on nuclear families, inequality elimination, and constitutional values like equality, liberty, and fraternity.
- District-level nodal officers appointed to oversee implementation and provide guidance
- Objectives : It is aimed at transforming all educational institutions into centers promoting social harmony, tolerance, and scientific temper.
- It is Introduced to instill values enshrined in the Constitution among students.

### Agenda for the 16th Finance Commission

#### Syllabus :GS 2/Polity and Governance

#### In News

- The 16th Finance Commission chaired by Dr. Arvind Panagariya has begun its work.

#### About 16th Finance Commission

- The Government of India, with the approval of the President of India, has constituted the Sixteenth Finance Commission, in pursuance to Article 280(1) of the Constitution.
- It Focuses on devolution of the consolidated fund to states and local bodies.

#### Duration and Scope

- The 16th Finance Commission recommendations will cover a period of five years starting from April 1, 2026.
- Distribution of Tax Proceeds: Determine how taxes shared between the Union and States (under Part XII, Chapter I of the Constitution) should be distributed.
- Allocate shares of these proceeds among the States.
- Grants-in-Aid Principles: Define principles governing grants-in-aid of State revenues from the Consolidated Fund of India.
- Specify sums to be granted to States under Article 275 of the Constitution, excluding purposes specified in provisos to clause (1) of that article.
- Augmentation of State Consolidated Fund: Recommend measures to enhance the Consolidated Fund of a State.
- This enhancement aims to supplement resources for Panchayats and Municipalities within the State, based on recommendations from the respective State Finance Commissions.
- Review of financing Disaster Management initiative : It is also mandated to review the present arrangements on financing Disaster Management initiatives, with reference to the funds constituted under the Disaster Management Act, 2005 (53 of 2005), and make appropriate recommendations thereon.

## Existing Challenges and Issues

- Despite efforts by multiple Finance Commissions, financial support to Urban Local Bodies (ULBs) remains inadequate.
- The fiscal health of municipalities is poor, affecting both city productivity and quality of life.
- Intergovernmental transfers (IGTs) to ULBs are only 0.5% of GDP, much lower than in other developing countries (2-5%).
- For instance, South Africa allocates 2.6%, Mexico 1.6%, the Philippines 2.5%, and Brazil 5.1% of their GDPs to their cities.
- Other Issues include predictability, earmarking, and horizontal equity of IGTs.
- Impact of Taxation System: Introduction of GST reduced ULBs' tax revenue significantly.
- State Finance Commissions recommended minimal IGTs from states to ULBs (about 7% of state revenue).
- Role of Census Data: Lack of updated Census data (2011 being the latest) hampers evidence-based fiscal devolution.
- Significant urbanization and migration to Tier-2 and 3 cities underscore the need for accurate data.
- Concerns with Parallel Agencies: Growth of parallel agencies undermines local governments financially and operationally.
- Programs like MP and MLA Local Area Development Schemes distort federal structure roles.

## Conclusion and Way Forward

- Cities contribute significantly to India's GDP (66%) and government revenues (90%) and they are Essential for overall national development
- Therefore, The 16th FC must consider India's urbanisation dynamism
- Migration to Tier-2 and Tier-3 cities underscores the importance of capturing demographic changes and infrastructure demands accurately.
- The 16th Finance Commission should prioritize recommending robust fiscal measures to strengthen ULBs financially.
- Stable IGTs are critical to supporting ULBs until they can enhance their own revenue generation capabilities.
- Property tax collection should be improved in parallel with State GST to enhance local revenues.
- Emphasis on maintaining transparent accounts and efficient resource allocation for pollution control, primary healthcare, solid waste management, and drinking water facilities.

## Constitutional Morality

Syllabus: GS2/Polity

### Context

- While addressing the conference of the National Judicial Academy, CJI touched on the issue of "constitutional morality" that paves the way for conditions that respect diversity, promote inclusion and pursue tolerance.

### Constitutional Morality

- Constitutional morality entails the adherence to constitutional norms within a democratic system.
- It goes beyond the literal interpretation to encompass a commitment to values such as sovereignty, social justice, and equality in constitutional adjudication.
- The term was first coined by British historian George Grote in his twelve-volume work, A History of Greece.
- In essence, constitutional morality embodies the balance between freedom and restraint.
- That is, citizens submit to constitutional authorities and, at the same time, have the freedom to criticise those in power.

### Constitutional morality in Indian Constitution

- Though the term constitutional morality is not explicitly used in the Indian Constitution, it is deeply embedded in several of its sections:
- Preamble: It outlines the principles that underpin our democracy, including justice, liberty, equality, and fraternity.



- **Fundamental Rights:** It safeguards individuals' rights against the arbitrary use of state power. Notably, the Supreme Court allows for the enforcement of these rights under Article 32.
- **Directive Principles:** They provide guidelines for the state to pursue the goals set by the constitution's framers, drawing from Gandhian, socialist, and liberal intellectual philosophies.
- **Fundamental Duties:** Alongside their rights, citizens also have responsibilities to the nation.
- **Checks and Balances:** It includes judicial review of legislative and executive actions, legislative oversight of the executive, etc.

### Supreme Court's viewpoint

- In the 2015 Krishnamoorthy case, the court emphasised that constitutional morality is essential for good governance.
- In the case of Union of India vs. Government of the NCT of Delhi, it was ruled that high-ranking officials must adhere to constitutional morality and uphold the ideals outlined in the Constitution to prevent the arbitrary use of authority.
- The Court, in the Government of NCT of Delhi case (2018), likened constitutional morality to a "second basic structure doctrine", emphasising its role in curbing arbitrary authority.
- Similarly, in Navtej Singh Johar & Ors. vs. Union of India, the Supreme Court held that Section 377 infringed upon the rights of the LGBTQI community and violated the fundamental values of individual dignity as enshrined in Articles 14, 19, and 21 of the Constitution.
- In its decision in Justice K S Puttaswamy and Anr. vs. Union of India and Ors., the Supreme Court confirmed the constitutional validity of Aadhaar with certain restrictions, underscoring the role of courts in checking executive abuse of power.
- In the Justice K S Puttaswamy case (2018), the Court reiterated its duty to uphold constitutional morality by nullifying any law or executive action that contravenes the constitution.

### Challenges

- There have been debates on the interpretation of constitutional morality, particularly regarding conflicts between individual rights and collective interests or between different constitutional provisions.
- For example, issues like affirmative action, freedom of speech, and right to privacy have all invoked discussions on constitutional morality.

### Conclusion

- The judiciary plays a crucial role in interpreting the Constitution and upholding its values.
- Courts often invoke constitutional morality to strike down laws or actions that violate fundamental rights or undermine democratic principles.
- Constitutional morality is not static but evolves over time to reflect changing societal norms and values.
- In conclusion, constitutional morality in India serves as a guiding principle for governance, ensuring that all actions and decisions adhere to the core values enshrined in the Constitution.
- It is a dynamic concept that balances rights with responsibilities and facilitates the progress towards a just and equitable society.

## U.P. Hathras Stampede

### Syllabus: GS2/ Governance

#### In News

- A stampede at a religious gathering in Hathras has claimed the lives of over 100 people.
- Many such incidents happened in the past like Kalkaji temple's platform collapse or the Vaishno Devi temple stampede that happened in 2022.

#### What is a stampede?

- Stampedes are often described as the disruption of the orderly movement of crowds leading to injuries and fatalities.
- There are many factors like – poor event management, higher density of people allowed, or even due to natural disasters like sudden heavy rain, flood, or earthquake.

### How can such events be Prevented?

- Proper risk analysis and capacity planning should be done according to the periodicity of the event, weather and terrain.
- Safety codes and communication need to be followed strongly with multiple entry and exit points, availability of emergency medical personnel, first aid kits and ambulances.

### NDMA Guidelines on Crowd Management

- The National Disaster Management Authority (NDMA) has formulated guidelines on crowd management to prevent and mitigate the risks of crowd disasters at events and venues of mass gatherings.
- Risk Assessment and Planning: Develop a comprehensive crowd management plan based on the risk assessment, outlining roles and responsibilities, communication protocols, and emergency response procedures.
- Infrastructure and Facilities: Ensure adequate space, entry/exit points, signage, lighting, and sanitation facilities at the venue.
- Crowd Flow Management: Use technology like CCTV cameras and drones to monitor crowd movement and identify potential risks. Deploy trained personnel to guide and assist the crowd.
- Emergency Response: Develop an emergency response plan for incidents like stampedes, fires, medical emergencies, or terrorist attacks. Ensure adequate medical facilities and trained personnel are available at the venue.
- Training and Awareness: Provide training to organizers, security personnel, volunteers, and other stakeholders on crowd management techniques and emergency procedures.
- Use of Technologies: Use of technology like Artificial Intelligence (AI) and data analytics for crowd prediction and behavior analysis.



**Chapter-**  
**3****GEOGRAPHY****Kallakkadal Phenomenon****Syllabus: GS1/ Geography****Context**

- The Indian National Centre for Ocean Information Services (INCOIS), sounded alert, as the coastal areas of Kerala and Tamil Nadu are likely to experience the ‘kallakkadal’ phenomenon.

**Kallakkadal phenomenon**

- Kallakkadal is a term used for the flooding events caused by Swell Waves.
- UNESCO formally accepted term “Kallakkadal” for scientific use in 2012.

**Swell Waves**

- They are high sea waves that are formed by an ocean swell. Ocean swells occur due to distant storms like hurricanes and not due to the local winds.
- During such storms, huge energy transfer takes place from the air into the water, leading to the formation of very high waves.
- Such waves can travel thousands of kilometers from the storm center.

**Pangong Lake****Syllabus: GS1/ Geography****In News**

- In the satellite images. It is found that China’s People’s Liberation Army (PLA) has constructed underground bunkers in the area around Pangong Lake in eastern Ladakh.

**About Pangong Lake**

- Pangong Tso is a high-altitude, endorheic (landlocked) lake located in the Himalayas, spanning the disputed India-China border.
- Situated at 4,225 meters, and predominantly saline.
- The lake’s water changes colors, appearing blue, green, or even red at different times, depending on sunlight and other factors.
- Pangong Tso is an essential breeding ground for a wide variety of birds, including several migratory species.
- Home to nomadic tribes, Pangong Tso also holds cultural significance, featuring in local folklore.

**Shyok River****Syllabus :GS 1/Geography****In News**

- Five soldiers killed after T-72 tank swept away in Shyok river in eastern Ladakh

**About Shyok river**

- The Shyok river is a tributary of the Indus river, located in the northern part of the Indian subcontinent.
- The river system originates in the Rimo Glacier of Siachen and flows through the Karakoram Range and enters Gilgit–Baltistan.
- The Nubra River is a tributary of the River Shyok .

**Do you know ?**

- Shyok is a small village located on the banks of the Shyok River in Nubra Valley, Ladakh, India.
- It is situated at an elevation of 3,700 meters (12,100 feet) and is the last village on the Indian side of the road to Daulat Beg Oldie (DBO), a military base near the India-China border.

**Hurricane Beryl****Syllabus: GS1/Geography****Context**

- Hurricane Beryl has made landfall with floods in Barbados, St Vincent and the Grenadines and Grenada.

**How do hurricanes form?**

- Warm ocean water and humid, moist air are the two key components needed for hurricanes.
- Warm seawater evaporates, releasing heat energy into the atmosphere.
- The storm's winds become stronger as a result. Without it, hurricanes can't become stronger and will eventually die.

**Difference between Cyclone, typhoon, and hurricane?**

- These large storms have varied names based on where and how they formed, although theoretically being the same phenomenon.
- Hurricane: When storms that develop over the Atlantic Ocean or the central and eastern North Pacific, attain wind speeds of at least 74 miles per hour, they are referred to as "hurricanes" (119 kilometers per hour).
- Typhoons in East Asia are the name given to ferocious, spinning storms that develop over the Northwest Pacific.
- Cyclones: It develops across the Indian Ocean and South Pacific.



**GEO IAS**  
— It's about quality —

## Climate Finance Action Fund

Syllabus: GS3/ Environment

### In News

- Azerbaijan, which will host the 29th Conference of Parties to the United Nations Framework Convention on Climate Change, announced the Climate Finance Action Fund to help developing countries fight climate change.

### About Climate Finance Action Fund

- The fund will receive annual contributions from fossil fuel-producing countries and companies. Initial fundraising aims for \$1 billion.
- The fund will target climate projects in developing countries, meeting the next generation of national climate plans to limit global warming to 1.5 degrees Celsius, and addressing the consequences of climate change-fuelled disasters.

## Methane

Syllabus: GS3/ Environment

### In Context

- Tree bark in the world's forests absorbs the greenhouse gas methane and this discovery could have big implications for tackling climate change.

### About

- The methane traps much more heat in the atmosphere than the equivalent amount of CO<sub>2</sub>. But while CO<sub>2</sub> can last in the atmosphere for hundreds of years, methane has a lifetime of around ten years.
- This short atmospheric lifetime means that any changes to sources of methane or processes that remove methane from the atmosphere (known as methane sinks) can have rapid effects.

### Methane

- Methane is a colorless, odorless, and highly flammable gas, and the main component in natural gas.
- Agriculture is the largest single source of global anthropogenic methane (CH<sub>4</sub>) emissions, with ruminants the dominant contributor.
- It has contributed about a third of the observed climate warming since preindustrial times.

## South Africa's Climate Change Bill

Syllabus: GS3/Environment

### Context

- Recently, The Climate Change Bill was approved by South Africa's National Assembly.

### About

- The bill will impose mandatory curbs on the emissions from large, fossil-fuel heavy industries and require climate-adaptation plans from towns and villages.
- This would enable South Africa to meet its emissions reduction commitments under the Paris agreement.

### Need for the new Law

- South Africa relies on coal as its primary fuel source for electricity generation and is one of the world's top 15 greenhouse gas (GHG) emitters.

- The energy sector represents roughly 80% of gross emissions, with energy industries (~60%) and transport (~12%).
- Being an economy which is dependent on agriculture and tourism, South Africa has faced increasing Western pressure to accelerate its transition away from fossil fuel.

### Scenario in India

- India does not have comprehensive legislation on climate change. A Private Member's Bill, called the Council on Climate Change Bill was moved in 2022, but there has been no significant movement on this so far.
- However, climate change features in multiple Acts and subordinate legislation.
- These include the Environmental Protection Act, Forest Conservation Act, Energy Conservation Act, Water (Prevention and Control of Pollution) Act among others.
- SC Verdict: The Supreme Court ruled that citizens have a “right against the adverse effects of climate change,”.
- “Despite Constitutional guarantees that give the citizens equality before the law and right to life and personal liberty, it was now necessary, in the Court's view, to explicitly link the impact of climate change as something which impedes these rights of liberty, life and equality.”
- India's Efforts and Commitments: India has communicated that the intensity of its energy emissions had reduced by 33% from 2005-2019, 11 years ahead of target.
- It also committed to revising its emissions intensity to 45% by 2030 in the updated set of NDC.
- Emission intensity refers to the total amount of GHG emitted for every unit increase of GDP. It is different from absolute emissions.
- India has also committed to source 50% of its electricity in 2030 from non-fossil fuel resources.

### Concerns Over Carbon Border Adjustment Mechanism

#### Syllabus: GS3/Environment

#### Context

- The Economic Survey has raised concerns over the forthcoming Carbon Border Adjustment Tax (CBAT) by the European Union.

#### Carbon Border Adjustment Mechanism (CBAM)

- CBAM is the European Union's tool to put a fair price on the carbon emitted during the production of carbon intensive goods that are entering the EU, and to encourage cleaner industrial production in non-EU countries.
- CBAM is one of the elements of the EU Green Deal, the goal of which is to reduce GHG emissions by 55% by 2030.
- CBAM is aimed at equalizing the price of carbon paid for EU products operating under the EU Emissions Trading System (ETS) and imported goods.
- It refers to a phenomenon where a EU manufacturer moves carbon-intensive production to countries outside the region with less stringent climate policies. Its primary objective is to avert 'carbon leakage'.

#### Implementation of CBAM

- The CBAM system is expected to come into force on January 1, 2026.
- The CBAM will initially apply to imports of Cement, Iron and steel, Aluminium, and Electricity, as these sectors have a high risk of carbon leakage and high carbon emissions.
- EU importers will have to buy carbon certificates corresponding to the carbon price that would have been paid in the EU, if the goods had been produced locally.
- The price of the certificates would be calculated according to the auction prices in the EU carbon credit market.
- Once a non-EU producer can show that they have already paid a price for the carbon used in the production of the imported goods in a third country, the corresponding cost can be fully deducted for the EU importer.
- CBAM will apply on: In principle, imports of goods from all non-EU countries will be covered by the CBAM. Certain third countries who participate in the ETS or have an emission trading system linked to

the Union's will be excluded from the mechanism. This is the case for members of the European Economic Area and Switzerland.



### Impact on India

- As per the Global Trade Research Initiative report India is among the top eight countries that will be adversely affected by CBAM.
- In 2022, 27% of India's exports of iron, steel and aluminum products worth \$8.2 billion went to the EU. It is estimated that a few of its core sectors, such as steel, will be "greatly affected" by CBAM.
- Raising financial resources for climate change adaptation is an "unprecedented challenge" as India's climate action has been largely financed through domestic resources and the flow of international finance has been very limited.

### Concluding remarks

- Europe is on course to implement its Carbon Border Adjustment Tax and both the United Kingdom and the United States are in different stages of imposing their versions of it in due course.
- These taxes are in contravention to the spirit of the Paris Agreement that recognised Common but Differentiated Responsibilities.
- India not only has to deal with climate change and undertake energy transition but also deal with the protectionism of the developed countries.

### Taxonomy for Climate Finance

#### Syllabus: GS3/Environment and Conservation

#### Context

- The 2024 Union Budget, presented by the Finance Minister, includes developing a taxonomy for climate finance to enhance the availability of capital for climate adaptation and mitigation.

#### What is taxonomy for climate finance?

- Climate finance taxonomy refers to a set of standardised regulations and guidelines to inform companies and investors on making impactful investments towards environmental conservation and combating the climate crisis.
- It is a system that classifies which parts of the economy may be marketed as sustainable investments.
- It helps guide investors and banks in directing trillions toward impactful investments to tackle climate change.
- Taxonomies for sustainable climate financing, in general, include a detailed list of economic sectors and activities and corresponding criteria that determine if it aligns with larger climate goals.
- Countries Having the System: South Africa, Colombia, South Korea, Thailand, Singapore, Canada, and Mexico are some of the countries which have developed taxonomies. The European Union has done this as well.

## India's E-Vehicle (EV) Policy

### Syllabus :GS 3/Environment

#### In News

- The government plans to expand its Electric vehicles (EVs) policy to include retrospective benefits for prior investors.
- Previously, incentives were available only for new local facilities established within three years of approval.

#### About Electric vehicles (EVs)

- Electric vehicles (EVs) have gained significant traction in recent years as a cleaner and more efficient alternative to traditional gasoline-powered cars.
- With advancements in battery technology, a growing network of charging infrastructure, and increasing consumer demand, EVs have become a viable option for many drivers around the world.
- Significant investor support is essential to tap into the \$100 billion-plus EV opportunity in India.
- India, being the third-largest automotive market in the world, could potentially “lead the global transition” from internal combustion engine (ICE) to decarbonised electric counterparts.

#### E-Vehicle policy

- The government in March 2024 approved the E-Vehicle policy to promote India as a manufacturing destination for EVs and attract investment from reputed global EV manufacturers.
- Focus : Enhance access to latest technology, strengthen the EV ecosystem, and promote competition among players.
- Aim to lower production costs and improve EV economics for Indian consumers.
- Mandated 50% value addition in manufacturing to occur domestically within five years.
- Reduced import duty on completely built units (CBUs) with a cost, insurance, and freight (CIF) value of \$35,000 from 70%-100% to 15%.

#### Challenges and Issues

- India faces structural cost disadvantages in certain components.
- After-sales service is a major concern for EV customers, impacting the scalability of business models.
- Foreign investments may not always deliver desired outcomes

#### Comparison at Global

- India's EV policy aligns with incentives provided in the U.S., China, and Europe for EV manufacturing.
- Electric cars in Europe and the U.S. remain 10%-50% more expensive than combustion engine vehicles.
- Both regions import 20%-30% of their EV battery demands, highlighting the need for integrated production.

#### Other related steps

- The Indian government has set a target to achieve 30 percent electrification of the country's vehicle fleet by 2030, and has introduced several incentives and policies to support the growth of the EV industry.
- The industry was given a major boost in the FY24 Union Budget for the production of electric vehicles, adoption of hydrogen fuel, and embracing changing technologies.
- In the 2023-24 Union Budget, Finance Minister Nirmala Sitharaman announced a budget allocation of INR 35,000 crore for crucial capital investments aimed at achieving energy transition and net-zero targets by 2070.
- The government has already launched initiatives such as the Faster Adoption of Manufacturing of Electric Vehicles Scheme – II (FAME – II) and the Production Linked Incentive Scheme (PLI).

#### Conclusion and Way Forward

- India's electric vehicle market is poised for significant growth in the coming years.
- With supportive government policies, increasing consumer awareness, and advancements in technology, the country is well positioned to transition towards a more sustainable and eco-friendly mode of transportation.
- As the demand for EVs increases, it presents a tremendous opportunity for both local and international companies to invest in and contribute to the growth of India's EV ecosystem.
- Investors should evaluate potential assets based on competitive advantages, market capabilities, customer feedback, talent, and supply chain strategies.



- There is a need to strengthen domestic players to create capabilities for critical components and encourage foreign automakers to utilize local suppliers.

## UNESCO Designates 11 New Biosphere Reserves

### Syllabus: GS3/ Environment

#### In News

- The UN Educational, Scientific and Cultural Organisation (UNESCO) has designated 11 new biosphere reserves, recognising their importance for conserving biodiversity and cultural heritage.

#### More about the News

- The new designations are in Colombia, the Dominican Republic, Gambia, Italy, Mongolia, Philippines, South Korea and Spain.
- Additionally, and for the first time, the list includes two transboundary reserves, spanning Belgium and the Netherlands, and Italy and Slovenia.
- The 11 newly designated biosphere reserves are:
  - Kempen-Broek Transboundary Biosphere Reserve (Belgium, Netherlands)
  - Darien Norte Chocoano Biosphere Reserve (Colombia)
  - Madre de las Aguas Biosphere Reserve (Dominican Republic)
  - Niimi Biosphere Reserve (Gambia)
  - Colli Euganei Biosphere Reserve (Italy)
  - Julian Alps Transboundary Biosphere Reserve (Italy, Slovenia)
  - Khar Us Lake Biosphere Reserve (Mongolia)
  - Apayaos Biosphere Reserve (Philippines)
  - Changnyeong Biosphere Reserve (South Korea)
  - Val d'Aran Biosphere Reserve (Spain)
  - Irati Biosphere Reserve (Spain).

#### What are Biosphere Reserves?

- Biosphere reserves are designated under the intergovernmental MAB Programme by the Director-General of UNESCO following the decisions of the MAB International Coordinating Council (MAB ICC). Their status is internationally recognised.
- The Man and Biosphere (MAB) Programme, launched in 1971, is an international scientific initiative that aims to foster a harmonious relationship between humans and their environment.
- They integrate three main functions:
  - Conservation of biodiversity and cultural diversity.
  - Economic development that is socio-culturally and environmentally sustainable.
  - Logistic support, underpinning development through research, monitoring, education and training.
- Biosphere Reserves' three main zones:
  - Core Areas: It comprises a strictly protected zone that contributes to the conservation of landscapes, ecosystems, species and genetic variation
  - Buffer Zones: It surrounds or adjoins the core area, and is used for activities compatible with sound ecological practices that can reinforce scientific research, monitoring, training and education.
  - Transition Area: It is where communities foster socio-culturally and ecologically sustainable economic and human activities.
- India has 18 biosphere reserves, 12 of which are recognized under this program, with the Nilgiri Biosphere Reserve being the first.

#### Significance of Biosphere Reserve

- Biosphere reserves play an important scientific role, serving as a site for research and monitoring, providing valuable data and insights that can inform environmental management and policy decisions.
- Furthermore, they help in achieving global development targets such as those set by the Kunming-Montreal Global Biodiversity Framework, inter alia, on protecting and restoring significant portions of the Earth's ecosystems by 2030.
- They also promote unique local sustainable development ideas, safeguard biodiversity, and combat climate change.

## World's first brain implant to control epileptic seizures works

Syllabus: GS3/Science and Technology

### Context

- A UK-based teenager, Oran Knowlson, has become the first person in the world to be fitted with a brain implant to help bring his epileptic seizures under control.

### Deep brain stimulation (DBS)

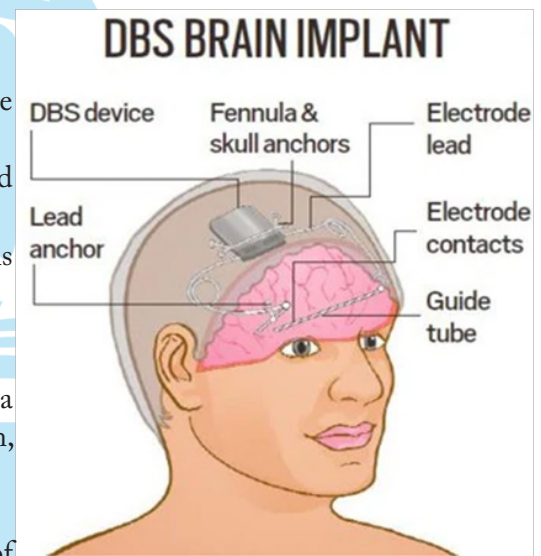
- The device uses DBS, which is also utilized for movement disorders associated with Parkinson's, and other neurological conditions.
- The device, which sends electrical signals deep into the brain, has reduced Knowlson's daytime seizures by 80%.

### How does the device work?

- The neurostimulator delivers constant electrical impulses to the brain to disrupt or block abnormal seizure-causing signals.
- The device was surgically implanted in Knowlson's skull and anchored using screws.
- The device was switched on after Knowlson recovered from his surgery. It can be recharged by a wireless headphone.

### What is Epilepsy?

- Epilepsy, a condition that leads to recurring seizures, sees a person experience jerking of arms and legs, temporary confusion, staring spells, or stiff muscles.
- It is caused by abnormal electrical activity in the brain.
- Cause: The disease has no identifiable cause in nearly 50% of the cases. However, head trauma, tumors in the brain, some infections like meningitis, or even genetics can lead to epilepsy.
- Impact: It can increase the risk of accidents, drownings, and falling.



### Prevalence

- Around 50 million people worldwide have epilepsy and nearly 80% of people with epilepsy live in low- and middle-income countries.
- According to a Lancet study, 2022, In India, between 3 and 11.9 per 1,000 people suffer from epilepsy.

### WHO Response

- The first global report on epilepsy produced in 2019 by WHO, Epilepsy: A public health imperative, highlighted the available evidence on the burden of epilepsy and the public health response required.
- The 75th World Health Assembly adopted the Intersectoral global action plan on epilepsy and other neurological disorders 2022–2031, which recognizes the shared preventive, pharmacological and psychosocial approaches between epilepsy and other neurological disorders.

### Nova Experiment

Syllabus: GS3/Science and Technology

### Context

- New NOvA data has deepened the mystery of subatomic particle's mass i.e. neutrinos.

## About

- NovA is an acronym for 'NuMI Off-axis e Appearance, it creates a beam of neutrinos that fly towards a 14,000-tonne detector.
- NOvA was designed to determine the role of neutrinos in the evolution of the cosmos.
- It does this by trying to understand which neutrino type has the most mass and which type the least.
- Studying these neutrinos can reveal how light or radio waves from the explosion diffuse after travelling a certain distance.

## Neutrinos

- Neutrinos are a type of subatomic particle.
- They don't have an electric charge, have a small mass, and are left-handed (a physics term meaning the direction of its spin is opposite to the direction of its motion).
- They are the second-most abundant particles after photons (particles of light) and the most abundant among particles that make up matter.
- These particles are produced when particles called leptons interact with matter.
- However, the neutrinos themselves interact with matter very, very rarely to produce a corresponding muon, electron or tauon.

## Budget Allocation for National Mission on Natural Farming

### Syllabus: GS3/ Agriculture

#### Context

- The Finance Ministry has allocated Rs 365.64 crore for the National Mission on Natural Farming for 2024-25.

#### What is Natural Farming?

- This farming approach was introduced by Masanobu Fukuoka, a Japanese farmer and philosopher, in his 1975 book *The One-Straw Revolution*.
- Natural Farming is a sustainable agricultural practice that emphasizes chemical-free farming, relying on indigenous cows and locally available resources.
- It avoids chemical fertilizers and pesticides, promoting traditional methods that free farmers from the need for external inputs. This approach focuses on:
  - Biomass Mulching: Covering soil with organic matter to retain moisture, improve soil health, and suppress weeds.
  - Desi Cow Dung-Urine Formulations: Using formulations made from the dung and urine of indigenous cows to fertilize the soil and manage pests.
  - Natural Nutrient Cycling: Enhancing the natural processes that recycle nutrients within the soil.

#### National Mission on Natural Farming

- The Government has formulated National Mission on Natural Farming (NMNF) as a separate and independent scheme by up-scaling the Bharatiya Prakritik Krishi Paddhati (BPKP) from 2023-24.
- To motivate farmers to adopt natural farming and to enhance the reach of natural farming, 1 crore farmers across the country will be initiated into natural farming supported by certification and branding.
- Implementation will be through scientific institutions and willing gram panchayats. 10,000 need-based bio-input resource centers will be established.

#### Challenges to Natural Farming

- Yields drop: India's first organic state, Sikkim, has started seeing decline in its yields after a few years.
- Conviction among Policy Makers: As of now, policy makers fear for the food security of the nation and are non-committal on any major changes in the agriculture sector.
- Resistance by the Chemical inputs-based industry: The chemical-based farming has a strong backing in the form of multi-million-dollar agro-chemical industry, which has fought tooth and nail to sustain the application of chemicals in agriculture.

- Knowledge and Training: Farmers need specialized knowledge and training to implement natural farming techniques effectively. This includes understanding soil health, crop rotation, companion planting, and natural pest management strategies.
- Economic Viability: The economic viability of natural farming can be uncertain. Higher labor costs, lower yields, and the potential for crop failures impacts profitability.

### Way Ahead

- Now is the time when India moves forward on the path of natural farming and takes full advantage of the global opportunities that are emerging.
- Natural farming will reduce dependency on purchased inputs and will help to ease smallholder farmers from credit burden.

### Zero Budget Natural Farming (ZBNF)

– It means raising crops without using any fertilizers and pesticides or any other external materials. The word Zero Budget refers to the zero cost of production of all crops.

– The concept was promoted by SubhashPalekar, in the mid-1990s as an alternative to the Green Revolution's methods.

– ZBNF helps in retaining soil fertility, to ensure a chemical free agriculture and ensure low cost of production (zero cost) and thereby enhancing the farmers income.

#### Four main elements and models of ZBNF:

1. Bijamrita: The seeds are treated with formulations prepared using cow dung and cow urine from native cow species.
2. Jiwamrita/Jeevamrutha: It is a fermented microbial culture obtained from cow dung, urine, jaggery, pulse flour and uncontaminated soil. When applied to soil, it adds nutrients to it, besides acting as a catalytic agent to promote the activity of microorganisms and earthworms in the soil.
3. Acchadana/Mulching: Mulching is the process of covering the top soil with crop wastes/organic waste or with cover crops.
4. Waaphasa/Moisture (Soil Aeration): Good aeration is required in the soil for plant growth and development.

### Dark oxygen

#### Syllabus: GS3/Science and Technology

#### Context

- Scientists have discovered “dark oxygen” being produced in the deep ocean.

#### About

- A study found that oxygen is being produced in complete darkness nearly 4,000 meters below the ocean surface.
- According to the National Oceanic and Atmospheric Administration (NOAA), around half of the Earth's oxygen comes from the ocean.

#### Production of dark oxygen

- The production of oxygen at such depths is thought to be impossible because there isn't enough sunlight for plants to do photosynthesis.
- The study explains that in this case oxygen is not produced by the plants, instead it comes out of metallic “nodules” that are similar in resemblance to lumps of coal.
- They are splitting H<sub>2</sub>O molecules into hydrogen and oxygen.

### Cheyava Falls of Mars

#### Syllabus :GS 3/Space

#### About

- NASA's Perseverance rover found a rock named Cheyava Falls on Mars

## About Cheyava Falls of Mars

- Cheyava Falls measures 3.2 feet by 2 feet (1 metre by 0.6 metres).
- It is named after a waterfall in the Grand Canyon.
- It is situated at the northern edge of Neretva Vallis, an ancient river valley that is 400 metres wide, formed by ancient water flow into Jezero Crater.
- It shows signs of organic material and evidence of past water flow.
- It contains organic compounds, which are the building blocks of life, though these can also form through non-biological processes.
- It has large white veins of calcium phosphate and reddish bands of haematite.
- “leopard spots” were also discovered

### Do you know?

The Perseverance Mars rover is part of NASA's Mars Exploration Program. It is a long-term effort of robotic exploration of the Red Planet. Perseverance is investigating Jezero Crater – a region of Mars where the ancient environment may have been favorable for microbial life – probing the Martian rocks for evidence of past life.

## SC Verdict on Release of GM Mustard

### Syllabus: GS3/Agriculture/Science and Technology

#### Context

- The Supreme Court pronounced a split verdict on the validity of the Centre's 2022 decision granting conditional approval for environmental release of genetically modified (GM) mustard crops.

#### About

- In 2022, the Genetic Engineering Appraisal Committee (GEAC)—a statutory body under the Ministry of Environment, Forest and Climate Change and regulator of genetically modified organisms in the country—recommended the environmental release.
- A subsequent decision was taken approving the environmental release of transgenic mustard hybrid DMH-11, a variety of GM mustard.
- In its recent judgment, the SC asked the Centre to formulate a national policy with regard to GM crops for research, cultivation, trade and commerce in the country.
- The case would now be referred to a three-judge Bench to be constituted by the Chief Justice of India.

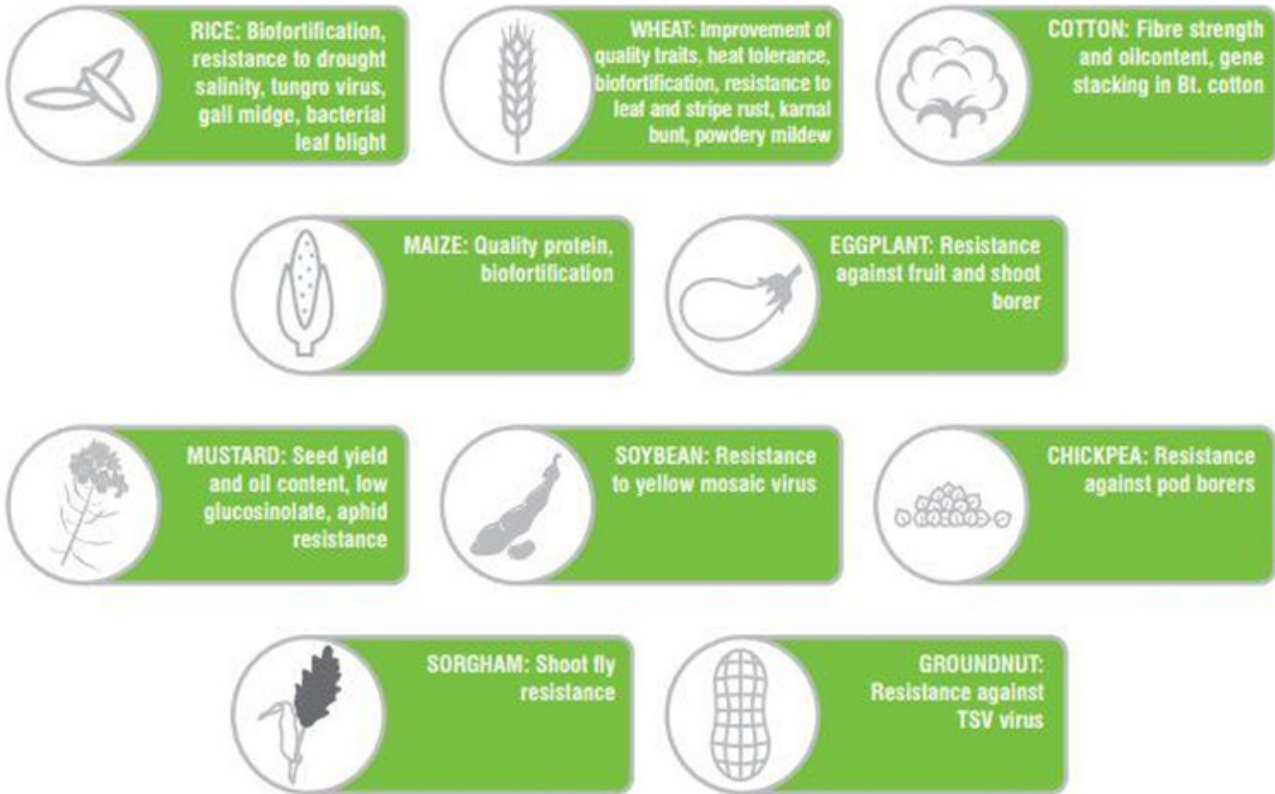
#### What are GM crops?

- Crops that have undergone genetic engineering processes to alter their DNA are referred to as genetically modified crops.
- This alteration is done to introduce desirable traits such as resistance to pests or herbicides, improved nutritional content, or increased yield.
- The process of creating GM crops typically involves: identification of desired traits, isolation of genes, insertion into crop genome, and expression of the trait.
- The techniques used in GM crops are: gene guns, electroporation, microinjection, agrobacterium etc.
- The types of modification are: transgenic, cis-genic, subgenic and multiple trait integration.
- The main trait types in GM crops are herbicide tolerance (HT), insect resistance (IR), Stacked traits etc.

#### Indian Scenario in GM crops

- Bt Cotton: In 2002, the GEAC had allowed the commercial release of Bt cotton.
- Bt cotton has two alien genes from the soil bacterium *Bacillus thuringiensis* (Bt) that allows the crop to develop a protein toxic to the common pest pink bollworm.
- It is the only GM crop that is allowed in India.
- Many varieties of GM crops are under different stages of development, like Bt brinjal and DMH-11 mustard.

## GM crops R&D in India



### Regulatory framework in India

- The Genetic Engineering Appraisal Committee (GEAC): It under the Ministry of Environment, Forest and Climate Change (MoEF&CC), is responsible for the assessment of proposals related to the commercial release of GM crops.
- Acts and rules that regulate GM crops in India are:
- Environment Protection Act, 1986 (EPA)
- Biological Diversity Act, 2002
- Plant Quarantine Order, 2003
- GM policy under Foreign Trade Policy
- Food Safety and Standards Act, 2006
- Drugs and Cosmetics Rule (8th Amendment), 1988.

### Need for GM crops

- Food Security: Genetically modified crops can improve yield, build resistances to pests, flood, frost, drought etc.
- Sustainable food system: Crops can also be modified to reduce carbon emissions and boost the sustainability of food production.
- Higher Productivity: With GM crops it is possible to produce more food from less area and with less chemical pesticides and fertilizer.
- GM crop production uses only about 10% of the land non-GM crop production uses.
- Nutritional Security: Genetic modifications can enhance the nutritional content of crops.
- Meeting Consumer Preferences: GM crops can be tailored to meet consumer preferences, such as crops with longer shelf life, enhanced flavor, or specific cooking qualities.

### Reasons for opposition of GM crops

- Unintended side effects: The long-lasting effect of GM crops is yet to be studied and thus they should not be released commercially.

- Genetic modification can bring changes that can be harmful to humans in the long run.
- Threat to biodiversity: Some crops have been engineered to create their own toxins against pests. This may harm non-targets such as farm animals that ingest them.
- Health risks: GM crops are modified to include antibiotics to kill germs and pests. These antibiotic markers will persist in human body after consumption and will render actual antibiotic medications less effective over a period of time, leading to superbug threats.
- Social and economic issues: There are concerns about multinational agribusiness companies taking over farming from the hands of small farmers.
- Dependence on GM seed companies could prove to be a financial burden for farmers.
- Public concern: People in general are wary of GM crops as they are engineered in a lab and do not occur in Nature.

### Way Forward

- The environmental release of DMH-11 marks the beginning of a new era in self-reliance and sustainability in agriculture. This will help to achieve the target of Zero Hunger by 2030.
- Governments must address the problems brought on by GM crops, particularly in the areas of safety testing, legislation, industrial strategy, and food labeling.

## Air Breathing Propulsion Technology

### Syllabus: GS3/ S&T

#### In News

- The Indian Space Research Organisation (ISRO) successfully completed the second experimental flight demonstrating Air Breathing Propulsion Technology.

#### About Air Breathing Propulsion Technology

- Air Breathing Propulsion Technology utilizes atmospheric oxygen for combustion, eliminating the need to carry oxidizer.
- The absence of an on-board oxidiser in the atmospheric phase significantly reduces the rocket's weight. For example, ISRO's largest rocket, LVM3, carries 555 tonnes of propellant, of which 385 tonnes is oxidiser.
- This technology has the potential to revolutionize space travel by allowing vehicles to use atmospheric oxygen as an oxidizer, potentially reducing the overall weight of the propulsion system and increasing payload capacity.
- Types of Air-Breathing Engines: Ramjet, Scramjet, and Dual Mode Ramjet (DMRJ). Ramjets operate at supersonic speeds, Scramjets at hypersonic speeds, and DMRJs can transition between subsonic and supersonic combustion modes.

## Tinzaparin

### Syllabus :GS 3/Science and Tech

#### In News

- Researchers found tinzaparin significantly reduced damage to human cells due to spitting cobra venom.

#### About Tinzaparin

- Tinzaparin is a type of medication known as a low molecular weight heparin (LMWH).
- It is used to prevent and treat blood clots, particularly deep vein thrombosis (DVT) and pulmonary embolism (PE).
- It works by inhibiting certain clotting factors in the blood, thereby reducing the risk of blood clots forming or worsening.

#### Recent research

- Tinzaparin blocks venom's interaction with cell receptors, preventing damage.
- It mimics heparan sulphate, which the venom targets, thereby reducing toxicity.
- Researchers are planning human clinical trials following promising results.

## Importance

- The study's findings may lead to a breakthrough in snakebite treatment, especially in regions with high snakebite morbidity.
- Tinzaparin, a widely available and inexpensive drug, could revolutionize snakebite treatment.

### Do you know ?

- Red spitting cobra (*Naja pallida*) from Tanzania sprays venom when threatened.
- Venom causes severe damage to cells and the nervous system in humans.
- Encounters with venomous snakes kill about 1.4 lakh people every year, especially in the tropical regions of Africa and Asia.
- Traditional antivenom production from snake venom has limitations.
- It's costly, has side effects, and requires careful handling and storage.

## Quantum Science and Technology

### Syllabus :GS 3/Science and Tech

#### In News

- The United Nations proclaimed 2025 as the International Year of Quantum Science and Technology (IYQ) to raise awareness about quantum science and technology).

#### About

- Quantum science delves into the peculiar and counterintuitive behaviour of particles at the smallest scales.
- Governments and private sectors worldwide are heavily investing in quantum technologies.

#### Applications

- **Quantum Computing:** Quantum computers leverage quantum bits (qubits), which can exist in multiple states simultaneously, enabling computations at speeds exponentially faster than classical computers.
- Applications range from cryptography and materials science to complex simulations and optimization problems.
- **Quantum Sensors:** These devices use quantum principles to achieve unprecedented levels of sensitivity and accuracy.
- Quantum sensors are poised to enhance fields like healthcare (through precise medical imaging), environmental monitoring (for detecting minute changes), and navigation (with ultra-precise positioning systems).
- **Quantum Communications:** Quantum communication utilizes quantum entanglement to secure data transmission.

#### Significance

- According to an estimate computed by consulting firm McKinsey, four sectors — automotives, chemicals, financial services, and life sciences — are expected to gain about \$1.3 trillion in value by 2035 due to quantum S&T.
- Among investments by countries, China leads with \$10 billion in 2022, followed by the European Union and the U.S.
- India's contribution is currently \$730 million (Rs 6,100 crore).
- The value of quantum S&T is in transforming abilities to transmit and make use of information across sectors.

#### Challenges

- The potential benefits of quantum S&T are immense, so too are the challenges.
- Issues like the dual-use nature of quantum technologies, which can both advance and potentially undermine cybersecurity, necessitate careful ethical and regulatory frameworks.
- Lack of case studies on the impact of responsible innovation frameworks in quantum S&T.
- lack of access to talent and technologies



## Related Initiatives

- The World Economic Forum (WEF) was one of the first organisations to discuss quantum computing governance.
- It emphasises principles like transparency, inclusiveness, and accountability.
- It aims to build trust, manage risks, and foster responsible innovation in quantum computing.
- National strategies, e.g., U.S. National Quantum Strategy, prioritize protecting intellectual property and enabling technologies.
- Various frameworks proposed by researchers emphasize responsible research and innovation (RRI) values such as anticipation, reflection, diversity, and public engagement.

## Conclusion and Way Forward

- Looking forward, quantum science and technology will be a key cross-cutting scientific field of the 21st century, having a tremendous impact on critical societal challenges highlighted by the U.N.'s 2030 Sustainable Development Goals, including climate, energy, food safety and security, and clean water
- Continued deliberation and engagement among stakeholders (researchers, governments, private sector) regarding responsible quantum technology development.
- The government must work to safeguard relevant quantum research and development and intellectual property and to protect relevant enabling technologies and materials.

## Regenerative braking and alternative energy recovery methods

### Syllabus :GS 3/Science and Tech /Environment

#### In News

- Recently ,applications of Regenerative braking and alternative energy recovery methods have been highlighted

#### What is braking?

– Braking is the mechanism by which an automotive vehicle in motion slows down.

- A vehicle moving faster has more kinetic energy than a vehicle moving slower, so the process of braking removes (mostly) kinetic energy from the vehicle.
- The law of energy conservation means this removed energy has to go somewhere

#### Regenerative Braking:

- Regenerative braking is a system in electric vehicles that converts kinetic energy from braking into electrical energy, which is stored in batteries or used immediately.
- It involves the electric motor functioning as a generator to capture kinetic energy back into the vehicle's energy system.
- Mechanism : The electric motor in the vehicle reverses its role during braking, turning mechanical energy from the wheels into electrical energy.
- This energy is either stored for later use or fed back into the vehicle's traction system.
- Comparison : Regenerative braking is part of dynamic braking, contrasting with rheostatic braking where excess energy is dissipated as heat.

#### Limitations:

- It is a simple energy recovery mechanism which has some downsides.
- It alone cannot fully halt a vehicle and is supplemented by traditional braking systems that dissipates some of the kinetic energy as heat.
- Efficiency drops at lower speeds, and it does not prevent vehicles from rolling back on inclines.

#### Solutions

- The design of a regenerative brake depends on the energy form to which the mechanical energy from the wheels is to be converted.

- An electric vehicle funnels it into a generator and obtains a current, which is stored in a battery or a supercapacitor.
- Similarly, the mechanical energy can be used to increase the angular momentum of a rotating flywheel.
- Flywheels are especially useful because they can receive energy much faster than other such systems.
- For every unit increase in speed, they also store exponentially more energy.
- The flywheel can be linked to a reciprocating engine to manage or augment its output, like in Formula One racing, or to a gyroscope to help submarines and satellites navigate.
- Recovered kinetic energy can also be fed to a pump that compresses air, which can be useful to start internal combustion engines.

## Jumping Genes and RNA Bridges

### Syllabus: GS3/ Science and Technology

#### Context

- Scientists at the Carnegie Institution found that some genes were able to move around within the genome. These genes were called Jumping genes or transposons.

#### About

- Transposons influence the effects of genes and are called the tools of evolution, for their ability to rearrange the genome and introduce changes.
- More than 45% of the human genome consists of transposable elements.
- They create mutations in genes and lead to diseases.
- However, most of the transposons have themselves inherited mutations and have become inactive, and thus can't move around within the genome.

#### Jumping genes (Transposons)

- The name of the jumping gene is IS110, which stands for Insertion Sequence, and such sequences are found in an array of life-forms, including bacteriophages, bacteria, plants, worms, fruit flies, mosquitos, mice, and humans.
- They roam around the body, cutting and pasting themselves, repairing DNA and modifying it daily.

#### What is Bridge RNA?

- Bridge RNA refers to a type of RNA (Ribonucleic Acid) molecule that plays a crucial role in the process of DNA rearrangement in certain organisms.
- Bridge RNAs act as molecular bridges between different DNA segments during this intricate process of DNA rearrangement.

#### Significance of Jumping genes

- The IS110 bridge recombination system expands the diversity of nucleic-acid-guided systems beyond CRISPR and RNA interference.
- It offers a unified mechanism for the three fundamental DNA rearrangements — insertion, excision and inversion — that are required for genome design.
- DNA insertion is a genetic process in which a segment of DNA is added to a different DNA segment,
- Excision is a mechanism in which a damaged DNA segment is removed, and
- Inversion is a method in which a piece of DNA in a chromosome gets reversed.
- With bridge RNA, researchers can program both the target and the donor sequence of DNA so they can mix and match any two that they want, whereas the guide RNA in CRISPR-Cas9 systems can specify only the target DNA sequence to be cut, not the one to be added in.

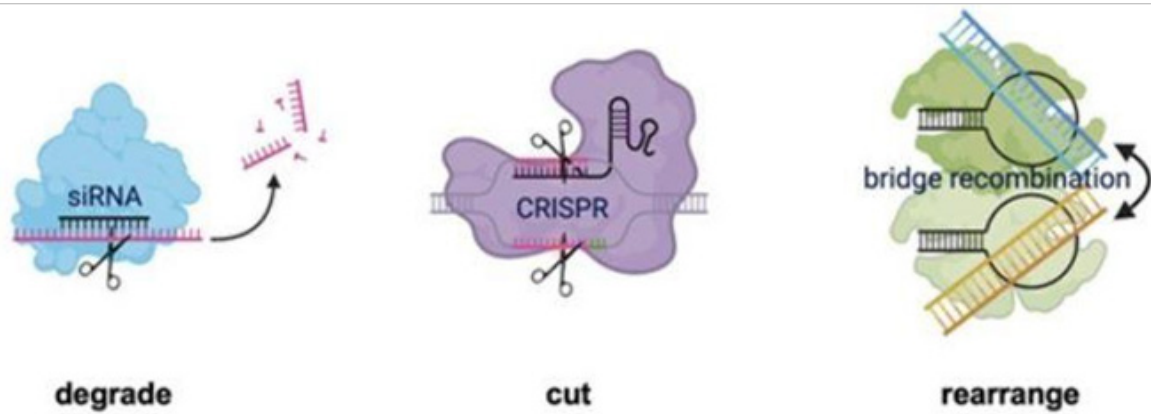
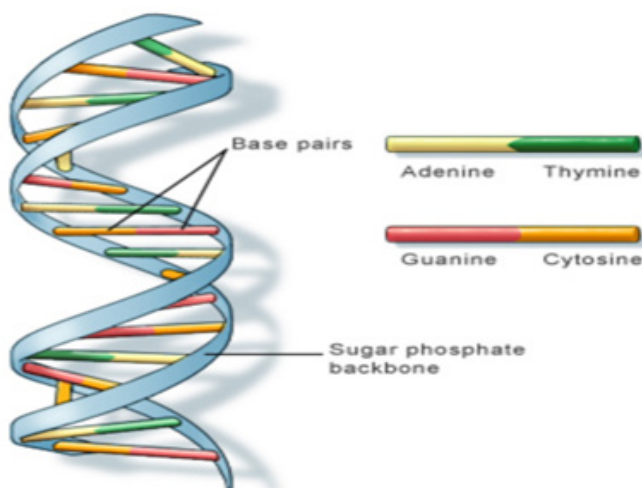


Fig 1. Programmable RNA-guided tools. Three generations of programmable RNA-guided tools—RNAi (left, blue); CRISPR-Cas (middle, purple); and bridge RNAs (right, green)—critical for the new frontier of genome design. [Credit: Durrant, Perry et al.]

### What is DNA (Deoxyribonucleic Acid)?

- DNA,, is the hereditary material in humans. It is made up of four building blocks, or bases.
- These are called adenine, cytosine, guanine and thymine – usually shortened to A, C, G and T.
- A DNA molecule is made up of two long strands of bases that wind around each other into a spiral shape.
  - a. This is called the double helix and looks like a twisted ladder.
- The bases on one strand of the DNA molecule pair with bases on the opposite strand, coming together as a base pair.
  - a. Base pairs are complementary and always pair in the same way: A with T, and C with G.



### World's first brain implant to control epileptic seizures works

Syllabus: GS3/Science and Technology

#### Context

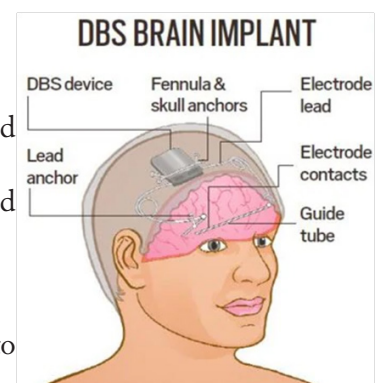
- A UK-based teenager, Oran Knowlson, has become the first person in the world to be fitted with a brain implant to help bring his epileptic seizures under control.

#### Deep brain stimulation (DBS)

- The device uses DBS, which is also utilized for movement disorders associated with Parkinson's, and other neurological conditions.
- The device, which sends electrical signals deep into the brain, has reduced Knowlson's daytime seizures by 80%.

#### How does the device work?

- The neurostimulator delivers constant electrical impulses to the brain to disrupt or block abnormal seizure-causing signals.
- The device was surgically implanted in Knowlson's skull and anchored using screws.



- The device was switched on after Knowlson recovered from his surgery. It can be recharged by a wireless headphone.

### What is Epilepsy?

- Epilepsy, a condition that leads to recurring seizures, sees a person experience jerking of arms and legs, temporary confusion, staring spells, or stiff muscles.
- It is caused by abnormal electrical activity in the brain.
- Cause: The disease has no identifiable cause in nearly 50% of the cases. However, head trauma, tumors in the brain, some infections like meningitis, or even genetics can lead to epilepsy.
- Impact: It can increase the risk of accidents, drownings, and falling.

### Prevalence

- Around 50 million people worldwide have epilepsy and nearly 80% of people with epilepsy live in low- and middle-income countries.
- According to a Lancet study, 2022, In India, between 3 and 11.9 per 1,000 people suffer from epilepsy.

### WHO Response

- The first global report on epilepsy produced in 2019 by WHO, Epilepsy: A public health imperative, highlighted the available evidence on the burden of epilepsy and the public health response required.
- The 75th World Health Assembly adopted the Intersectoral global action plan on epilepsy and other neurological disorders 2022–2031, which recognizes the shared preventive, pharmacological and psychosocial approaches between epilepsy and other neurological disorders.

### Li-Fi Technology

#### Syllabus: GS3/Science and Technology

#### Context

- Recently, the Ministry of Defence, under the Innovations for Defence Excellence (iDEX) initiative, granted the Li-Fi Technology to address the Indian Navy's communication challenges.

#### About Light Fidelity (Li-Fi) Technology

- It is a wireless communication technology that uses visible light to transmit data.
- Unlike traditional radio frequency-based Wi-Fi, which relies on radio waves, Li-Fi leverages Light-emitting Diodes (LEDs) to create a high-speed, secure, and energy-efficient communication channel.

#### Working

- LEDs as Data Transmitters: Li-Fi uses LEDs (such as those used for lighting) to transmit data. These LEDs can be modulated at high speeds to encode information.
- When an electrical signal is applied to an LED, it emits light. By varying the intensity of the light rapidly, data can be transmitted.
- Photodetectors as Receivers: Devices equipped with photodetectors (such as smartphones, laptops, or IoT devices) receive the modulated light signals.
- The photodetectors convert the received light into electrical signals, which are then processed as data.

#### Advantages

- High Speed: Li-Fi can achieve data rates of several gigabits per second (Gbps), surpassing traditional Wi-Fi.
- Security: Since Li-Fi operates within the visible light spectrum, it does not penetrate walls, making it inherently secure against eavesdropping.
- No Interference: Li-Fi does not interfere with radio frequencies used by Wi-Fi or cellular networks.
- Energy Efficiency: LEDs are energy-efficient, contributing to overall energy savings.

#### Challenges and Considerations

- Line of Sight: Li-Fi requires a direct line of sight between the transmitter (LED) and receiver (photodetector).
- Indoor Use: Li-Fi is ideal for indoor environments, such as offices, hospitals, and smart homes.
- Integration: Integrating Li-Fi with existing infrastructure and devices remains a challenge.

#### Applications

- Internet Connectivity and Indoor Communication: Li-Fi can provide high-speed internet access in offices, homes, and public spaces.
- Secure Environments: Military bases, hospitals, and data centres benefit from Li-Fi's security features.
- Underwater Communication: Li-Fi can be used for underwater communication, where RF signals are ineffective.

# Chapter- 6

## INTERNATIONAL RELATION

### Nine Dash Line

#### Syllabus: GS2/International Relations

#### Context

- China's claim over almost the entire South China Sea through the nine-dash line has been at the source of conflict with other island nations in the region.

### Nine Dash Line

- A nine-dash line is a disputed boundary claimed by China in the South China Sea. The line is composed of nine dashes, which were first drawn on a 1947 Chinese map.
- The line is claimed to coincide with China's historical maritime claims, but its precise definition and extent are unclear.
- The line is surrounded by several countries, including the Philippines, Vietnam, Malaysia, and Taiwan, which reject China's claims and assert their own territorial rights over the disputed waters.
- The line has been a major source of tension and conflict in the region.

### BIMSTEC Foreign Ministers' Retreat

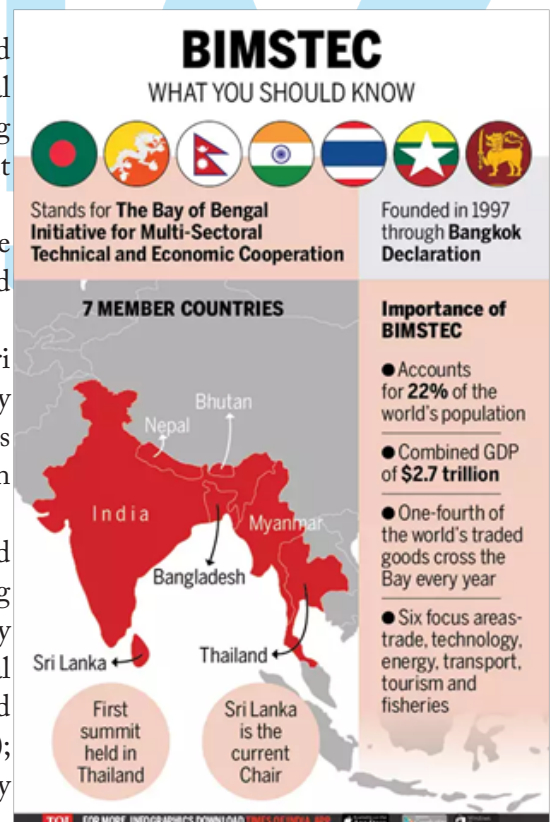
#### Syllabus: GS2/ International Bodies

#### Context

- Recently, India hosted the first BIMSTEC Foreign Ministers' Retreat held in New Delhi, carrying particular weight given the major developments unfolding in neighbouring Myanmar.

### About the BIMSTEC

- The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a multilateral regional organisation that was established with the aim of accelerating shared growth and cooperation between littoral and adjacent countries in the Bay of Bengal region.
- It was founded as BIST-EC, in 1997, with the adoption of the Bangkok Declaration, with Bangladesh, India, Sri Lanka and Thailand as members.
- It became BIMST-EC (Bangladesh, India, Myanmar, Sri Lanka and Thailand Economic Cooperation) with the entry of Myanmar in late 1997, and eventually, it was named in its current form, when Nepal and Bhutan became members in 2004.
- It focuses on Trade & Investment (facilitating commerce and economic ties); Transport & Communication (enhancing connectivity across borders); Energy (collaborating on energy security and sustainability); Tourism (promoting cultural exchange and tourism); Technology (sharing knowledge and innovation); Fisheries & Agriculture (ensuring food security); Public Health (addressing health challenges together); Poverty Alleviation (lifting communities out of poverty); Counter-Terrorism & Transnational Crime (strengthening security); Environment & Disaster Management and Climate Change (protecting our planet); People-to-People Contact; and Cultural Cooperation.



## BIMSTEC's Regional Challenges

- India emphasised that the seven-member BIMSTEC should seek solutions to regional challenges from within the organisation itself, and highlighted that BIMSTEC's complementary and congenial membership should aspire to higher goals.
- The organisation faces long standing goals such as capacity building and economic cooperation, which have now acquired renewed urgency.

## Myanmar's Instability and Regional Instability

- The ongoing crisis in Myanmar poses significant challenges for BIMSTEC. Instability in Myanmar has raised questions about developmental and connectivity projects aimed at strengthening ties among member countries.
- The military Junta in Myanmar recently lost control of Naungcho, a major town along a trade highway to China in the northern Shan State. This development directly affects connectivity and trade routes in the region.
- BIMSTEC's discussions focused on crucial connectivity projects and border stability, while maintaining the cautious stance regarding the Myanmar crisis.

## Other Challenges and Related Solutions

- **Sluggish Progress and Efficiency:** One of the major challenges BIMSTEC encounters is the perceived lack of efficiency and slow progress. Critics often highlight that the organisation hasn't moved as swiftly as desired in achieving its objectives.
- The inconsistency in policy-making and implementation across member countries contributes to this sluggishness. Harmonising diverse national interests and priorities can be quite the jigsaw puzzle.
- **Political Commitment:** BIMSTEC's advancement is hindered by varying levels of political commitment from member countries' leaders. Larger nations sometimes fail to consistently demonstrate strong dedication to driving the organisation's agenda forward.
- Simultaneously, smaller countries may not always prioritise BIMSTEC on their own national agendas, leading to uneven commitment levels.
- **Resource Constraints and Capacity Building:** BIMSTEC operates with limited resources, which affects its ability to implement projects effectively. Enhancing institutional capacity and resource allocation is crucial.
- Strengthening technical expertise, promoting research, and building human capital within the organisation are essential steps.
- **Connectivity and Infrastructure Gaps:** Despite being a regional grouping, BIMSTEC faces challenges related to physical connectivity. Improving transport links, energy grids, and digital infrastructure remains a priority.
- Bridging gaps in connectivity will enhance trade, investment, and people-to-people exchanges.
- **Harmonising Diverse Interests:** BIMSTEC comprises countries with varying economic sizes, political systems, and development levels. Balancing these diverse interests while pursuing common goals requires adept diplomacy.
- Finding consensus on issues like trade facilitation, counterterrorism, and disaster management can be intricate.

## Conclusion

- The BIMSTEC Foreign Ministers' retreat provided an opportunity for member countries to address regional challenges, especially in light of Myanmar's ongoing crisis. As the organisation seeks solutions, it remains crucial to balance economic cooperation, stability, and humanitarian concerns.

## Forum for India-Pacific Islands Cooperation (FIPIC) Partnership

### Syllabus: GS2/International Organisation

#### Context

- Recently, India sent humanitarian aid to landslide-hit Papua New Guinea, showcasing FIPIC partnership.

## About the Forum for India-Pacific Islands Cooperation (FIPIC)

- FIPIC includes 14 of the island countries – Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.
- Though these countries are relatively small in land area and distant from India, many have large exclusive economic zones (EEZs), and offer promising possibilities for fruitful cooperation.
- It is a testament to India's strategic engagement with the Pacific Island countries, scattered across the vast expanse of the Pacific Ocean. They hold immense significance from both an economic and geostrategic standpoint.
- The Prime Minister of India, in 2014, convened the inaugural FIPIC gathering in Fiji, which marked a pivotal moment in India's Act East Policy — a vision that extends beyond the Asian continent to embrace the Indo-Pacific region.
- India unveiled the 12-Step Initiative at the third FIPIC Summit, held in Papua New Guinea, which includes:
  - FIPIC SME Development Project: Supporting small and medium-sized enterprises in the region.
  - Solar Projects for Government Buildings: Harnessing renewable energy.
  - Desalination Units for Drinking Water: Addressing water scarcity.
  - Supply of Sea Ambulances: Enhancing healthcare access.
  - 24×7 Emergency Helpline: Strengthening emergency response.
  - Jan Aushadi Kendras: Affordable healthcare solutions.
  - Yoga Centres: Promoting holistic well-being.
  - Beyond Infrastructure: Education, Health, and Culture
- India's development partnership with Pacific Island Countries (PICs) extends beyond infrastructure. Education, health, and culture are key areas of focus.
- Advocacy for India's UN Security Council Seat: Support for India's bid for a permanent seat in the United Nations Security Council has been high on the FIPIC agenda.

## 22nd India-Russia Annual Summit

### Syllabus: GS2/International Relations

#### Context

- Prime Minister Modi paid an official visit to Russia for the 22nd India-Russia Annual Summit.

#### Key Highlights

- PM Modi was conferred Russia's highest national award "The Order of St. Andrew the Apostle" for his contribution to fostering India-Russia ties.
- The award was announced in 2019.
- India will set up two new consulates in the Russian cities of Kazan and Yekaterinburg.
- Russia agreed to India's demand to ensure early release and return to home of the Indian nationals working in the Russian military as support staff.
- India and Russia are working on the Eastern Maritime Corridor and the two countries were discovering each other through the Ganga-Volga dialogue.
- The Eastern Maritime Corridor is a proposed sea route between Chennai, India, and Vladivostok, Russia, passing through the Sea of Japan, the South China Sea, and the Malacca Strait.
- Both the Leaders agreed to set the bilateral trade target of USD 100 billion by 2030.

## India- Russia Relations

- Political Relations: A watershed moment in relations between India and the Soviet Union was the signing of the Treaty of Peace and Friendship in 1971.
- After the dissolution of the Soviet Union, India and Russia entered into a new Treaty of Friendship and Cooperation in 1993.
- In 2000, during the visit of President Putin to India, the partnership acquired a new qualitative character, that of a Strategic Partnership.
- In 2010 the relationship was elevated to the status of a Special and Privileged Strategic Partnership.

- Defense and Security Cooperation: BrahMos Missile System as well as the licensed production in India of SU-30 aircraft and T-90 tanks are examples of such flagship cooperation.
- Both sides concluded agreements on the supply of S-400 air defense systems, construction of frigates under Project 1135.6 and shareholders agreement on the formation of a joint venture to manufacture Ka-226T helicopters in India.
- The two countries also hold exchanges and training exercises between their armed forces annually termed INDRA.
- Trade and Economic Relations: Both sides revised targets of increasing bilateral investment to US \$50 billion and bilateral trade to US \$30 billion by 2025. However, bilateral trade reached an all-time high of \$65.70 billion in FY 2023-24.
- Since the beginning of the war in Ukraine, India has been buying large amounts of Russian oil at a discount to cushion the inflationary impact of rising crude prices.
- Intergovernmental Commissions: There is regular high-level interaction between the two countries.
- The IRIGC (India-Russia Intergovernmental Commission): It is the main body that conducts affairs at the governmental level between both countries. Both countries are members of international bodies including the UN, BRICS, G20 and SCO.
- Two Inter-Governmental Commissions: One on Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC), co-chaired by EAM and the Russian DPM, and
- Another on Military-Technical Cooperation (IRIGC- MTC) co-chaired by Russian and Indian Defence Ministers, meet annually.
- Nuclear Energy: Russia recognizes India as a country with advanced nuclear technology with an impeccable non-proliferation record.
- Kudankulam Nuclear Power Plant (KKNPP) is being built in India with Russian cooperation.

### Way Ahead

- Over the years, as India has diversified its relationships in a multi-polar world, the India-Russia relationship has stagnated in some areas and atrophied in others.
- To further strengthen the relationship between Both the nations there is need for;
- Providing a new basis for the existing defense cooperation;
- The opportunity for Indian business conglomerates to explore the economic viability of the Siberian and Far East Region of Russia;
- Strengthening geo-economic connectivity projects;
- Enhancing technological cooperation between India and Russia.

### India-Russia Strategic Relationship

#### Syllabus: GS2/International Relations

#### Context

- Prime Minister Modi is on a two-day visit to Russia.

#### Key Highlights

- India and Russia are working on the Eastern Maritime Corridor and the two countries were discovering each other through the Ganga-Volga dialogue.
- The Eastern Maritime Corridor is a proposed sea route between Chennai, India, and Vladivostok, Russia, passing through the Sea of Japan, the South China Sea, and the Malacca Strait.
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### India-France Partnership in Green Growth

Syllabus: GS3/ International Relations

#### Context

- The President of France and Prime Minister of India elevated the 'Partnership for the Planet' as one of the three pillars of the Indo-French Horizon 2047 Roadmap in 2023.

#### Background

- The year 2023 marked 25 years of India-France Strategic Partnership.
- Pillars of Indo-French Horizon 2047;
- Partnership for security and sovereignty
- Partnership for the planet
- Partnership for the people

#### Partnership for Environment Sustainability

- Four environment protection projects were signed between India and France in 2023.
- The First project is in Rajasthan for increasing forest cover, creating better conditions for wildlife to live and reproduce, while sustaining livelihoods of local communities.
- The second project aims at improving sanitation in the small towns of Himachal Pradesh.

- The third project seeks to improve solid waste management in 18 cities as part of CITIIS, India's flagship circular economy programme.
- The fourth is a green credit line with the State Bank of India was disbursed for electric buses and energy-efficient housing.

### Major Highlights of India and France Relations

- Strategic Partnership: After India's 1998 nuclear tests, France was the first country to initiate a Strategic Dialogue with India.
- By displaying a greater understanding of India's security compulsions as compared to other countries, France refused to impose bilateral sanctions on India.
- France was the first western country India signed a strategic partnership with.
- Economic: Trade relations have witnessed steady growth, with bilateral trade reaching \$13.4 Bn in 2022-23.
- France is one of the largest investors in India with FDI inflow of US\$ 659.77 million for FY 2022-23.
- For FY 2023-24, Indian exports to France totaled \$3.06 billion and imports from France totaled \$2.36 billion.
- Defense: Bilateral defense cooperation between the two sides is reviewed under Annual Defence Dialogue (Defence Minister level) and High Committee on Defence Cooperation (Secretary level).
- P-75 Scorpene Deal 2005: An agreement for building six Scorpène submarines under technology transfer at Mazagaon Docks Ltd. in India with French help.
- The procurement of Rafale jets as part of India's air power is a testament to the deep defense ties.
- Joint defense exercises between the Air forces (Garuda series) and the Armies (Shakti), Navies (Varuna) are conducted regularly.
- Space: There's a rich history of cooperation in the field of space for over 50 years between ISRO and the French Space Agency, Centre National D'Etudes Spatiales (CNES).
- France remains a major supplier of components and equipment for the Indian space programme.
- Energy Cooperation: In 2023, both leaders welcomed the progress made during discussions related to the Jaitapur Nuclear Power Project (JNPP). However, the progress here has been slow, though the first pact was agreed in 2008.
- The two sides have also agreed to establish a partnership on Small Modular Reactors (SMR) and Advanced Modular Reactors (AMR).
- The International Solar Alliance was launched jointly by India and France.
- Education: It is estimated that there are about 10,000 Indian students in France. An agreement on mutual recognition of degrees was signed in 2018.
- In 2023, it was agreed to increase the number of Indian students in France to 30,000 by 2030.
- Community in France: Mainland France has an estimated 1,19,000 Indian community (including NRIs) members, largely originating from erstwhile French colonies of Puducherry, Karaikal, Yanam, Mahe and Chandernagore and the States of Tamil Nadu, Gujarat and Punjab.
- Tourism: About 2.5 lakh French traveled to India in 2019 while about 7 lakh Indians went to France for tourism.
- Rajasthan continues to lead among all Indian destinations for French tourists.
- Support on international fora: France has continued to support India's claim for permanent membership of the United Nations Security Council and the reforms of the United Nations.
- France's support was vital in India's accession to the Missile Technology Control Regime (MTCR), Wassenaar Arrangement (WA) and Australia Group (AG). France continues to support India's bid for accession to the Nuclear Suppliers Group (NSG).
- India and France have resolved to work together for adoption of the Comprehensive Convention on International Terrorism (CCIT) in the UN.



## Colombo Process

Syllabus :GS 2/IR

### In News

- India chaired its first meeting as Chair of the Colombo Process at the Permanent Representative Level Meeting in Geneva

### About Colombo Process

- It is a Regional Consultative Process comprising 12 Member States from Asia, which primarily serve as countries of origin for migrant workers.
- It provides an important platform for consultations on the management of overseas employment and contractual labour.
- It is non-binding and decision-making is by consensus.
- It is coordinated through Permanent Missions of Member States at the UN in Geneva.'
- India has been a member of Colombo Process since its inception in 2003.
- In May 2024, India assumed the chair of the Colombo Process for the first time since its inception.

### India's priorities for Colombo Process (2024-26)

- It includes
- Reviewing the financial sustainability of the Colombo Process,
- Broadening the membership by including new member states and observers
- Reconfiguring technical-level collaborations
- Implementing a structured rotation for the chairmanship
- Conducting a regional review of the Global Compact for Safe, Orderly, and Regular Migration (GCM)
- Engaging in dialogues with the Abu Dhabi Dialogue (ADD) and other regional processes.

## Birth Anniversary of Lokmanya Tilak

Syllabus: GS1/History

### Context

- PM Narendra Modi has paid tributes to Lokmanya Tilak on his birth anniversary.

### Early Life

- Birth: Born on July 23, 1856, in Maharashtra's Ratnagiri.
- He was a freedom fighter, social thinker, philosopher, teacher, one of the first and strongest advocates of Swaraj ("self-rule") who had played an important role in India's freedom movement.
- He organized two important festivals, Ganeshotsav in 1893 and Shiv Jayanti in 1895.

### Political career

- In 1890, Tilak joined the Indian National Congress.
- Tilak opposed the moderate views of Gopal Krishna Gokhale, and was supported by fellow Indian nationalists Bipin Chandra Pal in Bengal and Lala Lajpat Rai in Punjab. They were referred to as the "Lal-Bal-Pal".
- The trio also mobilized Indians against the Bengal partition and proposed the Swadeshi movement and boycott of foreign goods.
- Imprisonment: Tilak was arrested by the British on the charges of sedition in 1908 and sentenced to six years of imprisonment in Mandalay (Burma).
- Home Rule Movement: After returning from Burma, Tilak was involved in the Home Rule Movement.
- In 1916, he concluded the Lucknow Pact with Mohammed Ali Jinnah, which provided for Hindu-Muslim unity in the nationalist struggle.

### Literary Work

- He launched two weeklies, Kesari (in Marathi) and Mahratta (in English), which criticized British policies of the time.
- He published The Orion or Researches into the Antiquity of the Vedas (1893) and The Arctic Home in the Vedas (1903).
- In the Mandalay jail, he wrote the Srimad Bhagavadgita Rahasya (Secret of the Bhagavadgita), an original exposition of the most sacred book of the Hindus.

## Moidams

Syllabus :GS 1/History

### In News

- India is hosting the World Heritage Committee Meeting for the first time and it will examine India's Moidams

### About Moidams

- The Moidams are the burial mounds of the Ahom kings, Queens and Nobles.
- The word Moidam is derived from the Tai word Phrang-Mai-Dam or Mai-Tam.
- Phrang-Mai means to put into the grave or to bury and Dam means the spirit of the Dead.
- Moidams are found in all the districts of upper Assam



- Structure : It consists of three major features, a vault of Chamber, a hemispherical earthen mound covering the chamber with a brick structure (Chaw-chali) for annual offering over it and an octagonal boundary wall around the base of the mound having an arched gateway on its west.
- History :The Tai-Ahom people believed their kings were divine, leading to the establishment of a unique funerary tradition: the construction of Moidams, or vaulted mounds, for royal burials.
- Traditionally and culturally the Ahoms are members of the Great Tai (Tai-Yai) group of peoples.
- Comparisons with Similar Properties: The Moidams of Choraideo can be compared to royal tombs in ancient China and the pyramids of Egyptian pharaohs, illustrating universal themes of honoring and preserving royal lineage through monumental architecture

### Do you know ?

- The World Heritage Committee meets annually and is responsible for managing all matters on World Heritage and deciding on sites to be inscribed on the World Heritage list.
- The 46th session of the World Heritage Committee in 2024 will examine 27 nominations from around the world, including 19 Cultural, 4 Natural, 2 Mixed sites and 2 Significant modifications to the boundaries

## Letter of Intent between AIM and WIPO

### Syllabus: GS2/Education

#### Context

- A Joint Letter of Intent was signed between Atal Innovation Mission (AIM) and World Intellectual Property Organization (WIPO).

#### Scope of the Indo-WIPO Joint Program

- Taking the key AIM programs (ATL, AIC models) to the nations of the global south and those in transition; this would include structuring country-specific programs basis, as the country needs.
- Enhancing the understanding of Intellectual Property Rights (IPR) among various stakeholders, particularly students, teachers, innovators and entrepreneurs of India.

### Atal Innovation Mission (AIM)

- AIM was set up by NITI Aayog in 2016 to promote a culture of innovation and entrepreneurship in India.
- Its objective is to serve as a platform for promoting world-class innovation hubs, grand challenges, start-up businesses, and other self-employment activities, particularly in technology-driven areas. AIM has created four programs to support these functions:
  - a. Atal Tinkering Labs
  - b. Atal Incubation Centers
  - c. Atal New India Challenges and Atal Grand Challenges
  - d. Mentor India.

### World Intellectual Property Organization (WIPO)

- It is a self-funding agency of the United Nations, that serves the world's innovators and creators, ensuring that their ideas travel safely to the market and improve lives everywhere.
- Members: The organization has 193 member states including both developing and developed nations like India, Italy, Israel, Austria, Bhutan, Brazil, China, Cuba, Egypt, Pakistan, the U.S. and the U.K.
- Headquarters: Geneva, Switzerland

## Ex Khaan Quest 2024

### Syllabus: GS3/ Defence

#### Context

- Indian Army contingent departed for the Multinational Military Exercise 'Khaan Quest' at Ulaanbaatar, Mongolia.

#### About

- The exercise first started as a bilateral event between USA and Mongolian Armed Forces in the year 2003.
- Subsequently, from the year 2006 onwards the exercise graduated to a Multinational Peacekeeping Exercise with the current year being the 21st iteration.

- Exercise KHAAN QUEST will enable the participating countries to share their best practices in Tactics, Techniques and Procedures for conduct of joint operations.
- The exercise will also facilitate developing inter-operability, bonhomie and camaraderie between soldiers of the participating countries.

## 14th BRICS Trade Ministers' Meeting

Syllabus: GS2/Global Grouping; International Relation

### Context

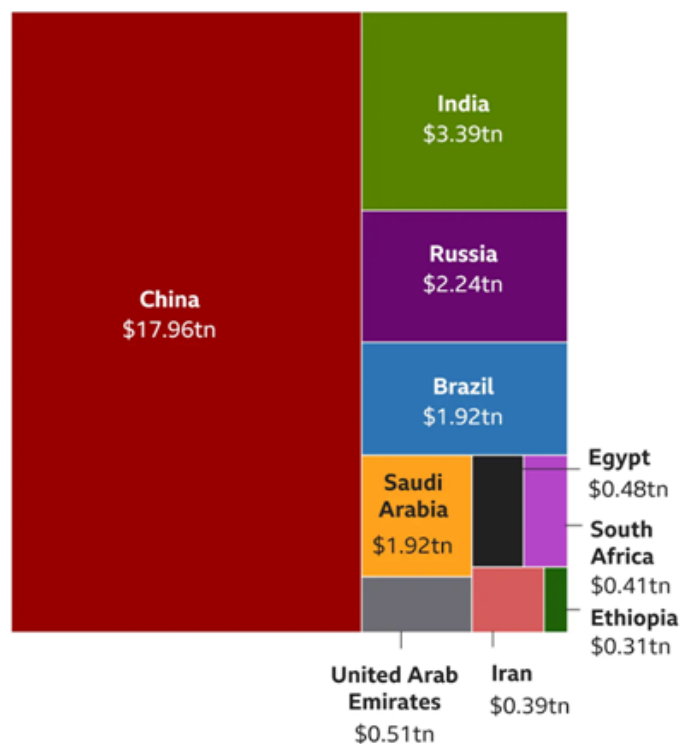
- Recently, the Commerce Secretary of India has attended the 14th BRICS Trade Ministers' Meeting held under the BRICS Presidency of the Russian Federation.
- Theme for this year's BRICS engagement titled as 'Strengthening Multilateralism for Just Global Development'.

### Background: About BRICS

- It is an acronym that refers to a group of five major emerging national economies: Brazil, Russia, India, China, and South Africa.
- It started after the meeting of the Leaders of Russia, India and China in St. Petersburg on the margins of the G8 Outreach Summit in 2006, as a formal grouping, and was formalised during the 1st meeting of BRIC Foreign Ministers on the margins of UNGA in New York in 2006.
- Initially, the grouping was termed BRIC as South Africa was inducted in 2010 and from there on it has been referred to as BRICS.
- The governments of the BRICS states have met annually at formal summits since 2009.
- Over a period of time, BRICS countries have come together to deliberate on important issues under the three pillars of political and security, economic and financial and cultural and people-to-people exchanges.
- It brings together five of the largest developing countries of the world, representing around 41% of the global population, around 24% of the global GDP and around 16% of global trade.

### Brics countries and their GDPs

GDP in trillions of US dollars



Source: World Bank/OECD

BBC

### Importance BRICS

- Economic Cooperation: BRICS facilitates economic collaboration through initiatives such as the New Development Bank (NDB), aimed at funding infrastructure projects in member countries.
- Economic collaboration within BRICS facilitates trade diversification, technology transfer, and infrastructure development, which are crucial for India's economic growth and development aspirations.
- Global Governance Reform: India uses BRICS as a platform to advocate for reforms in international financial institutions like the IMF and World Bank, aiming to increase the voice and representation of emerging economies in global economic governance.
- Cultural and Academic Exchange: BRICS fosters cultural and academic exchanges, promoting people-to-people ties and enhancing mutual understanding among member countries.

### Expansion of BRICS

- It was done as per the decision adopted by the 15th BRICS Summit in 2022. Argentina, Ethiopia, Egypt, Iran, Saudi Arabia, and the UAE are the six new additions to the BRICS.

- Significance of Expansion of BRICS likely to focus on the strengthening of the group with the inclusion of countries from the Middle East and the Representative of Developing Countries and strengthening the Voice for Global Governance.

### Recent Trade Ministers' Meeting Focus Areas

- WTO Development Aspect: The Commerce Secretary emphasised the need to strengthen the multilateral trading system with the World Trade Organization (WTO) at its core, including addressing long-pending issues related to development and special and differential treatment.
- Global Value Chains (GVCs): Effective functioning of joint value chains was discussed, recognizing their critical role in international trade.
- MSMEs and Digitalisation: Interaction among Micro, Small, and Medium Enterprises (MSMEs) was highlighted, along with India's success story in digitalization and e-commerce.
- Special Economic Zones (SEZs): Cooperation among SEZs was deemed relevant for fostering economic growth.

### Multilateralism and Urgent Reforms

- Permanent Solution to Public Stock Holding: Addressing food security concerns.
- Two-Tier Dispute Settlement System: Enhancing the effectiveness of dispute resolution.
- WTO Reform: Making the organisation more responsive to the needs of emerging economies.
- '30 for 30' Initiative: Proposing at least 30 operational improvements to the WTO by its 30th anniversary in 2025.
- Resilient Supply Chains: Decentralisation and diversification were advocated to enhance supply chain resilience.
- Paperless Trade: The Commerce Secretary emphasised digitalization of trade documents, such as the Bill of Lading.
- Affordable Emerging Technologies: Collaboration for green transition and climate resilience was highlighted.
- Climate-Related Measures and MSMEs: Concerns were raised about climate-related unilateral measures impacting trade.
- Such measures were seen as conflicting with Multilateral Environmental Agreements and ignoring the principle of Common But Differentiated Responsibilities (CBDR).
- The importance of MSMEs in global value chains was reiterated.

### Conclusion

- The 14th BRICS Trade Ministers' Meeting provided a platform for dialogue on critical trade-related issues, emphasising cooperation, inclusiveness, and the pursuit of just global development.
- As we continue to navigate the complexities of international trade, BRICS remains committed to strengthening multilateralism and fostering equitable growth.

## India- Saudi Arabia: First Meeting of the High-Level Task Force on Investments

### Syllabus :GS 2/IR

#### In News

- The inaugural meeting of the India-Saudi Arabia High Level Task Force on Investments was held virtually.

#### Key Outcomes

- The meeting reviewed prior discussions by the technical teams of the Task Force.
- Constructive discussions took place on bilateral investment opportunities in sectors including refining and petrochemical plants, new and renewable energy, power, telecom, and innovation.
- The Principal Secretary to the PM affirmed India's commitment to support Saudi investments worth US\$ 100 billion.

## National Metallurgist Awards -2024

### Syllabus: Miscellaneous

#### Context

- The Ministry of Steel, Government of India has conferred National Metallurgist Awards.

#### About

- It recognizes the contributions in the metallurgical field, covering Operations, Research & Development, Waste Management and Energy Conservation.
- Applications are invited from Individuals from Industry, Research & Academia.
- The Awards are given in the following four categories:-
- Lifetime Achievement Award
- National Metallurgist Award
- Young Metallurgist Award
- Environment
- Metal Science
- Award for R&D in Iron & Steel Sector.

## Insolvency & Bankruptcy Code (IBC) in India

### Syllabus: GS3/Economy

#### Context

- The Finance Minister has proposed to set up an integrated technology platform to improve the outcomes under the Insolvency & Bankruptcy Code (IBC).

#### About

- The Union Minister also proposed the establishment of additional tribunals out of which, some will be notified to decide cases exclusively under the Companies Act.
- It is also proposed that steps for reforming and strengthening debt recovery tribunals be taken and additional tribunals be established to speed up the recovery.

#### Insolvency

- In a growing economy like India, a healthy credit flow and generation of new capital are essential.
- When a company or business turns insolvent or “sick”, it begins to default on its loans.
- In order for credit to not get stuck in the system or turn into bad loans, it is important that banks or creditors are able to recover as much as possible from the defaulter and as quickly as they can.
- The business can either get a chance, if still viable, to start afresh with new owners, or its assets can be liquidated or sold off in a timely manner.
- This way fresh credit can be pumped into the system and the value degeneration of assets can be minimised.

#### Need for the IBC

- In 2016, India's Non-Performing Assets and debt defaults were piling up, and older loan recovery mechanisms such as the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI), Lok Adalats, and Debt Recovery Tribunals were seen to be performing badly, the Insolvency and Bankruptcy Code (IBC) code was introduced.
- It was introduced to overhaul the corporate distress resolution regime in and consolidate previously available laws to create a time-bound mechanism.
- When insolvency is triggered under the IBC, there can be two outcomes: resolution or liquidation; all attempts are made to resolve the insolvency by either coming up with a restructuring or new ownership plan and if resolution attempts fail, the company's assets are liquidated.

#### Insolvency and Bankruptcy Code (IBC)

- Objective: The primary objective of the IBC is to promote entrepreneurship, availability of credit, and balance the interests of all stakeholders by providing for a time-bound process to resolve insolvency.



- **Applicability:** The IBC applies to companies, limited liability partnerships (LLPs), partnership firms, and individuals. It provides a framework for both corporate and personal insolvency.
- **Modus Operandi:** When a corporate debtor (CD), or a company defaults on its loan repayment, either the creditor or the debtor can apply for the initiation of a Corporate Insolvency Resolution Process (CIRP) under Section 6 of the IBC.
- The minimum amount of default is 1 crore.
- To apply for insolvency, one has to approach a stipulated adjudicating authority (AA) under the IBC— the various benches of the National Company Law Tribunal (NCLT) across India are the designated AAs.
- **Insolvency Resolution Process (IRP):** The IBC provides for a structured insolvency resolution process overseen by licensed insolvency professionals (IPs).
- **Adjudicating Authority:** The National Company Law Tribunal (NCLT) is the adjudicating authority for corporate insolvency resolution processes (CIRP) for companies and LLPs.
- For individuals and partnership firms, the Debt Recovery Tribunal (DRT) handles the process.
- **Insolvency Professionals:** IPs are licensed professionals who play a crucial role in managing the insolvency resolution process.
- They act as intermediaries between the debtor and creditors and manage the affairs of the debtor during the insolvency process.
- **Time-bound Process:** The IBC mandates strict timelines for various processes involved in insolvency resolution to ensure timely resolution and prevent undue delays.
- **Liquidation:** If a resolution plan is not approved or implemented within the specified time frame, the corporate debtor may be liquidated to distribute the proceeds to creditors.
- **Cross-border Insolvency:** The IBC provides a framework for dealing with cross-border insolvency through cooperation and reciprocal arrangements with other countries.

### Challenges

- **Operational Delays:** The strict timelines prescribed by the IBC are often difficult to adhere to due to various reasons such as legal complexities, coordination among stakeholders, and judicial backlog.
- **Lack of Infrastructure:** There has been a lack of adequate infrastructure, including sufficient number of insolvency professionals (IPs) and trained personnel, to handle the increasing number of insolvency cases effectively.
- **Haircuts and Creditor Recovery:** The IBC aims to maximize the value of assets for creditors, but in practice, creditors often face significant haircuts (losses) during the resolution process.

### Way Ahead

- In order to address the delays, the Parliamentary Standing Committee suggested that the NCLT should not take more than 30 days after filing, to admit the insolvency application and transfer control of the company to a resolution process.
- Citing the more than 50% vacancy in the Tribunal compared to the sanctioned strength, it suggested recruitment in advance based on the projected number of cases.
- The IBC has undergone amendments since its enactment to address practical challenges and issues that have emerged.
- However, continuous policy reforms and amendments are essential to adapt to evolving economic and legal landscapes.

### Chandra Shekhar Azad

#### Syllabus :GS 1/History

#### In News

- The Prime Minister, Shri Narendra Modi has paid tributes to Chandra Shekhar Azad on his birth anniversary.

#### About Chandra Shekhar Azad

- Chandra Shekhar Tiwari, popularly known as Chandra Shekhar Azad, was born on 23 July 1906.'

- Entry into Politics: He joined the Non-Cooperation Movement at 15 years old in 1921.
- Arrested in December 1921 and displayed defiance by declaring his name as “Azad,” his father’s name as “Swatantrata,” and residence as “Jail.”
- Involvement in Revolutionary Activities: Disillusioned by the suspension of the Non-Cooperation Movement in 1922, he joined the Hindustan Republican Association (HRA) led by Ram Prasad Bismil.
- Participated in fundraising through robberies of government establishments.
- Joined significant actions including the Kakori Train Robbery (1925), the killing of John P. Saunders (1928), and the attempted assassination of the Viceroy (1929).
- Formation of the HSRA: In 1928, Azad, along with Bhagat Singh and others, reorganized the HRA into the Hindustan Socialist Republican Association (HSRA) with the aim of achieving an independent India based on socialist principles.
- Death: On 27 February 1931, surrounded by police in Alfred Park (now Azad Park) in Allahabad, he engaged in a shootout.
- He fought bravely, allowing his comrades to escape, but ultimately shot himself with the last bullet to avoid capture.
- Legacy :He remains a symbol of fearless patriotism and dedication to the cause of Indian independence, known for his commitment to revolutionary ideals and sacrifices made in the struggle against British rule.

## Digital Postal Index Number

Syllabus: GS2/ Governance

### In News

- The Department of Posts releases a beta version of DIGIPIN (Digital Postal Index Number) for public comments and expert opinion.

### About DIGIPIN

- It is an initiative to establish a standardized, geo-coded addressing system in India, for ensuring simplified addressing solutions for citizen-centric delivery of public and private services.
- The DIGIPIN layer will act as the addressing reference system which can be used for logically locating addresses with directional properties built into it due to the logical naming pattern followed in its construction.
- The DIGIPIN is proposed to be fully available in the public domain and can be easily accessed by everyone.
- The DIGIPIN Grid system being an addressing referencing system, can be used as the base layer for other ecosystems, including various service providers and utilities, where addressing is one of the processes in the workflow.

## Pradhan Mantri Janjatiya Unnat Gram Abhiyan

Syllabus: GS2/ Welfare Schemes

### In News

- The Budget introduced the Pradhan Mantri Janjatiya Unnat Gram Abhiyan for improving the socio-economic conditions of tribal communities.

### About

- This initiative aims to provide saturation coverage for tribal families in tribal-majority villages and aspirational districts, covering 63,000 villages and benefiting 5 crore tribal people.
- Saturation approach aims to enhance capabilities and empower people through targeted interventions in education, health, and skill development.

## Maritime Organisation (IMO) 2024 Award

Syllabus: Miscellaneous

### Context

- Indian Seafarers to be Honored for Exceptional Bravery at Sea by The International Maritime Organization (IMO) in its 2024 awards for Bravery at Sea.

## About

- The IMO Council has honoured Captain Avhilash Rawat and the crew of the oil tanker Marlin Luanda for their extraordinary bravery, leadership, and determination.
- Three categories of honour are the Award, Certificates of Commendation and Letters of Commendation.
- The honours are awarded annually and were established by the Organization to provide international recognition for those who, at the risk of losing their own life, perform acts of exceptional bravery.
- IMO: It is a specialised agency of the United Nations responsible for regulating maritime transport.
- The IMO was established following agreement at a UN conference held in Geneva in 1948 and the IMO came into existence ten years later, meeting for the first time in 1958.

## Exercise Pitch Black

### Syllabus: GS3/Defence

#### Context

- An Indian Air Force (IAF) contingent reached at the Royal Australian Air Force (RAAF) Base Darwin, Australia for participating in Exercise Pitch Black 2024.

#### Exercise 'Pitch Black'

- It is a biennial, multi- national exercise hosted by the RAAF.
- The name 'Pitch Black' was derived from the emphasis on night time flying over large un-populated areas.
- The 2024 edition is slated to be the largest in the 43 year long history of Ex Pitch Black, which includes participation by 20 countries, with over 140 aircraft and 4400 military personnel of various air forces.
- The exercise would provide IAF with an opportunity towards force integration with participating nations and mutual exchange of best practices.
- The IAF has previously participated in the 2018 and 2022 editions of this exercise.

## Austria

### Syllabus :GS 1/Places in news

#### In News

- Prime Minister Shri. Narendra Modi paid an official visit to Austria

#### About Austria

- Austria is situated in Central Europe.
- Capital :Vienna
- Border Areas : Austria borders eight countries: Germany, the Czech Republic, Slovakia, Hungary, Slovenia, Italy, Switzerland and Lichtenstein.
- Geographical Features : Austria's geographical position has long made it a crossroads for trade routes between the major European economic and cultural areas.
- Highest mountain: Grossglockner
- Biggest lake: Lake Constance
- Longest river: Danube (2,848 km, 350 km of which are in Austria).
- India and Austria : They have enjoyed traditionally close and very friendly relations since 1949 and celebrate 70 years of bilateral relationships in 2019.



## India to Sign Biodiversity Beyond National Jurisdiction (BBNJ) Agreement

### Syllabus: GS3/ Environment

#### Context

- The Union Cabinet has approved India to sign the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement.

## About

- The Ministry of Earth Sciences will spearhead the country's implementation of the BBNJ Agreement.
- The Agreement allows India to enhance its strategic presence in areas beyond the EEZ (Exclusive Economic Zone).
- It would also contribute to achieving several SDGs, particularly SDG14 (Life Below Water).

## What is the BBNJ Agreement?

- The BBNJ Agreement, or the 'High Seas Treaty', is an international treaty under the United Nations Convention on the Law of the Sea (UNCLOS).
- It sets precise mechanisms for the sustainable use of marine biological diversity through international cooperation and coordination.
- Parties cannot claim or exercise sovereign rights over marine resources derived from the high seas and ensure fair and equitable sharing of benefits.
- High Seas (areas beyond national jurisdiction) are the global common oceans open to all for internationally lawful purposes such as navigation, overflight, laying submarine cables and pipelines, etc.

## Implementation of BBNJ Agreement

- The BBNJ Agreement will be the third implementation agreement under UNCLOS if and when it enters into force, alongside its sister implementation agreements:
- The 1994 Part XI Implementation Agreement (which addresses the exploration and extraction of mineral resources in the international seabed area)
- The 1995 UN Fish Stocks Agreement (which addresses the conservation and management of straddling and highly migratory fish stocks).
- The Agreement was agreed upon in March 2023 and is open for signature for two years starting September 2023.
- It will be an international legally binding treaty after it enters force 120 days after the 60th ratification, acceptance, approval or accession.
- As of June 2024, 91 countries have signed the BBNJ Agreement, and eight Parties have ratified it.

## United Nations Convention on the Law of the Sea (UNCLOS)

- UNCLOS was adopted in 1982, and came into force in 1994.
- It lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources.
- It establishes the International Seabed Authority to regulate mining and related activities on the ocean floor beyond national jurisdiction.
- As of today, more than 160 countries have ratified UNCLOS.

## 9 years of the Digital India initiative

### Syllabus :GS 2/Governance

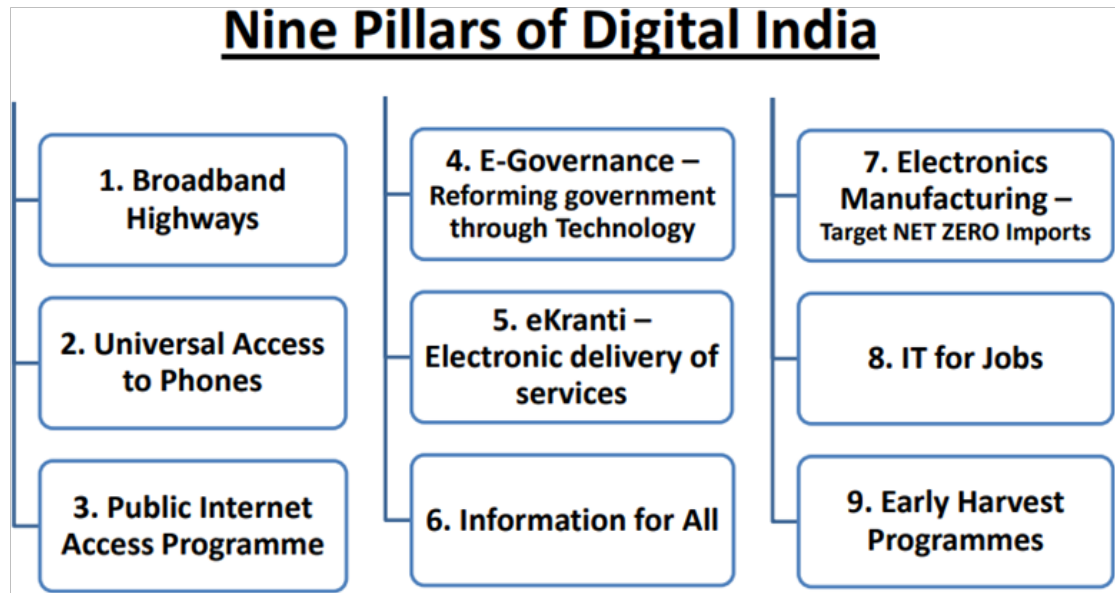
#### In News

- Prime Minister Narendra Modi has lauded the successful completion of nine years of the Digital India initiative.

#### About Digital India programme

- It was launched by Prime Minister Shri Narendra Modi on July 01, 2015 with an aim to transform India into a knowledge-based economy and a digitally empowered society by ensuring digital services, digital access, digital inclusion, digital empowerment and bridging the digital divide.
- It is coordinated by MeitY with the Ministries and Departments in the Central and State Governments partnering it in their respective domain areas.
- Digital India symbolises an empowered India which boosts Ease of Living and transparency.

## Nine Pillars of Digital India



### Achievements

- Financial Inclusion : Due to the Digital India campaign, over 11 Crore farmers now receive money directly in their bank accounts.
- The Government of India, in collaboration with the EKstep Foundation, launched an AI chatbot with PM-Kisan to extend financial help to farmers .
- Ayushman Bharat: leverages digital platforms to provide health insurance coverage to vulnerable sections of society.
- Over 34.6 crore Ayushman Cards were created
- Over 674 crore documents issued by DigiLocker.
- Over 137 Crore Aadhaar numbers have been generated, a unique ID for every Indian which is empowering millions with digital identity.
- BharatNet has laid 6.83 lakh kilometres of optical fibre network, enough to circle the Earth over 17 times.
- Over Nine crore FASTags issued it's almost equal to the number of vehicles manufactured worldwide in 2023.
- Pradhan Mantri Grameen Digital Saksharta Abhiyan (PMGDisha), the world's largest digital literacy program, equips rural communities with essential digital skills like marketing, e-commerce, finance, and cybersecurity, enabling them to participate fully in the digital economy
- The Government has come up with e-Marketplace (GeM), a dedicated platform for different goods & services procured by government organisations/departments/PSUs, offering 11,900 product categories and 321 service categories.
- BHIM is a UPI-based payment app that simplifies digital transactions.
- It has empowered millions of users to send and receive money seamlessly.
- There has been more than 535 lakh crore rupees of UPI transactions.
- Swamitva Scheme: Using drones and technology, the Swamitva Scheme aims to provide land titles to rural landowners.
- The Jan Dhan Yojana has facilitated the opening of bank accounts for millions of unbanked individuals.
- The program also encourages digital payments, reducing the reliance on cash transactions.

### Challenges

- While Digital India has made significant strides, challenges such as digital literacy, internet penetration in remote areas, and cybersecurity remain.
- Disparities in digital access persist and bridging the urban-rural divide and reaching marginalized communities remains a challenge.
- Financial Resource Issues
- Coordination Issues because Program covers many other departments
- Balancing convenience with privacy protection is essential.

### Conclusion and Way Forward

- The Digital India program has become a transformative force, altering the pace of India's growth story while transforming the country into a digitally empowered society and a knowledge-based economy.
- Digital India is paving the way for a more inclusive, prosperous, and digitally connected India.
- As India continues its digital journey, collaboration, innovation, and citizen participation will be key drivers.

## GST Completes Seven Years

### Syllabus: GS3/Economy

#### Context

- As the Goods and Services Tax (GST) completes seven years in June 2024, the gross monthly collection reached Rs 1.74 lakh crore, marking a 7.7% increase compared to the previous year.

#### About

- The 101st Amendment Act of 2016 paved the way for the introduction of GST and was implemented on 1 July 2017, in India.
- The GST taxpayer base has increased to 1.46 crore in April 2024 from 1.05 crore as of April 2018.

#### Goods and Services Tax (GST)

- GST is a unified tax system that replaced multiple indirect taxes levied by both the Central and State Governments.
- The GST system follows a dual structure, comprising Central GST (CGST) and State GST (SGST), levied concurrently by the Central and State governments, respectively.
- Additionally, an Integrated GST (IGST) is levied on interstate supplies and imports, which is collected by the Central Government but apportioned to the destination state.

#### Goods and Services Tax (GST) Council

- The Goods and Services Tax (GST) Council is a constitutional body established under Article 279A of the Indian Constitution through the 101st Amendment Act of 2016.
- The Union Finance Minister is the Chairperson of the GST Council.
- The GST Council makes recommendations to the Union and the States on key GST-related issues, including:
  - Taxes, cesses, and surcharges to be subsumed under GST
  - Goods and services to be subject to or exempt from GST
  - Model GST laws, principles of levy, and apportionment of IGST
  - Tax rates, thresholds, special provisions, and any other matter relating to GST
- Dispute resolution: The Council also serves as a platform to resolve disputes between the Centre and the States or among the States themselves on GST-related matters.
- The Centre has one-third of the total voting power, while the States collectively have two-thirds.

#### Salient Features of GST

- One Nation, One Tax:** GST brought uniformity in the tax structure across India, eliminating the cascading effect of taxes.
- Destination-based Tax:** GST is a destination-based tax, levied at each stage of the supply chain, from the manufacturer to the consumer.
- Input Tax Credit (ITC):** GST allows for the utilization of input tax credit, wherein businesses can claim credit for the tax paid on inputs used in the production or provision of goods and services. This helps avoid double taxation and reduces the overall tax liability.
- Online Compliance:** GST introduced an online portal, the Goods and Services Tax Network (GSTN), for registration, filing of returns, payment of taxes, and other compliance-related activities.
- Anti-Profitteering Measures:** The government established the National Anti-Profitteering Authority (NAA) to monitor and ensure that businesses do not engage in unfair pricing practices and profiteering due to the implementation of GST.

- Composition Scheme: The composition scheme is available for small taxpayers with a turnover below a prescribed limit. Under this scheme, businesses are required to pay a fixed percentage of their turnover as GST and have simplified compliance requirements.

### Challenges

- Refund delay issues: the Government has taken many steps to smoothen the process of export refunds, automatic processing of refunds has always been an area of major concern under GST.
- Adoption & Technical Issues: Small and medium businesses are still grappling to adapt to the tech-enabled regime.
- The 15th Finance Commission, in its report, has also highlighted several areas of concern in the GST regime relating to:
  - multiplicity of tax rates,
  - shortfall in GST collections vis-à-vis the forecast,
  - high volatility in GST collections,
  - inconsistency in filing of returns,
  - dependence of States on the compensation from Centre

### Way Ahead

- Goods and Services Tax (GST) has undoubtedly marked a watershed moment in India's economic landscape. By streamlining the indirect tax system, it has paved the way for a more efficient and transparent tax regime.
- Despite initial challenges and ongoing adjustments, GST holds the promise of fostering economic growth, improving tax compliance, and creating a more robust revenue system for the government.
- As the Indian economy continues to grow, the GST framework should be fine-tuned to address challenges and reap maximum benefits.

## Highlights Of the Union Budget 2024-25

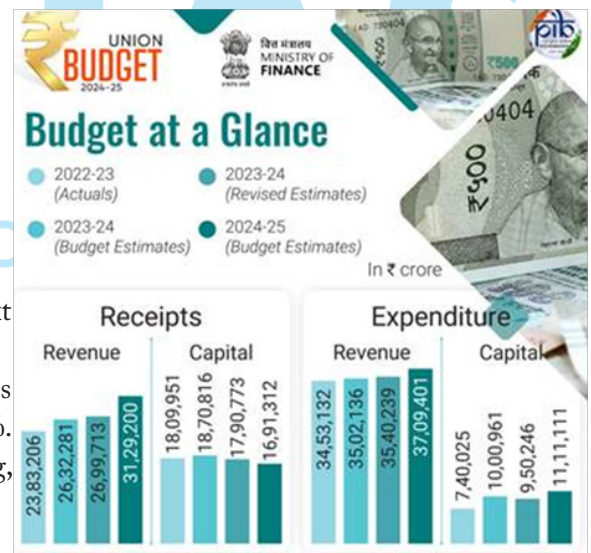
### Syllabus: GS3/Economy

#### Context

- The Union Minister of Finance and Corporate Affairs Smt. Nirmala Sitharaman presented the Union Budget 2024-25 in Parliament.

#### About

- Budget Estimates of 2024-25 are
- Total receipts other than borrowings: ₹32.07 lakh crore.
- Total expenditure: ₹48.21 lakh crore.
- Net tax receipt: ₹25.83 lakh crore.
- Fiscal deficit: 4.9 percent of GDP.
- Government aims to reach a deficit below 4.5 percent next year.
- Inflation continues to be low, stable and moving towards the 4% target; Core inflation (non-food, non-fuel) at 3.1%.
- The focus of the budget is on Employment, Skilling, MSMEs, and the Middle Class.



### Package of PM's five schemes for Employment and Skilling

- Prime Minister's Package of 5 Schemes and Initiatives for employment, skilling and other opportunities for 4.1 crore youth over a 5-year period.
- Scheme A – First Timers: One-month salary of up to ₹15,000 to be provided in 3 installments to first-time employees, as registered in the EPFO.
- Scheme B – Job Creation in manufacturing: Incentive to be provided at specified scale directly, both employee and employer, with respect to their EPFO contribution in the first 4 years of employment.
- Scheme C – Support to employers: Government to reimburse up to ₹3,000 per month for 2 years towards EPFO contribution of employers, for each additional employee.

- New centrally sponsored scheme for Skilling: 20 lakh youth to be skilled over a 5-year period and 1,000 Industrial Training Institutes to be upgraded in hub and spoke arrangements.
- New Scheme for Internship in 500 Top Companies to 1 crore youth in 5 years.

### Nine Budget Priorities in pursuit of ‘Viksit Bharat’

- Productivity and resilience in Agriculture
- Employment & Skilling
- Inclusive Human Resource Development and Social Justice
- Manufacturing & Services
- Urban Development
- Energy Security
- Infrastructure
- Innovation, Research & Development and
- Next Generation Reforms

#### Priority 1: Productivity and resilience in Agriculture

- Allocation of 1.52 lakh crore for agriculture and allied sectors.
- New 109 high-yielding and climate-resilient varieties of 32 field and horticulture crops to be released for cultivation by farmers.
- 10,000 need-based bio-input resource centres to be established for natural farming.
- Digital Public Infrastructure (DPI) for Agriculture to be implemented for coverage of farmers and their lands in 3 years.

#### Priority 2: Employment & Skilling

- As part of the Prime Minister’s package, 3 schemes for ‘Employment Linked Incentive’ to be implemented – Scheme A – First Timers; Scheme B – Job Creation in manufacturing; Scheme C – Support to employers.
- To facilitate higher participation of women in the workforce;
- Working women hostels and crèches to be established with industrial collaboration
- Women-specific skilling programmes to be organized
- Market access for women SHG enterprises to be promoted.
- Skill Development: New centrally sponsored scheme for Skilling under Prime Minister’s Package for 20 lakh youth over a 5-year period.
- Model Skill Loan Scheme to be revised to facilitate loans up to 7.5 lakh.
- Financial support for loans upto `10 lakh for higher education in domestic institutions to be provided to youth who have not been eligible for any benefit under government schemes and policies.

#### Priority 3: Inclusive Human Resource Development and Social Justice

- Purvodaya: Industrial node at Gaya to be developed along the Amritsar-Kolkata Industrial Corridor.
- Power projects, including a new 2400 MW power plant at Pirpainti, to be taken up at a cost of `21,400 crore.
- Andhra Pradesh Reorganization Act: Special financial support through multilateral development agencies of `15,000 crore in the current financial year.
- Industrial nodes at Koppaathy along Visakhapatnam-Chennai Industrial Corridor and at Orvakal along Hyderabad-Bengaluru Industrial Corridor.
- Women-led development: Total allocation of more than `3 lakh crore for schemes benefitting women and girls.
- Pradhan Mantri Janjatiya Unnat Gram Abhiyan: Socio-economic development of tribal families in tribal-majority villages and aspirational districts, covering 63,000 villages benefitting 5 crore tribal people.
- 100 branches of India Post Payment Bank to be set up in the NorthEast region.

#### Priority 4: Manufacturing & Services

- Credit Guarantee Scheme for MSMEs in the Manufacturing Sector: A credit guarantee scheme without collateral or third-party guarantee in term loans to MSMEs for purchase of machinery and equipment.
- Credit Support to MSMEs during Stress Period: New mechanism to facilitate continuation of bank credit to MSMEs during their stress period.



- Mudra Loans: The limit of Mudra loans under ‘Tarun’ category to be enhanced to `20 lakh from `10 lakh for those who have successfully repaid previous loans.
- E-Commerce Export Hubs: E-Commerce Export Hubs to be set up under public-private-partnership (PPP) mode for MSMEs and traditional artisans to sell their products in international markets.
- Critical Mineral Mission: Critical Mineral Mission to be set up for domestic production, recycling of critical minerals, and overseas acquisition of critical mineral assets.
- Digital Public Infrastructure (DPI) Applications: Development of DPI applications in the areas of credit, e-commerce, education, health, law and justice, logistics, MSME, services delivery, and urban governance.

### Priority 5: Urban Development

- Formulation of Transit Oriented Development plans and strategies to implement and finance 14 large cities above 30 lakh population.
- Street Markets: New scheme to support the development of 100 weekly ‘haats’ or street food hubs every year for the next 5 years in select cities.

### Priority 6: Energy Security

- Government to partner with the private sector for R&D of Bharat Small Modular Reactor and newer technologies for nuclear energy, and to set up Bharat Small Reactors.
- Advanced Ultra Super Critical Thermal Power Plants: Joint venture proposed between NTPC and BHEL to set up a full scale 800 MW commercial plant using Advanced Ultra SuperCritical (AUSC) technology.

### Priority 7: Infrastructure

- Infrastructure investment by Central Government: `11,11,111 crore (3.4 % of GDP) to be provided for capital expenditure.
- Infrastructure investment by state governments: Provision of `1.5 lakh crore for long-term interest free loans to support states in infrastructure investment.
- Tourism: Comprehensive development of Vishnupad Temple Corridor, Mahabodhi Temple Corridor and Rajgir.

### Priority 8: Innovation, Research & Development

- Anusandhan National Research Fund for basic research and prototype development to be operationalised.
- Financing pool of `1 lakh crore for spurring private sector-driven research and innovation at commercial scale.
- Space Economy: Venture capital fund of `1,000 crore to be set up for expanding the space economy by 5 times in the next 10 years.

### Priority 9: Next Generation Reforms

- Rural Land Related Actions: Unique Land Parcel Identification Number (ULPIN) or Bhu-Aadhaar for all lands, Digitization of cadastral maps etc.
- NPS Vatsalya: NPS-Vatsalya as a plan for contribution by parents and guardians for minors.

## Highlights for Tax Collection

### Indirect Taxes

- GST: Buoyed by GST’s success, tax structure to be simplified and rationalized to expand GST to remaining sectors.

### Sector specific customs duty proposals

- Medicines and Medical Equipment: Three cancer drugs namely Trastuzumab, Deruxtecan, Osimertinib and Durvalumab fully exempted from custom duty.
- Changes in Basic Customs Duty (BCD) on x-ray tubes & flat panel detectors for use in medical x-ray machines under the Phased Manufacturing Programme.
- Precious Metals: Customs duties on gold and silver reduced to 6 per cent and that on platinum to 6.4 per cent.
- Telecommunication Equipment: BCD increased from 10 to 15 per cent on PCBA of specified telecom equipment.

- Trade facilitation: For promotion of domestic aviation and boat & ship MRO, time period for export of goods imported for repairs extended from six months to one year.
- Time-limit for re-import of goods for repairs under warranty extended from three to five years.
- Critical Minerals: 25 critical minerals fully exempted from customs duties.
- BCD on two critical minerals reduced.
- Solar Energy: Capital goods for use in manufacture of solar cells and panels exempted from customs duty.

### Direct Taxes

- Efforts to simplify taxes, improve taxpayer services, provide tax certainty and reduce litigation to be continued.
- 58 percent of corporate tax from simplified tax regime in FY23, more than two-thirds taxpayers availed simplified tax regime for personal income tax in FY 24.

### Simplification and Rationalisation of Capital Gains

- Short term gains on certain financial assets to attract a tax rate of 20 per cent.
- Long term gains on all financial and non-financial assets to attract a tax rate of 12.5 per cent.
- Exemption limit of capital gains on certain financial assets increased to 1.25 lakh per year.

### Litigation and Appeals

- 'Vivad Se Vishwas Scheme, 2024' for resolution of income tax disputes pending in appeal.
- Monetary limits for filing direct taxes, excise and service tax related appeals in Tax Tribunals, High Courts and Supreme Court increased to 60 lakh, 2 crore and 5 crore respectively.
- Safe harbor rules expanded to reduce litigation and provide certainty in international taxation.

### Employment and Investment

- Angel tax for all classes of investors abolished to bolster start-up ecosystem.
- Corporate tax rate on foreign companies was reduced from 40 to 35 per cent.

### Deepening tax base

- Security Transactions Tax on futures and options of securities increased to 0.02 per cent and 0.1 per cent respectively.
- Income received on buy back of shares in the hands of the recipient to be taxed.

### Social Security Benefits

- Deduction of expenditure by employers towards NPS to be increased from 10 to 14 percent of the employee's salary.
- Non-reporting of small movable foreign assets up to 20 lakh de-penalised.

### Changes in Personal Income Tax under new tax regime

**UNION BUDGET 2024-25**

विद्युत मंत्रालय  
MINISTRY OF FINANCE

**Tax Relief and Revised Tax Slabs in New Tax Regime**

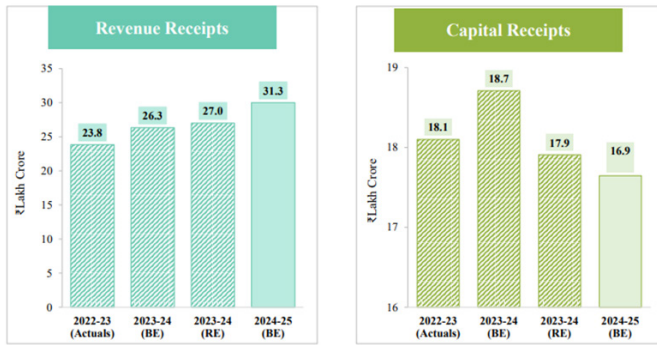
0-3 lakh rupees	Nil
3-7 lakh rupees	5 per cent
7-10 lakh rupees	10 per cent
10-12 lakh rupees	15 per cent
12-15 lakh rupees	20 per cent
Above 15 lakh rupees	30 per cent

- Income tax saving of up to ₹ 17,500/- for salaried employee in new tax regime

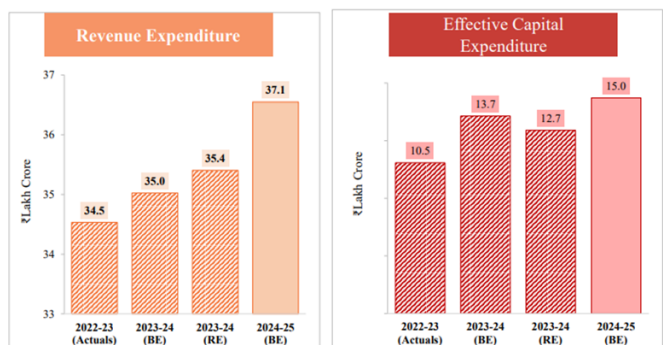
**Income Tax Relief for around Four Crore Salaried Individuals and Pensioners**

- Standard deduction for salaried employees to be increased from ₹ 50,000/- to ₹ 75,000/-
- Deduction on family pension for pensioners to be increased from ₹ 15,000/- to ₹ 25,000/-

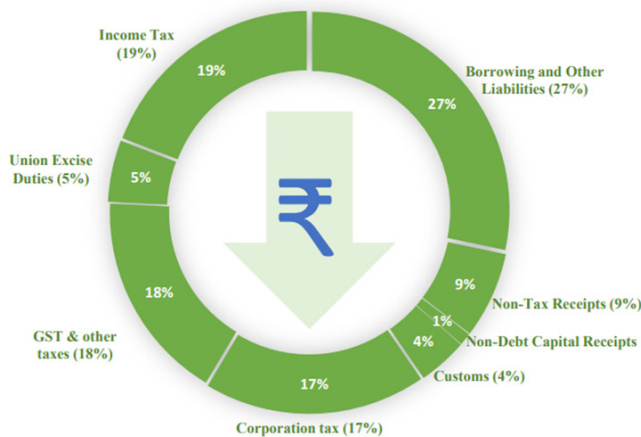
## Receipts



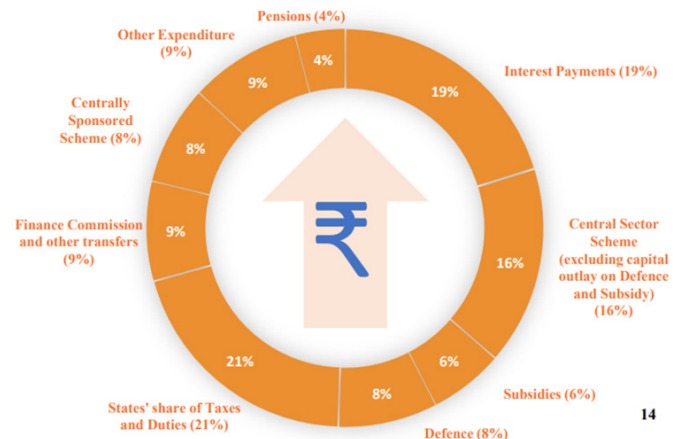
## Expenditure



## Rupee Comes From



## Rupee Goes To



## Annual Financial Statement (AFS)

- The Annual Financial Statement (AFS), as provided under Article 112, shows the estimated receipts and expenditure of the Government of India for 2024-25 along with estimates for 2023-24 as also actuals for the year 2022-23.
- The receipts and disbursements are shown under three parts in which Government Accounts are kept viz.,
  - The Consolidated Fund of India,
  - The Contingency Fund of India and
  - The Public Account of India.
- d. The Annual Financial Statement distinguishes the expenditure on revenue accounts from the expenditure on other accounts, as is mandated in the Constitution of India.
- The Revenue and the Capital sections together, make the Union Budget.

## Key Highlights: Economic Survey 2024

### Syllabus: GS3/Economy

### Context

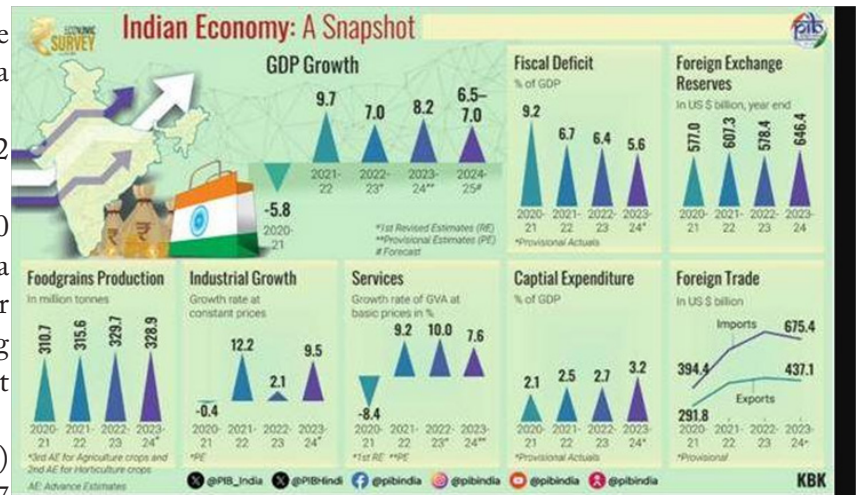
- The Finance minister tabled the Economy survey in the Parliament, a day ahead of the Budget presentation.

### About Economic Survey

- It is prepared by the Economic Division of the Department of Economic Affairs in the Ministry of Finance.
- It is formulated under the supervision of the chief economic adviser.
- The Economic Survey was first introduced in 1950-51 as part of the Budget documents.
- It was separated in the 1960s and is now presented a day before the Union Budget.
- The Economic Survey comprises two parts.
- The document's first part includes the country's economic developments and challenges.
- It also offers an overall review on the economy. The second part is focused on the past financial year.

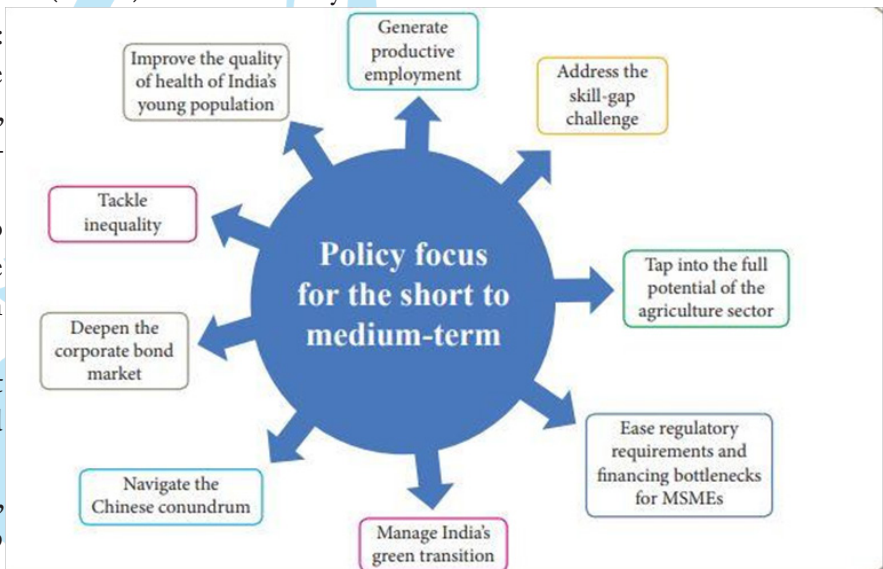
## Key Highlights of the Economic Survey 2024

- Resilient Indian Economy: The economy grew over 7 percent for a third consecutive year.
- Gross value added (GVA) at 2011-12 prices grew by 7.2 percent in FY24.
- India's real GDP in FY24 was 20 percent higher than in FY20, a notable achievement among major economies, and suggested strong potential for continued robust growth in FY 2024-25 and beyond.
- India's CAD (current account deficit) for the last financial year stood at 0.7



- percent of the GDP during FY24, an improvement from the deficit of 2.0 percent of GDP in FY23.
- India's external debt has been sustainable over the years, with the external debt-to-GDP ratio standing at 18.7 percent at the end of March 2024.
- Stable banking sector: Bank credit growth was broad-based and double-digit.
- Gross and net non-performing assets (NPAs) reached multi-year lows.

- Core inflation falls significantly: Inflation at 5.4 percent – the lowest level since the pandemic, driven by a fall in core inflation – both goods and services.
- Core services inflation eased to a nine-year low in FY24; at the same time, core goods inflation also declined to a four-year low.
- Food inflation a concern: It stood at 6.6 percent in FY23 and increased to 7.5 percent in FY24.
- Due to extreme weather events, depleted reservoirs, and crop damage, India's agriculture sector faced challenges, giving rise to food inflation.



- FDI inflows slow: Net FDI inflows to India declined from \$42 billion during FY23 to \$26.5 billion in FY24.
- However, gross FDI inflows moderated only by 0.6 per cent from \$71.4 billion in FY23 to just under \$71 billion in FY24.
- External Sector: India's external sector remained strong despite geopolitical headwinds and persistent inflation.
- Logistics Performance Index: India improved its rank from 44th in 2018 to 38th in 2023 out of 139 countries.
- Export Diversification: India is adding more export destinations, indicating regional diversification.
- Services Exports: Grew by 4.9% to USD 341.1 billion in FY24. Growth driven by IT/software services and 'other' business services.
- Remittances: India is the top remittance recipient globally, reaching USD 120 billion in 2023.
- Foreign Portfolio Investment: Positive net inflows in FY24 supported by strong economic growth, stable business environment, and increased investor confidence.
- India's energy needs to grow 2 times by 2047: India's energy needs are expected to grow 2 to 2.5 times by 2047 to meet a growing economy's developmental priorities and aspirations.
- As of May 2024, the share of non-fossil sources in the installed electricity generation capacity has reached 45.4 percent.

- The country has reduced the emission intensity of its GDP from 2005 levels by 33 percent in 2019.
- Formal Employment Growth: Net payroll additions under EPFO have more than doubled over the past five years, indicating robust growth in formal employment.
- Sectoral Performance: The agriculture and food management sector has registered an average annual growth rate of 4.18 per cent at constant prices over the last five years
- The services sector continues to significantly contribute to India's growth, accounting for about 55 percent of the total size of the economy in FY24.
- Emerging Job Demands: Greater and more focused skills needed in areas like: Blockchain, Artificial Intelligence (AI), Machine Learning, Internet of Things (IoT), Cybersecurity, Cloud Computing, Big Data Analytics, Augmented Reality, Virtual Reality, 3D Printing, Web and Mobile Development.
- Employment scenario: It estimates India's workforce at nearly 565 million, with over 45 percent engaged in agriculture, 11.4 percent in manufacturing, 28.9 percent in services, and 13.0 percent in construction.
- The services sector remains a major job creator, while the construction sector's importance has increased due to government infrastructure initiatives.
- The Survey emphasizes that the Indian economy needs to create 7.85 million non-farm jobs annually until 2030.
- Socio-economic repercussions of mental health issues: It extensively covers the socio-economic repercussions of mental health issues for the first time.
- As per the National Mental Health Survey (NMHS) 2015-16, 10.6 percent of adults in India suffer from mental disorders, with treatment gaps ranging from 70 percent to 92 percent for different conditions.
- It advocates for a comprehensive, community-based approach to address this problem.
- Growth strategy for new India: The job and skill creation should be among the key focus areas in the short to medium term.
- Other priorities include tapping the full potential of the agriculture sector, addressing MSME bottlenecks, managing India's green transition, deftly dealing with the Chinese conundrum, deepening the corporate bond market, tackling inequality, and improving the quality of health of our young population.

## India's Textile Sector

### Syllabus: GS3/ Economy

#### Context

- According to a report by the Global Trade Research Initiative India's garment exports in 2023-24 stood at \$14.5 billion, compared with \$15 billion in 2013-14.

#### About

- The report has raised concerns about a steady rise in India's garments and textiles imports in recent years, which had grown to almost \$9.2 billion in 2023.
- Complex procedures, import restrictions and domestic vested interests are holding up Indian garment export growth.

### Textile and apparel Industry in India

- Share in Domestic Trade: The domestic apparel & textile industry in India contributes approx. 2.3 % to the country's GDP, 13% to industrial production and 12% to exports.
- Share in Global Trade: India has a 4% share of the global trade in textiles and apparel.
- Export: India is the world's 3rd largest exporter of Textiles and Apparel.
- Production of Raw Material: India is one of the largest producers of cotton and jute in the world. India is also the 2nd largest producer of silk in the world and 95% of the world's hand-woven fabric comes from India.
- Employment Generation: The industry is the 2nd largest employer in the country providing direct employment to 45 million people and 100 million people in the allied sector.
- Regions: Andhra Pradesh, Telangana, Haryana, Jharkhand, and Gujarat are the top textile and clothing manufacturing states in India.

## Challenges Faced by the Textile Industry

- **Expensive Raw Material:** Recent Quality Control Orders issued for fabric imports have complicated the process of bringing in essential raw material.
- This scenario forces exporters to use expensive domestic supplies, making Indian garments overpriced and unappealing to global buyers who prefer specific fabric sources.
- **Cotton Price Fluctuations:** India is a major producer and consumer of cotton. Fluctuations in cotton prices impact the cost of production for textile manufacturers.
- **Imports from Bangladesh:** With Bangladesh having duty-free access to the Indian market, those garments are available at 15–20% less cost in India.
- When fabric is imported, jobs are lost in cotton, spinning, knitting, compacting, and processing segments in India.
- **Competition in the International Market:** The overall cost difference between Indian and Bangladesh garments should be about 2–3%, but the labour costs are lesser in Bangladesh by almost 30%.
- Between 2013 and 2023, garment exports from Vietnam have grown nearly 82% to hit \$33.4 billion while that of Bangladesh has grown nearly 70% to hit \$43.8 billion.
- **Infrastructure Constraints:** Infrastructure challenges, including inadequate transportation systems, power shortages, and outdated technology, hinder the efficiency of the textile manufacturing process.
- **Technology Upgradation:** Many textile units in India still use outdated machinery and technology.

## Initiatives by Government of India for the Growth of the Textile

- **Amended Technology Upgradation Fund Scheme (ATUFS):** To achieve the vision of generating employment and promoting exports through “Make in India” with “Zero effect and Zero defect” in manufacturing, ATUFS was launched in 2016 to provide credit linked Capital Investment Subsidy (CIS).
- **Scheme for Capacity Building in Textile Sector (SAMARTH):** To address the skilled manpower requirement across the textile sector, the scheme was formulated, under the broad policy guidelines of “Skill India” initiative.
- **National Technical Textile Mission:** The Mission for a period of 4 years (2020–21 to 2023–24) was approved for developing usage of technical textiles in various flagship missions, programmes of the country including strategic sectors.
- **Production Linked Incentive (PLI) Scheme – The PLI Scheme for Textiles** to promote production of Manmade Fibre (MMF) apparel, MMF Fabrics and Products of Technical Textiles in the country.
- **PM-MITRA:** To boost employment generation through setting up of 7 PM Mega Integrated Textile Region and Apparel (PM MITRA) Parks in Greenfield /Brownfield sites with world class infrastructure.
- **Scheme for Integrated Textile Parks (SITP):** SITP is designed to promote textile industry clusters by providing infrastructure support, including common facilities, utilities, and services.
- The goal is to encourage a more organized and efficient approach to textile manufacturing.
- **Integrated Skill Development Scheme (ISDS):** ISDS focuses on skill development in the textile sector to address the industry’s labor challenges.
- It aims to provide training to workers and enhance their employability, contributing to the overall growth of the sector.

## Way Ahead

- The industry continues to hope for a revival in demand but, what the industry needs urgently is policy intervention at the Centre and State-levels and holistic measures to improve competitiveness.
- So, on the lines of the ‘Make in India’ campaign, the government should encourage purchase of Indian garments.
- While the current volume of imports are not much compared with the overall size of the domestic market, diversion of these orders to local manufacturers will bolster production.

## India at the epicenter of Global Capability Centre Growth: Survey

Syllabus: GS3/ Economy

### In News

- As per the Economic Survey 2024, strategic interventions under various initiatives like Digital India and policies for easing doing business have streamlined online approvals and licensing processes for Global Capability Centres (GCCs).

### About

- These were called ‘captive centres’ earlier and have now come to be addressed as GICs (global in-house centres) or GCCs.
- Global Capability Centers are offshore units established by multinational corporations to perform a range of strategic functions.
- GCCs help companies concentrate on their core competencies while using the skills of centers in other places to grow and come up with new ideas.
- GCCs serve as innovation hubs—they bring together specialized talent, encourage collaboration, and tap into diverse perspectives.

## India’s Illegal Coal Mining Problem

Syllabus: GS3/ Economy

### Context

- Recently three workers died of asphyxiation inside an illegal coal mine in Gujarat’s Surendranagar district.

### About

- Coal is the most abundant fossil fuel in India, accounting for 55% of the country’s energy needs.
- According to the Ministry of Coal, illegal mining in India is mostly carried out in abandoned mines or shallow coal seams in remote or isolated places.
- Illegal mining is often carried out using rudimentary techniques like surface mining and rat-hole mining, rather than the scientific methods required for legal operations on a larger scale.

### Nationalization of Coal mines

- Coal in India was nationalized in two phases: first with the coking coal (used for the production of coke in the steel industry) in 1971-72; and then with the non-coking coal mines in 1973.
- The Coal Mines (Nationalization) Act, 1973 is the central legislation that determines eligibility for coal mining in India.
- Illegal mining constitutes a law and order problem, which is a State list subject. Hence, the onus of dealing with it falls on State governments rather than the Union government.

### Issues faced by workers in illegal coal mining

- The lack of safety equipment and protocols is the primary reason for deaths during illegal coal mining. Miners face increased respiratory risks due to inhaling coal dust, and the lack of safety equipment significantly increases this risk.
- Illegal mines lack proper structural support to carry out the extraction of coal, making working conditions hazardous and vulnerable to cave-ins, landslides, and explosions.
- Workers are exposed to high levels of toxic substances like lead and mercury, which can cause acute poisoning or long-term chronic medical conditions.
- Several people working in illegal coal mines are untrained for the job and for the risks it poses. There is a lack of proper training, quick response facilities, and knowledge in case of emergencies.

### Challenges to cut down illegal coal mining

- Economic Dependence:** Many local economies rely heavily on coal mining. When official mining operations cease, illegal mining often becomes a primary source of income for local communities.
- Poverty and Unemployment:** In regions where there are limited employment opportunities, illegal mining

provides a means of livelihood for many people, making it difficult to eradicate without addressing underlying economic issues.

- **High Demand for Coal:** Coal is a major source of energy in India, which drives the demand and makes illegal mining lucrative.
- **Weak Law Enforcement:** Limited resources and capacity of law enforcement agencies can result in ineffective policing of illegal mining activities.
- **Technological Challenges:** Monitoring and detecting illegal mining activities, especially in remote areas, are technologically challenging.
- **Support from political leaders:** It is alleged that illegal rat-hole coal mining has continued in Assam, as well as in Meghalaya and other north-eastern States, with the patronage of political leaders and in collusion with officials.

### Steps taken by government to curb illegal coal mining

- The Government of India has launched one mobile app namely “Khanan Prahari” and one web app Coal Mine Surveillance and Management System (CMSMS) for reporting unauthorized coal mining activities so that monitoring and taking suitable action on it can be done by concerned Law & Order enforcing authority.
- The National Green Tribunal (NGT) banned the practice of rat-hole coal mining in 2014 as it causes environmental degradation and is a threat to the life of miners.
- Committee/task force has been constituted at different levels (block level, sub-divisional level, district level, state level) in some subsidiaries of Coal India Limited to monitor different aspects of illegal mining.

### Way Ahead

- **Economic Development:** Providing alternative livelihood opportunities and economic development initiatives in mining-dependent regions to reduce reliance on illegal mining.
- **Improved Monitoring:** Utilize advanced technologies for monitoring mining activities and ensuring compliance with regulations.
- **Community Engagement:** Engage with local communities to raise awareness about the risks and consequences of illegal mining and to gain their support in combating it.

## India's Ethanol Production shift from Sugar to Maize

### Syllabus: GS3/ Economy

#### Context

- Cereal Grains have overtaken sugarcane as the primary feedstock for the production of ethanol used in blending with petrol.

#### About

- In the current supply year 2023- 2024, sugar mills and distilleries supplied 401 crore liters of ethanol to oil marketing companies.
- Of that, 211 crore liters or 52.7% was ethanol produced using maize and damaged foodgrains (mainly broken/ old rice not fit for human consumption), while sugarcane-based feedstocks (molasses and whole juice/ syrup) accounted for the remaining 190 crore liters.
- This is the first time that the contribution of grains to India's ethanol production has surpassed 50%.

#### What is Ethanol?

- Ethanol is 99.9% pure alcohol that can be blended with petrol.
- Alcohol production involves fermentation of sugar using yeast. In cane juice or molasses, sugar is present in the form of sucrose that is broken down into glucose and fructose.
- Also grains contain starch, a carbohydrate that has to first be extracted and converted into sucrose and simpler sugars, before their further fermentation, distillation and dehydration to ethanol.

#### Ethanol blending

- The 'National Policy on Biofuels' notified by the government in 2018 envisaged an indicative target of 20% ethanol blending in petrol by 2030.



- In 2014 only 1.5 per cent ethanol was blended in petrol in India.
- Given the encouraging performance and various interventions made by the government since 2014, the 20% target was advanced to 2025-26.

### Why is maize being promoted to produce ethanol ?

- Till 2017-18, ethanol was being produced only from molasses, the dense dark brown liquid byproduct containing sucrose that mills cannot economically recover and crystallize into sugar.
- However Sugarcane is a water-guzzling crop. A NITI Aayog report says that just one liter of ethanol produced from sugarcane consumes at least 2,860 liters of water.
- India will require 1320 million tons of sugarcane, 19 million hectares of additional land and 348 billion cubic meters of extra water to produce enough ethanol to meet the 20% ethanol blending target of 2025.
- Further the Food Corporation of India's (FCI) has restricted the use of rice on concerns over cereal inflation and hence maize has emerged as the top ethanol feedstock.

## Budget 2024: For Education, Employment, and Skill

### Syllabus: GS2/Government Policy and Interventions; GS3/Economy

#### Context

- Recent Union Budget for 2024-25 aims to provide 1.48 lakh crore for education, employment and skilling in the country.

#### Budget Allocations (Overall Vision)

- The budget's emphasis on education, employment, and skilling reflects the government's commitment to building a robust and inclusive economy.
- It aims to lead India toward strong development and all-round prosperity.

#### Budget Estimates(2024-25)

1. Total receipts (excluding borrowings): 32.07 lakh crore.
2. Total expenditure: 48.21 lakh crore.
3. Net tax receipts: 25.83 lakh crore.
4. Fiscal deficit: 4.9% of GDP. The government aims to reduce it further to below 4.5% next year

#### Education Initiatives in Budget 2024-25

- It aims to facilitate access to quality education and empower our youth with the necessary skills for the future.
- Higher Education: Financial support for loans up to 10 lakh will be provided to youth pursuing higher education in domestic institutions, especially those who haven't previously benefited from government schemes and policies

#### Prime Minister's Package for Employment and Skilling

- Scheme A – First Timers: First-time employees registered with the EPFO will receive one month's salary (up to 15,000) in three instalments.
- Scheme B – Job Creation in Manufacturing: Incentives will be provided directly to both employees and employers based on their EPFO contributions during the first four years of employment.
- Scheme C – Support to Employers: The government will reimburse up to 3,000 per month for two years towards EPFO contributions for each additional employee.
- Additionally, a new centrally sponsored scheme aims to skill 20 lakh youth over five years, upgrading 1,000 Industrial Training Institutes.

#### Employment and Skilling

- Prime Minister's Package for Youth: Budget announced a comprehensive package aimed at facilitating employment, skilling, and other opportunities for 4.1 crore youth over the next five years. This package has a central outlay of 2 lakh crores.
- Centrally-Sponsored Scheme for Skilling: The government has launched a new centrally-sponsored scheme to skill 20 lakh youth over the next five years.

- This collaborative effort with states and industry will focus on imparting relevant skills to enhance employability.
- Model Skilling Loan Scheme: The existing model skilling loan scheme will be revised to facilitate loans of up to 7.5 lakh. This will encourage more individuals to pursue vocational training and skill development.
- Skill Development and Upgradation: As part of this budget, 1,000 Industrial Training Institutes (ITIs) will be upgraded. Skill development remains a critical pillar for economic growth and individual empowerment.
- Additionally, a plan called 'Purvodaya' will be formulated to promote all-round development in the eastern region of India, covering states like Bihar, Jharkhand, West Bengal, Odisha, and Andhra Pradesh.
- PM Garib Kalyan Anna Yojana Extension: The government has extended the PM Garib Kalyan Anna Yojana for five more years. This scheme benefits a staggering 80 crore people in the country, ensuring food security for vulnerable populations.
- Focus on Marginalised Groups: As mentioned in the interim budget, there is a renewed focus on supporting the poor, women, youth, and farmers. The budgetary provisions aim to uplift these sections of society through targeted interventions.
- Rural Development and Infrastructure: A substantial provision of 2.66 lakh crores has been allocated for rural development, including rural infrastructure.
- Phase IV of the Pradhan Mantri Gram Sadak Yojana (PMGSY) will be launched to provide all-weather connectivity to 25,000 rural habitations.

### Conclusion

- Budget 2024-25 reflects a holistic approach, addressing employment, skill development, and economic growth. It aims to create ample opportunities for all segments of society, from youth to women to the middle class.
- It underscores the critical role education and skill development play in shaping India's future. By investing in our youth and promoting employment opportunities, the government aims to create a more resilient and prosperous nation.

## Union Budget 2024: Angel Tax For All Classes Of Investors To Be Abolished

### Syllabus: GS3/ Economy

#### In News

- In a bid to bolster the Indian startup ecosystem, the Budget 2024 announced the abolishment of angel tax for all classes of investors. The changes to the angel tax system will take effect on April 1, 2025.

#### What is Angel Tax?

- Introduced in 2012 under the Finance Act.
- Angel tax refers to the income tax that the government imposes on funding raised by unlisted companies, or startups, if their valuation exceeds the company's fair market value. It falls under Section 56 (II) (viib) of the Income Tax Act.
- Previously the angel tax applied only to local investors, the Budget for the 2023-24 fiscal year (April 2023 to March 2024) widened its ambit to include foreign investments.
- The purpose of its introduction was to curb money laundering and prevent the influx of unaccounted funds. However, it has stirred controversy among startups and investors, who claim it hinders innovation and fundraising efforts.

#### Reasons for abolishment

- This will bolster the Indian start-up eco-system, boost the entrepreneurial spirit and support innovation.
- It reduces FDI (foreign direct investment) into India. Abolishing angel tax will address concerns of various investors, especially with the decline in funding over the past year.
- The number of unicorns in India has dipped due to the slowing down of the startup ecosystem.
- A "unicorn" is a privately-owned startup business worth more than \$1 billion.

#### Indian start-up Ecosystem

- India has the 3rd largest startup ecosystem in the world.

- Several factors like increased internet penetration, digitization, and government initiatives have fueled the growth of top-funded sectors from 2014 to 2023 in India. These sectors include Retail, Enterprise Applications, Fintech, Transportation & Logistics tech, Food & Agriculture tech, Auto tech, Travel & Hospitality tech, and Edtech
- Women-led startups have also seen growth in the past ten years with total funding for these companies reaching \$1.1 billion in 2023 from \$0.456 billion in 2014.

### Indian Initiatives in Startups

- Startup India initiative: Launched in January 2016, the Startup India initiative aims to build a strong homegrown startup ecosystem while nurturing innovation and encouraging investments.
- The DPIIT-recognised startups get access to a variety of incentives under schemes including Fund of Funds for Startups (FFS), Startup India Seed Fund Scheme (SISFS) and Credit Guarantee Scheme for Startups (CGSS).
- The Startup India Seed Fund Scheme : It has been approved for four years, from FY22, with an outlay of 945 crore.
- It aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.
- Startup Mahakumbh: The government is also organizing a two-day Startup Mahakumbh to showcase India's startup prowess, and foster collaboration and growth within the ecosystem.
- The government's push toward green mobility unlocks enormous opportunities for businesses to explore and create charging infrastructure, battery recycling, and energy storage solutions
- Startup20: With the introduction of the first-ever engagement group, Startup20, under India's G20 presidency, the Indian startup ecosystem is making strides toward global recognition and impact.

### Major Challenges

- Despite initiatives launched by the government, many enterprises still face difficulties navigating the regulatory environment and obtaining the necessary approvals and licences for operation.
- Another challenge is the lack of infrastructure.
- A major challenge that businesses face is the need for more skilled talent.
- Startups hitherto exist mostly on the urban landscape
- Social enterprises often face difficulty in securing investment, as many investors are still cautious about investing in untested business models and technologies.

### Budget 2024 Eases Customs Act To Facilitate FTAs With UK, EU

#### Syllabus: GS3/Economy

#### Context

- To create legroom for signing free trade agreements (FTAs) with developed nations such as the UK and European Union, the Union Budget 2024 has introduced amendments in the Customs Act.

#### About

- It has liberalised compliance with value-addition norms that typically guard against misuse of concessions agreed in a trade pact.
- Rules of origin are the criteria needed to determine the national source of a product.
- While trade agreements help boost trade volumes with partner countries, it often risks a third country benefiting from the concessions resulting in a loss of revenue if rules of origin are breached.
- The government amended Section 28DA of the Customs Act, 1962 substituting 'certificate' of origin with 'proof' of origin.
- The Budget defined "Proof of origin" as a "certificate" or "declaration" in accordance with a trade pact.
- Impact on Future FTAs: The amended Customs Act now enables the acceptance of "proof" of origin (if India decided so in an agreement) which is a wider term that includes a certificate of origin as well as a self-declaration in line with global Customs norms.
- Amendments in the Customs Act would affect future trade agreements including the one signed with the

European Free Trade Association (EFTA) which has a provision allowing self-certification that can be activated in the future.

### Need for the Amendments

- As per the Global Trade Research Initiative (GTRI), nearly 60 times jump in silver imports during the last financial year from the United Arab Emirates (UAE) is unusual since the West Asian country does not produce silver and the import jump may be indicative of a breach in rule of origin finalised by India and UAE under the FTA.
- India introduced stringent rules of origin verification norms, CAROTAR, in 2020 after few instances of re-routing of goods through the countries with which India has FTAs.
- Several Southeast Asian countries such as Thailand subsequently raised concerns against CAROTAR norms in the India-ASEAN FTA review.
- The developed countries have good tracking systems, and the self-certification mode has already come into play in those countries for the FTAs they sign.
- India is still insisting on authority to sign a certificate of origin, because of bad experience of goods being diverted from China and other countries through Indonesia and Vietnam.

### Customs Act in India

- Objective: It aims to regulate the import and export of goods, prevent illegal trade, and enforce customs duties as levied by the government.
- Administration: The Act is administered by the Central Board of Indirect Taxes and Customs (CBIC), which is part of the Department of Revenue under the Ministry of Finance.

### Key Provisions:

- Customs Duty: It specifies the duties payable on import and export of goods. It is a type of indirect tax.
- Prohibited Goods: Specifies goods that cannot be imported or exported.
- Penalties: Prescribes penalties for various offences such as smuggling, evasion of duty, and other violations.
- Adjudication: Provides for adjudication by customs officers for disputes and violations.
- Appeals: Allows for appeals against decisions of customs officers to higher authorities and courts.
- Enforcement: The Act empowers customs officers with extensive powers to enforce customs laws, inspect cargo, search premises, and seize goods.

## National Industrial Corridor Development Programme

Syllabus: GS3/Economy

### Context

- The Union Finance Minister announced that twelve new industrial parks will be developed under the National Industrial Corridor Development programme in her Budget speech for 2024-25.

### National Industrial Corridor Development Programme

- It is India's infrastructure programme aiming to develop new industrial cities as "Smart Cities" and converging next generation technologies across infrastructure sectors.
- The oldest such corridors are Delhi Mumbai Industrial Corridor (DMIC) and Western Dedicated Freight Corridor, which are India's transportation backbone.
- The Government of India, through National Industrial Corridor Development & Implementation Trust (NICDIT), provides funds as equity/debt for the development of infrastructure in the industrial regions under industrial corridors.
- The States are responsible for making available contiguous and encumbrance free land parcels.

## Capital Gains Tax

Syllabus: GS3/Economy

### Context

- The Union Budget 2024-25 has raised taxation on income on short-term and long-term capital gains and also doubled the Securities Transaction Tax (STT) on futures & options (F&O) of securities.

## About

- Long-term capital gains (LTCG) on all financial and non-financial assets were increased to 12.5 percent, from 10 percent.
- However, the exemption limit of Rs 1 lakh for LTCG on these assets has also increased to Rs 1.25 lakh.
- The rate on short-term capital gains (STCG) has been hiked to 20 per cent from 15 per cent.

## Capital Gains Tax

- It is a form of direct tax that is paid due to the income that is earned from the sale of assets or investments.
- Investments in farms, bonds, shares, businesses, art, and home come under capital assets.
- Long-term gains are levied on profits of investments held for more than a year.
- Short-term gains are taxed at an individual's regular income tax rate, which is higher than the tax on long-term gains.

## Namo Drone Didi scheme

### Syllabus: GS3/Economy and Agriculture

#### Context

- The Finance Ministry has allocated Rs 500 crore for the Nam0 Drone Didi scheme and Rs 365.64 crore for National Mission on Natural Farming for 2024-25.

#### Namo Drone Didi scheme

- It is an initiative aimed at providing drones to 15,000 selected women self-help groups (SHGs) during the period 2023-24 to 2025-2026 for providing rental services to farmers.
- The women beneficiaries are trained to become drone pilots under the initiative.

#### How will Drone Didis help farmers?

- The trained women drone pilots will help farmers in various agricultural operations like fertilizer spraying, sowing seeds and crop monitoring.
- The initiative intends to modernize Indian agricultural practices and enhance productivity by placing the cutting edge technology at the disposal of rural women.
- The Centre will provide each SHG identified a subsidy up to 80 per cent towards the cost of a drone or a maximum of Rs 8 lakh.

## Zombie Startups

### Syllabus :GS 3/Economy

#### In News

- Zombie startups have become a common scenario today.

#### About Zombie startups

- Zombie startups are ventures that have failed to scale or achieve sustainable growth.
- They are characterized by stagnant growth and dwindling resources.
- They may struggle to attract new investment or generate revenue, relying heavily on existing funds that diminish over time.
- They can distort market dynamics by occupying space and resources that could be allocated to more viable ventures, potentially slowing overall ecosystem growth.
- They may be a modern challenge, but with proactive measures and collective effort, they can serve as valuable lessons in the ongoing journey of entrepreneurial innovation.

## Primary Agricultural Credit Societies

### Syllabus: GS3/ Economy

#### Context

- The Union government will set up multi-purpose Primary Agricultural Credit Societies (PACs) in around two lakh gram panchayats of the country with no cooperative network within the next five years.

## What are Cooperative societies?

- Cooperative societies is a State Subject under Entry 32 of the State List of Seventh Schedule of the Constitution of India.
- While cooperative societies functioning within a single state are governed by the Cooperative Societies Act of their respective states, cooperative societies functioning in more than one state/UT are governed by the Multi-State Cooperative Societies Act, 2002 under the purview of the Government of India (GoI).

## Primary Agricultural Credit Societies (PACS)

- Primary Agricultural Credit Societies (PACS) are credit societies that are registered under the Cooperative Societies Act of the State concerned.
- They are grassroots-level institutions in villages with individual farmers, artisans, and other weaker sections as member shareholders.
- They form the lowest tier of the federated short-term cooperative credit structure with District Cooperative Banks (DCCBs) and/or State Cooperative Banks (StCBs) in their upper tiers.

## Benefits of Primary Agricultural Credit Societies (PACS)

- **Credit Provision:** PACs provide easy access to credit for farmers and rural residents. This includes short-term, medium-term, and long-term loans for agricultural and related activities.
- **Financial Inclusion:** They promote financial inclusion by bringing banking services to remote rural areas, helping people who might not have access to traditional banking facilities.
- **Agricultural Support:** PACs provide support services like the supply of seeds, fertilizers, and pesticides at reasonable rates, helping farmers increase productivity.
- **Storage and Marketing:** They assist in the storage of agricultural produce and sometimes in marketing it, ensuring that farmers get fair prices for their products.
- **Training and Education:** PACs organize training programs and workshops to educate farmers on modern farming techniques, financial literacy, and sustainable agricultural practices.
- **Social and Economic Development:** By improving access to credit and financial services, PACs contribute to the overall social and economic development of rural communities, reducing poverty and improving living standards.
- **Employment Generation:** Through their various activities, PACs contribute to employment generation in rural areas, both directly and indirectly.

## Challenges faced by PACS

- **Limited Resources:** Many PACs suffer from a lack of adequate financial and human resources, which limits their ability to provide comprehensive services to their members.
- **Political Interference:** Political influence in the functioning of PACs can lead to favoritism, corruption, and misallocation of resources, undermining their purpose.
- **High Overdue Loans:** A significant issue is the high level of non-performing assets (NPAs) due to overdue loans. Poor recovery mechanisms and lax lending practices contribute to this problem.
- **Limited Credit Products:** PACs offer a narrow range of credit products, which may not meet the diverse needs of the rural population.
- **Technological Backwardness:** Many PACs lag in adopting modern technology and digital banking solutions, which affects their efficiency and competitiveness.

## Way Ahead

- Increased financial support from the government will help PACs improve their capital base. Also Forming partnerships with commercial banks and other financial institutions can help PACs access additional resources.
- There is a need for developing a wider range of credit products tailored to the diverse needs of the rural population, such as microloans, crop insurance, and savings products.
- Also strengthening internal controls and audit mechanisms is required to detect and prevent fraud and mismanagement.

## Right to Repair Portal

Syllabus: GS3/ Economy

### In News

- The Centre asked the automobile companies to join the unified Right to Repair Portal India.

### About

- The portal was launched by the Department of Consumer Affairs to empower consumers by providing them with easy access to information on repairing their products, fostering a circular economy, and reducing e-waste.
- The portal provides consumers with manuals, repair guides, and videos for various products, enabling them to understand the repair process.
- It discloses information on the price and warranty of spare parts, allowing consumers to make informed decisions about repairs.
- The portal initially focuses on key sectors like farming equipment, electronic items, automobile items etc.

## GST Completes Seven Years

Syllabus: GS3/Economy

### Context

- As the Goods and Services Tax (GST) completes seven years in June 2024, the gross monthly collection reached Rs 1.74 lakh crore, marking a 7.7% increase compared to the previous year.

### About

- The 101st Amendment Act of 2016 paved the way for the introduction of GST and was implemented on 1 July 2017, in India.
- The GST taxpayer base has increased to 1.46 crore in April 2024 from 1.05 crore as of April 2018.

### Goods and Services Tax (GST)

- GST is a unified tax system that replaced multiple indirect taxes levied by both the Central and State Governments.
- The GST system follows a dual structure, comprising Central GST (CGST) and State GST (SGST), levied concurrently by the Central and State governments, respectively.
- Additionally, an Integrated GST (IGST) is levied on interstate supplies and imports, which is collected by the Central Government but apportioned to the destination state.

### Goods and Services Tax (GST) Council

- The Goods and Services Tax (GST) Council is a constitutional body established under Article 279A of the Indian Constitution through the 101st Amendment Act of 2016.
- The Union Finance Minister is the Chairperson of the GST Council.
- The GST Council makes recommendations to the Union and the States on key GST-related issues, including:
  - Taxes, cesses, and surcharges to be subsumed under GST
  - Goods and services to be subject to or exempt from GST
  - Model GST laws, principles of levy, and apportionment of IGST
  - Tax rates, thresholds, special provisions, and any other matter relating to GST
- Dispute resolution: The Council also serves as a platform to resolve disputes between the Centre and the States or among the States themselves on GST-related matters.
- The Centre has one-third of the total voting power, while the States collectively have two-thirds.

### Salient Features of GST

- One Nation, One Tax: GST brought uniformity in the tax structure across India, eliminating the cascading effect of taxes.
- Destination-based Tax: GST is a destination-based tax, levied at each stage of the supply chain, from the manufacturer to the consumer.

- Input Tax Credit (ITC): GST allows for the utilization of input tax credit, wherein businesses can claim credit for the tax paid on inputs used in the production or provision of goods and services. This helps avoid double taxation and reduces the overall tax liability.
- Online Compliance: GST introduced an online portal, the Goods and Services Tax Network (GSTN), for registration, filing of returns, payment of taxes, and other compliance-related activities.
- Anti-Profitteering Measures: The government established the National Anti-Profitteering Authority (NAA) to monitor and ensure that businesses do not engage in unfair pricing practices and profiteering due to the implementation of GST.
- Composition Scheme: The composition scheme is available for small taxpayers with a turnover below a prescribed limit. Under this scheme, businesses are required to pay a fixed percentage of their turnover as GST and have simplified compliance requirements.

### Challenges

- Refund delay issues: the Government has taken many steps to smoothen the process of export refunds, automatic processing of refunds has always been an area of major concern under GST.
- Adoption & Technical Issues: Small and medium businesses are still grappling to adapt to the tech-enabled regime.
- The 15th Finance Commission, in its report, has also highlighted several areas of concern in the GST regime relating to:
  - multiplicity of tax rates,
  - shortfall in GST collections vis-à-vis the forecast,
  - high volatility in GST collections,
  - inconsistency in filing of returns,
  - dependence of States on the compensation from Centre

### Way Ahead

- Goods and Services Tax (GST) has undoubtedly marked a watershed moment in India's economic landscape. By streamlining the indirect tax system, it has paved the way for a more efficient and transparent tax regime.
- Despite initial challenges and ongoing adjustments, GST holds the promise of fostering economic growth, improving tax compliance, and creating a more robust revenue system for the government.
- As the Indian economy continues to grow, the GST framework should be fine-tuned to address challenges and reap maximum benefits.

### Project Nexus

#### Syllabus :GS 3/Economy

#### In News

- The Reserve Bank of India (RBI) has joined Project Nexus.

#### About Project Nexus

- Project Nexus is conceptualised by the Innovation Hub of the Bank for International Settlements (BIS).
- It is the first BIS Innovation Hub project in the payments area to move towards live implementation.
- It seeks to enhance cross-border payments by connecting multiple domestic instant payment systems (IPS) globally.
- BIS will facilitate central banks and IPS operators of India, Malaysia, the Philippines, Singapore and Thailand as they work towards live implementation in the next phase, with Bank of Indonesia as special observer.
- The platform is expected to go live by 2026.

### Recycling of Critical Mineral

#### Syllabus: GS3/ Economy

#### Context

- The Ministry of Mines is designing a Production Linked Incentive (PLI) scheme to boost the recycling of critical minerals in India.



## About

- The proposed PLI scheme aligns with policy recommendations from NITI Aayog, and complements the Battery Waste Management Rules (BWMR), 2022, which mandate phased recycling of used electric vehicle (EV) lithium-ion batteries from 2026 onwards.
- The PLI scheme will target e-waste recycling– often referred to as “urban mining”– to recover critical minerals such as lithium, copper, cobalt, graphite, chromium, and silicon.

## Need for the Critical Mineral Recycling

- Waste generation: India’s e-waste generation is poised to surge, driven by rapid growth in solar and wind energy infrastructure and EV adoption.
- The PV module waste will increase from 100 kilotons in FY23 to 340 kilotons by 2030. Additionally, 500 kt of EV batteries are expected to reach recycling units in the coming years.
- Scarce reserves: Manufacturing renewable energy technologies and transition to electric vehicles would require increasing quantities of minerals, including copper, manganese, zinc, and indium.
- However, India does not have many of these mineral reserves, or its requirements may be higher than the availability
- Chinese dominance:

## What are Critical Minerals?

- These are minerals that are essential for economic development and national security.
- The lack of availability of these minerals or the concentration of extraction or processing in a few geographical locations could potentially lead to “supply chain vulnerabilities and even disruption of supplies”.

## Applications of Critical Minerals

- Clean technologies initiatives such as zero-emission vehicles, wind turbines, solar panels etc.
- Critical minerals such as Cadmium, Cobalt, Gallium, Indium, Selenium and Vanadium and have uses in batteries, semiconductors, solar panels, etc.
- Advanced manufacturing inputs and materials such as defense applications, permanent magnets, ceramics.
- Minerals like Beryllium, Titanium, Tungsten, Tantalum, etc. have usage in new technologies, electronics and defense equipment.
- Platinum Group Metals (PGMs) are used in medical devices, cancer treatment drugs, and dental materials.

## List of Critical Minerals

- Different countries have their own unique lists of critical minerals based on their specific circumstances and priorities.
- A total of 30 minerals were found to be most critical for India, out of which two are critical as fertilizer minerals: Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.

## Conclusion

- This move will foster a circular economy and bolster domestic supply chains, following a lackluster response to recent auctions of critical mineral blocks.
- The International Energy Agency (IEA) estimates that by 2040, recycled copper, lithium, nickel, and cobalt from spent batteries alone could provide 10% of these minerals. However recycling can only ease critical minerals scarcity, not solve it.

## District Mineral Foundation

### Syllabus: GS3/Economy

#### In News

- District Mineral Foundation Gallery Inaugurated At Shastri Bhawan In New Delhi.

#### About District Mineral Foundation

- District Mineral Foundations (DMFs) are non-profit trusts established by state governments in districts affected by mining activities.
- Legal Basis: Introduced in 2015 through an amendment to the Mines and Minerals (Development and Regulation) Act, 1957.
- Objective: To work for the interest and benefit of people and areas impacted by mining-related operations.
- Funding: DMFs are funded by a portion of the royalty paid by mining leaseholders, contributions from the state government’s budget, and donations from private companies.
- Implementation: DMFs are governed by a Board of Trustees, which includes representatives from the state government, district administration, local communities, and experts. The Board formulates and approves projects under PMKKKY and other schemes.

# Chapter- 9

## Kurukshetra August 2024: GIST OF KURUSHETRA - Enhancing Innovation in Rural India

### Chapter 1- Making Lakhpati Didis

#### Lakhpati Didi Initiative:

- It is an initiative of the Ministry of Rural Development that strives to empower women associated with Self-Help Groups (SHG) to have an annual household income exceeding Rs. 1,00,000 through adopting sustainable livelihood practices.
- It was launched in 2023. With an initial target set for 2 crore Lakhpati Didis, the program target has been enhanced to 3 crores during 2024-25.

#### Overview of the Initiative:

- The Lakhpati Didi initiative supports over 94 lakh Self-Help Groups (SHGs) with 10 crore women, empowering them to achieve an annual household income exceeding Rs. 1,00,000.
- These women inspire others through sustainable livelihood practices and achieving a decent standard of life.
- SHGs provide support through collective action, financial literacy, and skill development for entrepreneurial ventures.
- The initiative facilitates diverse livelihood activities by coordinating across Government departments, Panchayati Raj Institutions, Private sector, and Market players with focused planning, implementation, and monitoring at all levels.

#### Strategy of the Scheme:

- **Deepen, Strengthen, and Expand Livelihood Options:** Households will be facilitated in diversifying income-generating activities. Trained Community Resource Persons will use a tool for Livelihood Planning and upload data to a digital platform for consolidation and resource linkages.
- **Capacity Building:** A Cascade Training Strategy will be used to train and support Potential Lakhpati Didis (SHG members) across India. Experts will train Resource Persons, who will then train Master Trainers in each state and union territory. These Master Trainers will train Community Resource Persons selected by State Missions to guide the identified Lakhpati Didis.
- **Financial Assistance:** DAY-NRLM will help mobilize financial support for SHG women and their federations, providing a platform for their growth.
- **Aajeevika Register:** SHG members are involved in diverse livelihood activities like agriculture, livestock rearing, handicrafts, and more. The Aajeevika Register tracks these activities at the village level to enhance income and measure progress. Maintained at the Village Organization (VO) level, it will be updated every six months to aid planning and track the progress of Lakhpati Didis.

**INTERIM BUDGET 2024-25**

**Viksit Bharat by 2047**

**Momentum to Nari Shakti**

- 30 crore Mudra Yojana loans disbursed to women entrepreneurs
- Female enrolment in higher education increased by 28 per cent in 10 years
- Female constitute 43 per cent of enrolment in STEM courses, one of the highest in the world
- 1 crore women assisted by 83 lakh SHGs to become Lakhpati Didis

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#### Financial Assistance:

- **Revolving Fund (RF):** A savings fund within a Self Help Group (SHG) where members contribute

regularly and lend to each other for urgent needs, fostering ownership and financial habits. Each SHG typically receives Rs. 20,000 to Rs. 30,000 for internal lending.

- **Vulnerability Reduction Fund (VRF):** Provided to Village Organisations (VOs) via Cluster Level Federations to address vulnerabilities like food insecurity and health risks. Each VO gets Rs. 1,50,000 for member livelihoods and collective activities, disbursed based on Micro Credit Plans (MCPs) and Vulnerability Reduction plans.
- **Community Investment Fund (CIF):** Enhances the creditworthiness of community institutions and empowers women in financial management. SHG federations lend up to Rs. 2.50 lakh per SHG for various socio-economic activities, distributed through Cluster Level Federations or Village Organizations.
- **Viability Gap Fund (VGF):** Supports Cluster Level Federations (CLFs) in covering operational costs until they achieve 100% Operational Self-Sufficiency. Provides financial assistance for three years to help CLFs reach financial sustainability.
- **Financial Inclusion:** Engages SHG members with financial regulators and commercial banks through workshops, forums, and capacity-building programs to empower them as financially established individuals, referred to as "Lakshpati Didis".
- **Women Producer Groups (PGs)** can receive financial support of Rs. 2 Lakh per group for working capital and infrastructure, enabling them to aggregate commodities and achieve better price negotiation and higher profits in the market. This support aims to sustain and enhance the business activities of these small-sized, unregistered entities at the village level.
- **Producer Enterprises (PEs):** Promote large Producer Enterprises for economies of scale, better market access, and professional management. State-level federations are encouraged.
- **Women Farmer Producer Organizations (FPOs):** Partnering with the Ministry of Agriculture, Rs. 15 lakh equity grants are provided over three years to each FPO.
- **Community Enterprise Fund (CEF):** Schemes like SVEP and OSF support SHG members in developing and expanding enterprises. SVEP has a budget of Rs. 6.5 crore per block, creating Block Resource Centers and placing Community Resource Persons for assistance.
- **Aajeevika Grameen Express Yojana (AGEY):** Provides subsidized loans for rural transport services. Individuals can get loans up to Rs. 6.5 lakhs, and groups up to Rs. 8.5 lakhs.
- **One Stop Facility (OSF):** Block-level centers provide business development services. Support is Rs. 2.5 lakh for individual enterprises and Rs. 5 lakh for group enterprises with a 10% entrepreneur contribution.
- **Micro Enterprise Development (MED):** Supports non-farm sector enterprises for SHGs with a Rs. 20 lakh budget per block, aiding at least 200 enterprises.
- **Incubator:** Aims to scale up 150 women-owned enterprises in each state/UT with Rs. 10.70 crore per state for manufacturing and service sectors.
- **Cluster Promotion:** Promotes artisan and sectoral clusters with Rs. 5 crore per cluster for interventions like design development, market development, and technology upgradation.
- **Capitalization Support for SHGs:** Includes collateral-free loans up to Rs. 20 lakh per SHG, interest subvention, overdraft limits, and the Women Enterprise Acceleration Fund for credit guarantees and loans.
- **Marketing Support:** Market linkages through buyer-seller meets, e-commerce platforms (e.g., Amazon, Flipkart, Meesho), and partnerships like Patanjali for SHG products.

## Chapter 2- Adoption of Digital Technologies in Rural India

- India's rural landscape has witnessed a remarkable transformation in recent years, driven by the rapid adoption of digital technologies. From education and healthcare to agriculture and economic empowerment, the integration of cutting-edge digital solutions has the potential to bridge the urban-rural divide and uplift the lives of millions living in the hinterlands.

### Revolutionizing Education: Bridging the Learning Gap

- The COVID-19 pandemic has underscored the importance of digital education, particularly in rural India.
- The government's flagship initiatives like the PM e-Vidya program and the Pradhan Mantri Digital Saksharta Abhiyan (PMGDISHA) have been instrumental in providing access to online learning resources and digital literacy training to students and adults in remote areas.
- According to a report by the Ministry of Education, the PMGDISHA scheme has trained over 5.5 crore rural citizens in digital skills since its inception in 2017, empowering them to navigate the digital landscape.

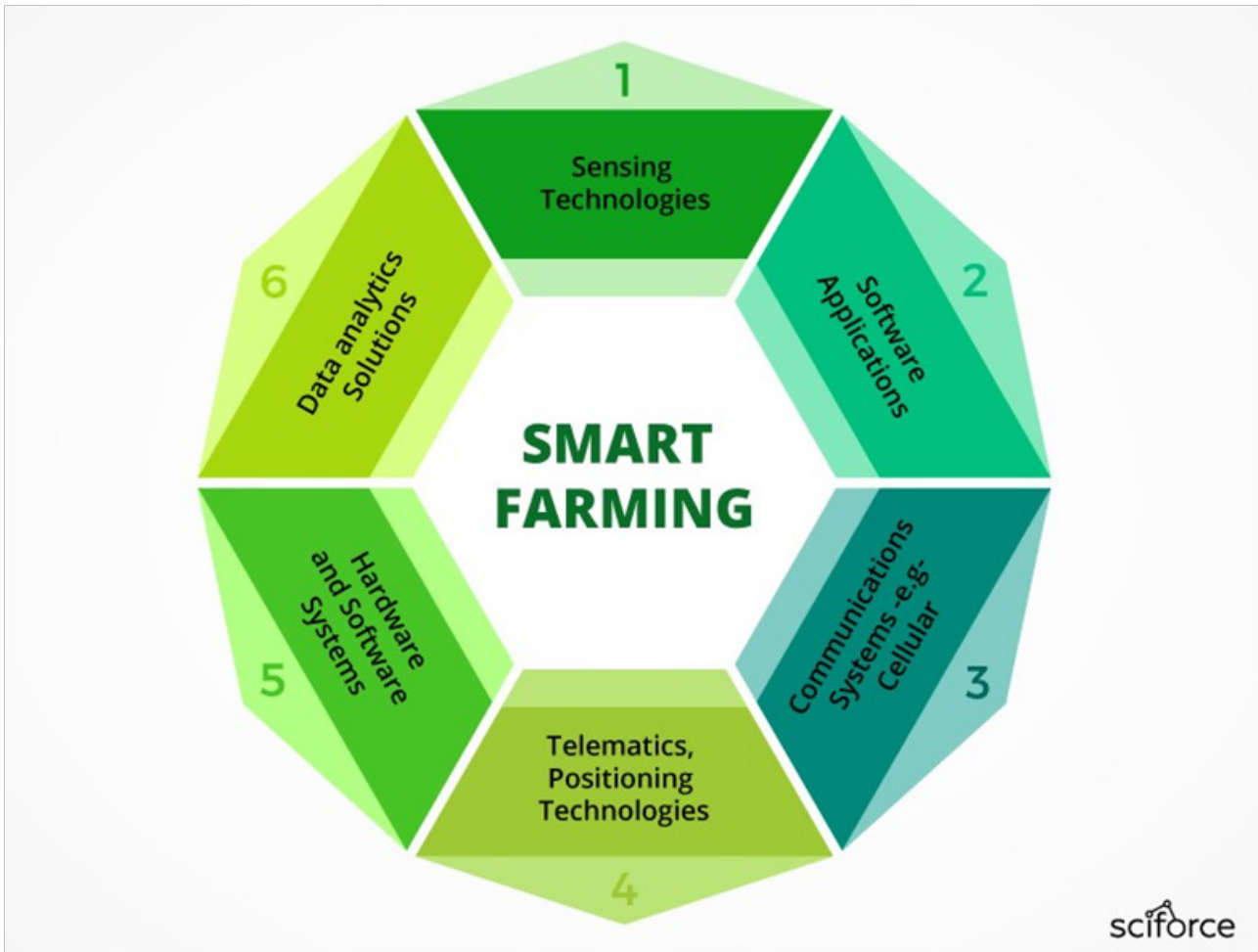


### Transforming Healthcare: Telemedicine and Digital Diagnostics

- The adoption of telemedicine and digital diagnostics has revolutionized healthcare delivery in rural India. The Ayushman Bharat Digital Mission (ABDM) has facilitated the creation of a unified digital health infrastructure, enabling seamless access to medical services and electronic health records.
- A study by the National Health Authority reveals that the utilization of telemedicine services in rural areas increased by over 700% during the pandemic, underscoring the transformative potential of these technologies in addressing the challenges of geographic barriers and limited access to specialized healthcare.

### Empowering Agriculture: Precision Farming and Market Linkages

- Digital technologies have transformed the agricultural landscape in rural India. Initiatives like the Digital India Land Records Modernization Programme (DILRMP) and the National Agriculture Market (e-NAM) platform have empowered farmers with access to land records, weather forecasts, and online marketplaces.
- According to a report by the Ministry of Agriculture and Farmers' Welfare, the adoption of precision farming techniques, enabled by digital tools and sensors, has led to a 20-30% increase in crop yields in several states, improving the livelihoods of rural communities.



### Driving Economic Empowerment: Digital Financial Inclusion

- The push for digital financial services has been a game-changer for rural communities. Schemes like the Pradhan Mantri Jan Dhan Yojana (PMJDY) and the Unified Payments Interface (UPI) have facilitated seamless access to banking, credit, and digital payments.
- A study by the Reserve Bank of India indicates that the percentage of rural adults with a bank account increased from 53% in 2014 to 80% in 2021, reflecting the transformative impact of these initiatives in promoting financial inclusion and economic empowerment.



### Empowering Women: Digital Entrepreneurship and Skilling

- Digital technologies have also empowered rural women by providing access to entrepreneurial opportunities and skill development programs.
- Initiatives like the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) and the Mahila E-Haat platform have enabled women to leverage digital tools for their economic and social upliftment, fostering a more inclusive and equitable digital ecosystem.
- Government schemes like the BharatNet project, the Common Service Centres (CSCs), and the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) are working towards bridging the digital divide and creating a more inclusive digital ecosystem in rural areas. These initiatives aim to provide high-speed internet connectivity, access to digital services, and digital literacy training to empower rural communities.

### Challenges and the Way Forward

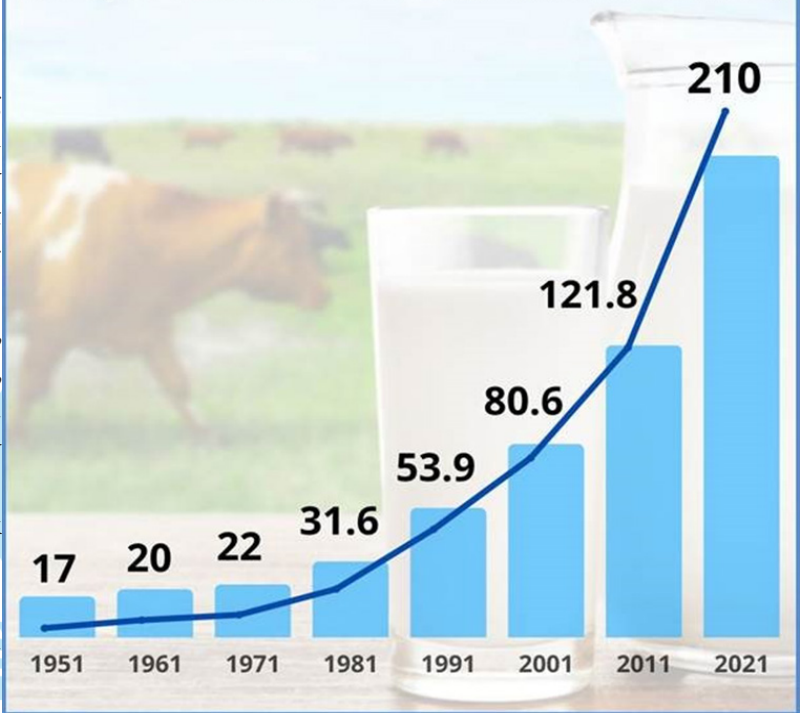
- While the progress has been commendable, challenges such as infrastructure gaps, digital literacy, and cultural barriers continue to hinder the widespread adoption of digital technologies in rural India. Sustained efforts

by the government, private sector, and civil society organizations are crucial to address these challenges and ensure that the benefits of digital transformation reach the last mile. As India marches towards its vision of a digitally empowered nation, the adoption of digital technologies in rural areas holds the key to unlocking the true potential of inclusive development and sustainable growth. By leveraging the power of digital solutions, rural India can unleash a new era of prosperity, empowerment, and social transformation.

### Chapter 3- Rebooting Operation Flood through Innovation

- India's dairy industry has seen significant growth, with milk production increasing at a CAGR of 5.85% between 2014-15 and 2022-23. India produced 230.58 million tons of milk in 2022-23, leading the world with a 24.64% share of global milk output. However, productivity remains low compared to affluent countries, with India's cows producing less milk on average.
- Operation Flood, launched in 1970, had three goals: raising rural incomes, increasing milk production, and supplying affordable milk. It successfully boosted milk production but still faces challenges in rural incomes and milk affordability.
- Despite leading in production, India's per capita milk consumption lags behind many developed nations.
- Several issues persist, including low productivity, poor cattle management, and quality concerns, with significant portions of milk being adulterated. To address these challenges, a second phase of Operation Flood, driven by innovation and technology, is essential.
- Technological advancements such as automated milking systems, data-driven decision-making, and precision feeding can significantly improve efficiency and sustainability in dairy farming. These technologies help monitor animal health, optimize nutrition, and enhance milk production.
- Additionally, sustainable practices like smart barns and biogas production can reduce the dairy industry's environmental impact.
- The integration of AI and robotics in dairy farming promises further improvements in herd management and productivity. Digitalization and automation can help manage large herds more effectively, reducing labor and operational costs.
- The future of dairy farming lies in embracing these innovations to ensure sustainable growth, improve rural incomes, and provide affordable, high-quality milk to consumers. This will also help address broader environmental concerns by reducing greenhouse gas emissions associated with dairy farming.

**Milk production in India (in Million tonnes)**



### Chapter 4-Rural India: Innovation for Inclusiveness

- Inclusiveness is key to development, requiring not just availability but seamless access to facilities and resources. Innovations have greatly reduced the development gap between urban and rural areas in India. This article explores how innovation fosters inclusiveness in rural India.

#### Innovation for Development

- The United Nations defines innovation for development as using modern concepts and tools to create impactful, resilient, and inclusive societies.
- India has improved its Global Innovation Index (GII) ranking from 48 in 2020 to 40 in 2023. With innovation as a central theme, India has strengthened scientific and technological capabilities, enhancing inclusive development.

## Telecommunications: Bridging the Divide

- The number of telephone connections in India surged from 41 million to 943 million between 2001-2012, with mobile phones constituting 911 million. Rural tele-density grew from 1.7% in 2004 to 58.5% in 2023.
- The PM-WANI scheme further increases internet penetration, reflecting in the lives of rural populations and nurturing inclusiveness.

## Healthcare: Accessible Quality Care

- Rural areas often lack quality healthcare due to the preference of professionals for urban locations.
- The e-Sanjeevani telemedicine service has addressed this, with over 241 million consultations since its 2019 launch. This service has provided accessible expert health advice to rural populations, significantly benefiting women and senior citizens.

## Education: Equal Opportunities

- Urban-rural education disparity affects social equality. Increased internet penetration and educational apps have given rural children access to quality resources. The pandemic accelerated digital learning adoption. AI integration offers customized learning, making high-quality materials accessible to rural students and educators.

## Banking and Finance: Inclusive Services

- Access to banking and credit has improved with Aadhaar-based services. Aadhaar's database and biometric authentication enable better credit scoring and risk assessment for underserved populations.
- Digital payment solutions and agent banking have enhanced financial inclusion, fostering economic growth in rural areas.

## Agriculture: Boosting Productivity

- About 70% of rural households depend on agriculture. Technological advancements like AI-enabled drones have improved farming efficiency.
- Government subsidies support drone use, and digitization of farm insurance has expedited claims resolution. Mobile apps provide crucial information on insurance, weather, and market prices.

## Access to Clean Water: Sustainable Solutions

- Access to safe drinking water is critical. Startups like Boon have introduced solar-powered water ATMs with IoT-based monitoring, improving water accessibility.
- Innovations like the Bhujal app help measure groundwater levels, aiding better water management and planning.

**PM-WANI**  
( Wi-Fi Access Network Interface )

**TOWARDS WI-FI ACCESS FOR ALL**

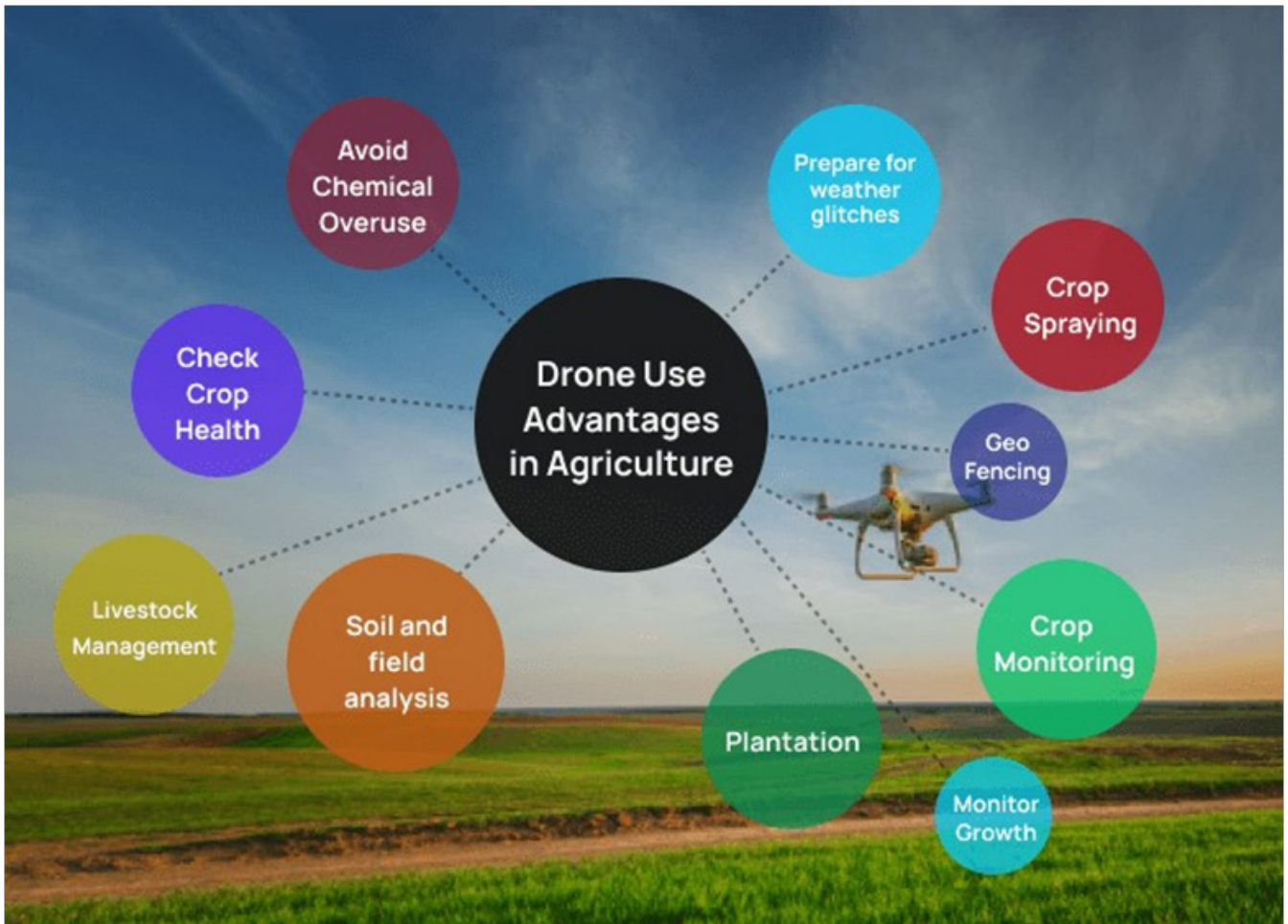
**Modi government approves PM-WANI scheme that aims to proliferate public Wi-Fi availability across the length and breadth of India.**

**Features**

- Public Wi-Fi networks would be set up by Public Data Office Aggregators (PDOAs) to provide public Wi-Fi hotspots through Public Data Offices (PDOs).
- An App provider will register users and discover WANI compliant Wi-Fi hotspots in the nearby area and display the same within the App for accessing the internet service.
- There will be no license fee.

**Digital India**  
Power To Empower

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### Conclusion

Innovations in rural India align with sustainable development goals (SDGs) and promote inclusive growth. Robust digital infrastructure is crucial for sustaining development, and mitigating urban bias in large firms is essential to ensure rural inclusiveness. Through continuous innovation, rural India can achieve greater inclusiveness and development.

### UPSC Mains Practice Questions-(Around 250 words)

Q1. Discuss the role of innovation in fostering inclusiveness in rural India. Highlight key sectors where technological advancements have significantly impacted rural development, and examine the challenges that need to be addressed to sustain this growth.

Q2. Discuss how technological innovations can revitalize India's dairy sector, akin to Operation Flood. Explain their role in boosting productivity, rural incomes, and environmental sustainability, with examples and suggested reforms.

Q3. Critically examine the Lakhpati Didi scheme launched by the Ministry of Rural Development. Discuss its potential in empowering rural women and achieving sustainable development in rural India.





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