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(Magazine)

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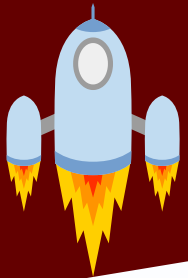
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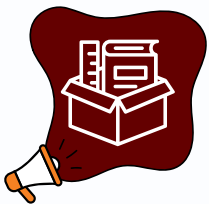**27 Nov 2023**

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JEWELS OF THE MONTH

ECONOMY:

ENVIRONMENT & GEOGRAPHY

SOCIAL ISSUES

SCIENCE & TECHNOLOGY

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TEST YOUR QUEST ✌

(A MYSTERY INSIDE!!!)

JEWELS OF THE MONTH

G20 SUMMIT

SOURCE: G20, THE INDIAN EXPRESS

WHY IN NEWS?

➤ **Leaders** from the **world's most influential countries** are converging in **New Delhi** for the **18th G20 Summit of Heads of State and Government** scheduled for **September 9-10**.

➤ This summit marks the **conclusion of India's year-long presidency of the G20**, and it will end with the **approval of a G20 Leaders' Declaration**.

➤ This declaration will express the **commitment of the participating leaders** to the discussed and agreed-upon priorities.

G20

ORIGIN:

➤ The **G20 originated** in 1999 in response to the **Asian financial crisis**, serving as a **platform for Finance Ministers** and **Central Bank Governors** to deliberate on **worldwide economic and financial matters.**

➤ Following the **global economic and financial crisis of 2007**, it **was elevated to include Heads of State/Government,** and in 2009, it was officially recognized as the **foremost forum for international economic collaboration.**

MEMBER COUNTRIES:

➤ The **G20, or Group of Twenty,** is an **international forum** made up of **19 nations**, which are **Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, United States, and the European Union.**

What is the G20?

The Group of 20 is made up of 19 of the world's biggest economies, as well as the European Union. It formed in 1999 to discuss policy matters and financial stability.

ARGENTINA AUSTRALIA BRAZIL CANADA CHINA FRANCE

GERMANY INDIA INDONESIA ITALY JAPAN MEXICO

RUSSIA SAUDI ARABIA SOUTH AFRICA SOUTH KOREA TURKEY UK

US EU

These countries account for **85%** of global GDP

2/3 of the world's population is from these countries

PRESIDENCY AND TROIKA:

➤ The **presidency** of the G20 **rotates every year** among members.

➤ The country **currently holding the presidency**, along with the **preceding and succeeding presidency-holders,** collaborates as the **'Troika'** to maintain the continuity of the G20's agenda.

FUNCTIONING OF G20:

The **G20** is comprised of **two key tracks**: **the Finance Track** and the **Sherpa Track**.

The **Finance Track** is led by **Finance Ministers** and **Central Bank Governors** from member nations.

The **Sherpa Track**, on the other hand, is directed by **the Sherpas of member countries**, who act as **personal envoys** of their **respective leaders**.

The **Sherpa Track** supervises the **work of 13 Working Groups**, **2 Initiatives (Research Innovation Initiative Gathering and G20 Empower)**, and numerous Engagement Groups.

18th G20 SUMMIT and INDIA's PRESIDENCY

➤ India **currently holds** the **G20 Presidency** from **December 1, 2022, to November 30, 2023**. The final New Delhi Summit in September of the following year will host an unprecedented 43 Heads of Delegations.

➤ A **new working group** on **Disaster Risk Reduction** will be established under India's Presidency.

➤ **India's special invitee guest** countries are **Bangladesh, Egypt, Mauritius, Netherlands, Nigeria**, **Oman, Singapore, Spain and UAE**.

➤ **G-20's invited international organisations** are **UN, IMF, World Bank, WHO, WTO, ILO, FSB, OECD, AU Chair, NEPAD Chair, ASEAN Chair, ADB, ISA and CDRI**.

"India's G20 Presidency will work to promote this universal sense of one-ness. Hence our theme - 'One Earth, One Family, One Future'" – PM Narendra Modi

INDIA'S G20 PRIORITIES

✦ **Climate Change & Sustainability:**

Promoting the **LiFE (Lifestyle for Environment) movement** to encourage environmentally-conscious practices.

It is striving to **launch transformative initiatives** for a cleaner, more sustainable future during the **"Amrit Kaal" period**, spanning India's **75th to 100th independence anniversary**, for a **modern, inclusive, and prosperous society.**

✦ **Accelerated, Inclusive & Resilient Growth:**

Integration of **MSMEs in global trade**, advocating **labour rights**, **global skills gap**, **agriculture value chains.**

THEME: The theme of **India's G20 Presidency**, *"Vasudhaiva Kutumbakam"* or "One Earth · One Family · One Future," is derived from the *ancient Sanskrit text of the Maha Upanishad.*

➕ **Progress on Sustainable Development Goals (SDGs):**
Focusing on **reaffirming G20's c**ommitment to achieving the SDG targets by 2030.Acknowledging the **impact of COVID-19 on the 2030 Agenda**.

➕ **Technological Transformation & Digital Public Infrastructure:**
Facilitating knowledge-sharing in digital public infrastructure, financial inclusion, and tech-enabled development across various sectors.

➕ **Reformed Multilateralism**:
Advocating **for more accountable, inclusive, just, equitable**, **and representative multilateral institutions** that are suitable for addressing 21st-century challenges.

➕ **Women-led Development:** Promoting **women's empowerment and representation**.

CULTURE CORRIDOR AT G20

The **Culture Corridor - G20 Digital Museum** was conceptualized by the **Ministry of Culture** to represent and **honour the common heritage of G20 members and invited nations**. This project is based on the **Culture Working Group's (CWG)** and India's G20 theme, **"Vasudhaiva Kutumbakam."**

CULTURE CORRIDOR:

➢ An international initiative called the **Culture Corridor - G20 Digital Museum** was planned for the G20 Leaders' Summit in India. On September 9, 2023, this exhibition was presented **at Bharatmandapam**, the location of the G20 Leaders' Summit, and then made available to the general public.

➢ This **Culture Corridor - G20 Digital Museum**, which is intended to be a **G20 legacy project**, is a first-of-its-kind collaborative project that has invited involvement from G20 countries to establish a **"museum in the making."**

➢ **The Culture Corridor will provide an effective forum for advancing information exchange, inclusion, and equality, as well as for building a feeling of shared identity. It will also serves to promote understanding and appreciation of various cultural manifestations.**

ITEMS AT DISPLAY:

➢ **RIGVEDA:** The Rigveda is one of the **oldest religious scriptures** in the world and is said to have been written more than 3**,000 years ago** in ancient India.

➢ **ASHTADHYAYI**: An old **Sanskrit grammar treatise** called "Ashtadhyayi" was written by the **Indian grammarian Panini**. It is one of the most important and influential books on grammar and linguistics in both the history of the globe and India.

➢ **MONA LISA: Leonardo da Vinci**, a well-known Italian painter, created the "Mona Lisa." He is regarded as one of the **greatest Renaissance artists**.

➢ **GUTENBERG BIBLE:** The **42-line Bible,** sometimes referred to as the Gutenberg Bible, is one of the most well-known and important books to have ever been printed. **Johannes Gutenberg**, a German blacksmith, goldsmith, printer, and publisher, is credited with printing the Gutenberg Bible.

➢ **MEXICO'S COATLICUE:** In **Aztec mythology**, Coatlicue is a significant deity whose name is frequently translated as **"Serpent Skirt"** or "Serpent Her Skirt."

➢ **MAGNA CARTA OF UK**: The Magna Carta, also known as **"Magna Carta Libertatum"** (the Great Charter of Liberties), is a historical document that was essential in the creation of **British constitutional law and individual rights.**

> ➤ **FAHUA LIDDED JAR FROM CHINA**: Known also as **"Fahua zhiwen,"** the Fahua lidded jar is a kind of **ceramic vase** that was created in China during the **Yuan dynasty (1271–1368**) and later rose to prominence during the **Ming dynasty (1368–1644).**

G20 LEADERS SUMMIT ADOPT NEW DELHI DECLARATION

- ➤ The **G20 summit**, held under **India's presidency** and chaired by Prime Minister Narendra Modi, has officially embraced the **Delhi Declaration**.
- ➤ **PM Modi** commended the **Sherpas and ministers** for their efforts in establishing a **consensus amongst member** nations during the two-day summit in New Delhi, where leaders from the world's major economies gathered.
- ➤ **Peace and Conflict Resolution:**
    - ✓ Express deep concern about the human **suffering caused by wars and conflicts, particularly addressing the situation in Ukraine.**
    - ✓ Emphasize adherence to the **UN Charter's principles,** including refraining from using force for territorial gains.

- ➤ **Combating Terrorism and Money Laundering:**
    - ✓ Condemn terrorism in all its forms, including those **driven by xenophobia, racism, or religious extremism.**
    - ✓ Address concerns about the **illegal trade of small arms and light weapons, promoting international collaboration** in tackling this issue.
    - ✓ Commit to supporting the **resource needs of the Financial Action Task Force (FATF)** and its **regional bodies to combat money laundering** and **terrorist financing**.
- ➤ **Economy and Climate:**
    - ✓ Urge reforms of **international financial institutions** and efforts to manage debt **vulnerabilities in low and middle-income countries.**
    - ✓ Plan to **exchange tax-related information on cryptocurrency assets by 2027.**
- ➤ **Global Economic Growth:**
    - ✓ Emphasize the **importance of well-coordinated monetary, fiscal, financial, and structural policies**.
    - ✓ Welcome initiatives by the **Financial Stability Board (FSB)** and other bodies to learn from recent banking challenges.
- ➤ **Multilateral Development Banks:**
    - ✓ Stress the importance of improving **multilateral development banks (MDBs)** for more effective results.
    - ✓ Support the implementation of recommendations from the **G20 Independent Review of MDBs Capital Adequacy Frameworks (CAFs).**
- ➤ **Cross-border Payments:**
    - ✓ Reaffirm the commitment to achieving global goals for faster, more affordable, and **transparent cross-border payments by 2027.**
    - ✓ Welcome discussions on **the potential impact of Central Bank Digital Currencies (CBDCs)** on cross-border payments and the international monetary system.

SUMMARY OF KEY EVENTS OF G20

EVENT	*OUTCOME*
Permanent membership status to African Union in G20	In a historic move, the G20 grants African Union permanent membership, promoting inclusivity.
G20 Delhi leaders' declaration	Prime Minister Modi proudly declares G20 New Delhi Leaders' Declaration, highlighting unity and commitment.
Ukraine-Russia conflict was addressed	The declaration emphasized the Russia-Ukraine conflict's impact on global stability.
Global Biofuel Alliancelaunch	PM Modi initiated the Global Biofuel Alliance, urging G20 nations to adopt a global 20% ethanol-petrol blending standard.
India-Middle East-Europe EconomicCorridor	Leaders launched the India-Middle East-Europe Economic Corridor, a substantial rail and shipping connectivity initiative, promoting economic integration among different regions.
Commitment to WTO Reforms	G20 leaders affirmed their dedication to overhaul the WTO dispute resolution system by 2024.
Commitment to Cross-Border **Payments**	Promoting faster, transparent, and inclusive cross-border payments

WAY FORWARD

- ⤵ **Leading the G20** presents a year-long chance to **demonstrate India's significance** as a **diplomatic and economic powerhouse**, as well as to promote increased investment and trade with the **world's most populous nation**.
- ⤵ By convening meetings for **Global South nations** in conjunction with G20 gatherings, India has assumed the role of **representing the previously marginalized Global South**, giving them a voice on the global stage.
- ⤵ India has officially **transferred the G20 presidency to Brazil**. The upcoming G20 summit in 2024 will be hosted in **Rio de Janeiro**, **Brazil**, with President Luiz Inacio Lula da Silva assuming the **role of presidency.**

WORLD HERITAGE SITES

SOURCE: THE HINDU, THE HINDU

WHY IN NEWS?

- ➢ **Santiniketan on UNESCO'S world Heritage list**
    - ✓ Santiniketan, a place where **Nobel laureate Rabindranath Tagore** established Visva-BharatiUniversity over a century ago, has **received the honour of being included in UNESCO's WorldHeritage List.**
    - ✓ This decision was made **during the 45th session of the World Heritage Committee, whichtook place in Saudi Arabia.**

- ➢ **World Heritage Tag to Hoysala Temples**
    - ✓ The UNESCO World Heritage Sites **designation was granted to the Hoysala temples located in Belur, Halebid, and Somanathapur in Karnataka**.
    - ✓ The Chennakeshava temple in Belur and the Hoysaleshwara temple in Halebid, both situated in Hassan district, **had been under UNESCO's tentative list since 2014.**
    - ✓ Subsequently, **the Keshava temple in Somanathapur**, located in Mysuru district, **was added to the tentative list.**

HISTORY OF SANTINIKETAN:

➢ **Shantiniketan** is a locality situated within the Bolpur town, part of the Bolpur subdivision in the **Birbhum district of West Bengal,** India.

➢ This area was initially founded **by Maharshi Devendranath Tagore** and subsequently developed and expanded by his son, Rabindranath Tagore.

➢ **Rabindranath Tagore's** first encounter with Shantiniketan occurred on January 27, 1878, when he was a youthful 17-year-old.

➢ In 1888, Rabindranath's father, Debendranath Tagore, made a significant gesture by dedicating the entire property to the establishment of a **Brahma Vidyalaya through** a formal trust deed. This marked the beginning of the institution's journey.

➢ In **1901**, Rabindranath initiated a **Brahmacharya ashrama** at the location, and it later became known as **Patha Bhavana** from the **year 1925 onwards**.

DELIGHTED THAT SANTINIKETAN, AN EMBODIMENT OF GURUDEV TAGORE'S VISION AND INDIA'S RICH CULTURAL HERITAGE, HAS BEEN INSCRIBED ON THE @UNESCO WORLD HERITAGE LIST.

➢ In 1913, **Rabindranath Tagore** achieved international recognition by winning **the Nobel Prize in Literature**, a remarkable achievement that added to the **illustrious legacy of the Tagore family.**

➢ The Tagore family had long been prominent contributors to the **cultural and social enrichment of Bengal,** spanning various fields of activity.

➢ In **1921,** Rabindranath Tagore took a significant step by **founding Visva Bharati**, which was later designated as a **central university** and declared **an institute of national importance in 1951**.

➢ This institution played a pivotal role in fostering education, culture, and art in India.

RABINDRANATH TAGORE AND HIS IDEA OF EDUCATION:

➢ **HOLISTIC EDUCATION:**
  • Since the inception of its formation, Santiniketan was thoughtfully shaped by Rabindranath Tagore in accordance with the **ideals of humanism, internationalism,** and a commitment to fostering a **sustainable environment.**

➢ **FREEDOM OF EXPRESSION:**
  • Tagore aimed to create an educational atmosphere at Santiniketan where students could experience a **sense of freedom**, even within the structured confines of a school.

  • He personally understood the **challenges of traditional classroom settings**, having left school due to feeling stifled and unable to think freely within the confines of four walls.

- ➤ **ARTS AND SCIENCES:**
  - **Visva Bharati** University provides a diverse range of academic programs spanning various fields, **including humanities, social sciences, natural sciences, fine arts**, **music, performing arts, education, agricultural science, and rural reconstruction**.
  - Among its academic offerings, the university's art college, known as **Kala Bhavan,** has earned a **global reputation** as one of the premier institutions for art education.
- ➤ **SPIRITUAL GROWTH:**
  - Rabindranath Tagore's educational philosophy emphasized that the purpose of education should be to nurture spiritual growth and cultivate a deep sense of inner harmony in individuals.
- ➤ **CONNECTION WITH NATURE:**
  - The curriculum at Santiniketan included **nature walks and field trips,** and it placed a strong emphasis on observing and **understanding natural phenomena**. Students were actively encouraged to study the life cycles of insects, birds, and plants.
  - In addition to conventional subjects, vocational education was also given importance.
- ➤ **FLEXIBLE CLASSROOM:**
  - Adaptable class timetables were designed to accommodate changes in weather conditions and the seasonal festivals that Rabindranath Tagore personally devised for the students.

ABOUT THE HOYSALA TEMPLES:

- ➤ **CHENNAKESAVA TEMPLE, BELUR**
  - The Chennakeshava Temple, also known as **Keshava, Kesava, or Vijayanarayana** Temple.
  - It is a 12th-century Hindu temple located in the **Hassan district of Karnataka**, India.
  - It was **commissioned by King Vishnuvardhana in 1117 CE** and is **situated on the banks of the Yagachi River in Belur**, which was an early **capital of the Hoysala Empire**.

  - The temple is **dedicated to Chennakeshava**, a form of the Hindu god Vishnu.
  - According to Dhaky, a renowned scholar of Indian temple architecture and temple history, this temple represents a period deep spiritual devotion to Sri Vaishnavism, particularly under the influence of Ramanujacharya.

> ## HOYSALESWARA TEMPLE, HALEBID

- The Hoysaleswara Temple, also known as the **Halebidu Temple**, is a **12th-century Hindu temple in the town of Halebidu, located in the state of Karnataka**, India.

- This magnificent temple is **dedicated to Lord Shiva** and is **the largest monument in Halebidu,** which was once the **capital of the Hoysala Empire**.
- It was commissioned by King Vishnuvardhana of the Hoysala Empire and is situated by a large man-made lake.
- The Hoysaleswara Temple is unique as it is a twin-temple, featuring Hoysaleswara and Santaleswara Shiva lingas, representing both the masculine and feminine aspects of Lord Shiva.

> ## CHENNAKESAVA TEMPLE, SOMANATHPURA

- The Chennakesava Temple, also known as **Chennakeshava Temple or Keshava Temple.**

- It is a Hindu temple **dedicated to Lord Vishnu and situated on the banks of the River Kaveri in** Somanathapura, Karnataka, India.
- This temple, with its rich architectural and cultural significance, was consecrated in the year 1258 CE by Somanatha Dandanayaka, a military general in the service of King Narasimha III of the Hoysala dynasty.

BRIEF HISTORY OF HOYSALA ARCHITECTURE:

- The Vesara architectural style, which had its **origins during the time of the Badami Chalukyas in the 7th century,**
- Later it underwent **significant development and refinement during the Western Chalukya era in the 11th century.**

- The unique characteristics of Hoysala architecture started taking shape during the reign of King Vishnuvardhana (circa 1111–1152 CE).
- The construction of the Chennakesava Temple in Belur can be considered the inception of this architectural style.
- However, its peak development and refinement were achieved during the rule of King Ballala II (1173–1220 CE) and King Veera Ballala III (1292–1343 CE).

VESARA ARCHITECTURE:

Features:

1. **STELLATE PLAN:**

    One of the standout characteristics of Hoysala temples is their **unique star-shaped or stellate base,** upon which the temple's main structure is built.

    This base is characterized **by numerous points or projections**, lending the temples an enchanting and captivating appearance.

2. **VIMANA:**

    The vimana, which refers to the **tower of Hoysala temples**, is typically more modest in terms of height when compared to the towers seen in certain other South Indian temple styles.

    The vimana often adopts a **pyramidal or shikara-like shape.**

3. **INTRICATE CARVINGS:**

    Hoysala temples frequently feature intricate entranceways adorned **with elaborate lintels** and **sculptural embellishments.**

    These doorways often **depict scenes and narratives from Hindu epics** such as the **Ramayana and Mahabharata.**

4. **MANTAPA AND PILLARS:**

    Mantapa is characterized by **two distinct roof types**: **domical ceilings**, which resemble **domes** and are upheld by four pillars, and **square ceilings**, lavishly adorned with mythological depictions.
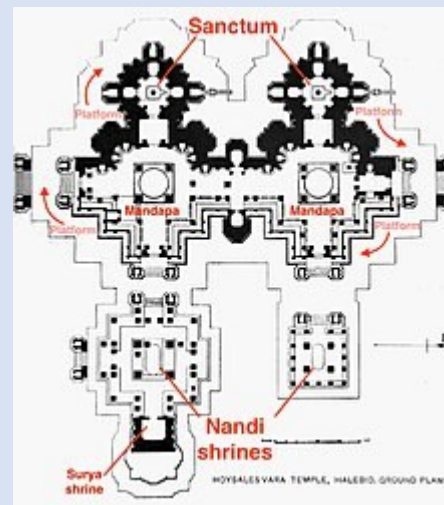

Figure 1RAMAYANA PAINTINGS

Figure 2Figure 2stellate plan

Women Reservation Bill

Source: The Times of India

Why in News?

➢ **President Droupadi Murmu** has **given her assent to the women's reservation bill** that was cleared by **both houses of Parliament during Special Session.**

NARI SHAKTI VANDAN ADHINIYAM BILL 2023

➢ It's indeed a historic moment as the **Nari Shakti Adhiniyam Bill Women's Reservation Bill** of **2023,** officially titled **The Constitution (One Hundred Twenty-Eighth Amendment) Bill, 2023,** has been passed in Parliament with nearly unanimous support.

➢ The **Women's Reservation Bill** in India aims to allocate a **designated portion of seats** in both the Lok Sabha and state legislative assemblies specifically for women.

➢ Its **main objective** is to **bolster the political representation** of women and promote their **active involvement** in **shaping important government decisions** at the highest levels.

KEY FEATURES OF THE BILL:

➢ **Reservation for women:**
  ✓ The Bill reserves **one-third of all seats** for **women in Lok Sabha, state legislative assemblies,** and the **Legislative Assembly of the National Capital Territory of Delhi.** (**Not applicable for Rajya Sabha or Legislative Councils**)
  ✓ This will also apply to the seats reserved for **SCs and STs** in Lok Sabha and state legislatures.

➢ **Commencement of reservation:**
  ✓ The reservation will be **effective after the census** conducted a**fter the commencement of this Bill** has been published.
  ✓ Based on the census, **delimitation** will be undertaken to reserve seats for women.
  ✓ The reservation will be provided for a **period of 15 years**.
  ✓ However, it shall continue till such date **as determined by a law made by Parliament**.

➢ **Rotation of seats:**
  ✓ Seats reserved for women will be **rotated after each delimitation**, as **determined by a law made by Parliament.**

AMENDMENTS Necessary:

⬥ Amendments to **Article 239AA**: Special provisions for Delhi.

⬥ The bill proposed **three new articles**: **330A and 332A** for women's reservation in Lok Sabha and state legislative assemblies, and **334A with a 15-year limit for this policy**.

⬥ To implement reservations, changes are needed in **Article 82 and Article 170(3**) of the Constitution.

⬥ **Article 82** deals with adjusting the number and boundaries of constituencies in Lok Sabha and state Assemblies after each Census.

⬥ **Article 170(3)** pertains to the composition of state Legislative Assemblies.

BACKGROUND:

TIMELINE:

1931: Begum Shah Nawaz and Sarojini Naidu wrote to the British PM, emphasizing women's full political equality in the new Constitution.

1947: The Constituent Assembly rejected women's reservation, believing democracy would ensure representation.

1971: The 1971 Committee on the **Status of Women in India** reported declining political representation of women, with most opposing reservations in legislative bodies but favouring them in local bodies.

1988: The National Perspective Plan for Women proposes implementing reservations for women from the grassroots level in panchayats to the highest level in Parliament.

1992: The **73rd and 74th** amendments to the Indian Constitution mandate:

- One-third of seats reserved for women in Panchayati Raj Institutions.
- One-third of chairperson offices reserved in Panchayati Raj Institutions and urban local bodies.
- One-third of these reserved seats are specifically for Scheduled Caste/Scheduled Tribe women.
- In certain states, there's a 50% reservation for women in local bodies.

1996:

- The **81st Amendment Bill** was introduced proposing 33% reservation in Lok Sabha and State Legislative Assemblies. Failed to pass.
- After the bill was rejected by the House, it was sent to a Joint Parliamentary Committee led by Geeta Mukherjee.
- The committee's report was submitted to the Lok Sabha in December 1996. Unfortunately, the bill became invalid due to the dissolution of the Lok Sabha.

2008: The **108th Amendment Bill** was introduced seeking one-third reservation.

- The **Women's Reservation Bill of 2023** mentions that a committee of influential Members of Parliament reviewed the **Constitution (81st Amendment) Bill**.
- This committee included well-known figures such as **Mamata Banerjee, Sushma Swaraj, Uma Bharti, Sharad Pawar, Nitish Kumar, and Vijay Bhaskar Reddy**.

SIGNIFICANCE OF THE BILL:

1. **Increased credibility of the law-making bodies:**
    Framing policies and legislations for women without ensuring their participation undermines their legitimacy.

2. **Increased political participation of women:**
    - Increased women's representation in decision-making and politics with opportunities equal to men and empowering them.
    - It can bring gender parity in politics.

3. **New perspective to Lawing-making**:
    - Having **gender diversity** in decision-making bodies, including legislatures, often results in improved governance and decision-making because of diverse viewpoints and experiences
    - Enhancing **awareness of gender-related concerns** during the process of creating legislation.
    - **Better addressing of gender violence and crimes related to women.**

4. **Challenging patriarchal mindsets**:
    - Changing stereotypes and perceptions about women's capabilities like they are only fit for pink-collar jobs i.e., beauty industry, nursing,, teaching, secretarial work, or child care.
    - Can help women secure top positions in governance like Prime Minister.

5. **Reduction in criminalisation of politics:**
    In the current Lok Sabha, 159 Members of Parliament have disclosed serious criminal charges against them, including offenses like rape, murder, attempted murder, kidnapping, and crimes against women.

6. **Ethical imperative:**
    Women constitute nearly 50% of the population, they must receive the resources and benefits in proportion to this.

7. **Female voter participation:**
    Increased female voter participation aligns political representation with women's voting trends, which have been consistently rising in elections.

8. Women tend to be **more conscientious**, **effective, and less susceptible to political opportunism.**

9. **Women Role Models and Leadership:**
    Like Indira Gandhi, Sushma Swaraj can inspire women to take up roles in politics.

10. **Women leadership is consistently associated with better performance:**
    An assessment of the Pradhan Mantri Gram Sadak Yojana reveals that constituencies led by women have a significantly lower share of unfinished road projects, with a 22-percentage point difference. Women leadership can raise economic performance by 1.8% every year.

CHALLENGES ASSOCIATED WITH THE BILL:

No OBC representation: The Bill does not offer distinct reservations for OBC women, despite their substantial representation within the female population.

1. No provision for reservation in Rajya Sabha and Legislative Councils.
2. **Less allocation of party tickets:**
   - Despite party constitutions' promises, data indicates that women candidates receive a disproportionately lower number of party tickets, often relying on familial political connections.
   - The idea that women candidates have lower chances of winning elections hinders their selection for party tickets.
3. **Emotionally challenging:** They may experience humiliation, abuse, and threats, which further complicate their participation.
4. **Dual burden:**
   Women still have to decide their priorities between household work and other responsibilities.
5. **Motherhood penalty-**
   Women in most of their prime age spend on family and motherhood-related issues after which they become dependent on others with restricted choices.
6. **Furtherance of gender discrimination:**
   This approach could perpetuate the current gender imbalances by implying that women are not being assessed on their merits and qualifications.
7. **Against the principle of equality:**
   Seat reservations for women could be seen as conflicting with the Constitution's equality assurance.
8. **Fear of proxy representations:**
   There are worries that women might be employed as substitutes by male family members, mirroring the situation seen in panchayats (local governments).
   Ex-**Pradhan Pati**
9. **Shortcomings of existing provisions:**
   Though women have been provided reservations in local governments nearly 3 decades ago, this could not escalate into women's participation in higher levels of government.
10. **Fear of unequal benefits:**
    Even among women those belonging to **affluent sections** might get the benefits.
    Also, women with **lower levels of education** might not get benefitted.

STATUS OF WOMEN REPRESENTATION IN POLITICS IN INDIA:

1. As per the **2022 Global Gender Gap Report**, India is positioned 48th out of 146 countries.
2. At present, **15% of Lok Sabha members** and **13% of Rajya Sabha members are women**.
3. Among political parties with over **10 seats in Lok Sabha**, **42% of BJD MPs and 39% of TMC MPs** are women. In **Rajya Sabha, 17% of INC MPs are women**.
4. The TMC and BJD parties had the highest percentage of female candidates.
5. **Reservations have been increased to 50%** in states such as **Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Kerala, Maharashtra, Orissa, Rajasthan, Tripura, and Uttarakhand in local governments.**
6. **Uttar Pradesh and West Bengal** had the most women parliamentarians, each with eleven representatives, while Maharashtra had eight women MPs in 2019.
7. **Average share of women** MLAs in State legislatures (2008-2018):

Rajasthan: 13.8%	
West Bengal: 12.5%	
Haryana: 12.2%	
Chhattisgarh: 11.9%	
Madhya Pradesh: 11.7%	
Kerala:7.9%	
Andhra Pradesh: 8%	
Karnataka 4.5%	

TELLING NUMBERS
33% promise in LS, but women's representation is low in key positions, professions, sectors
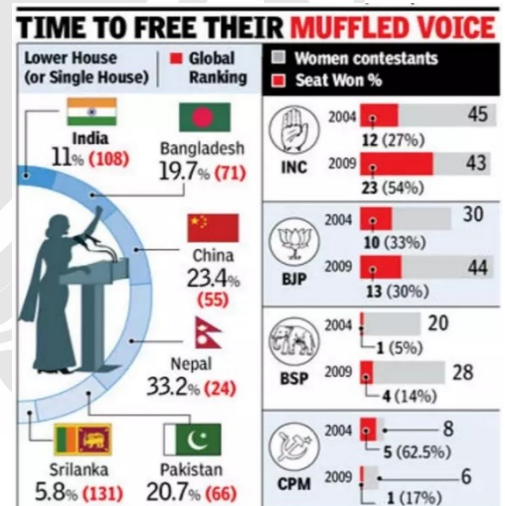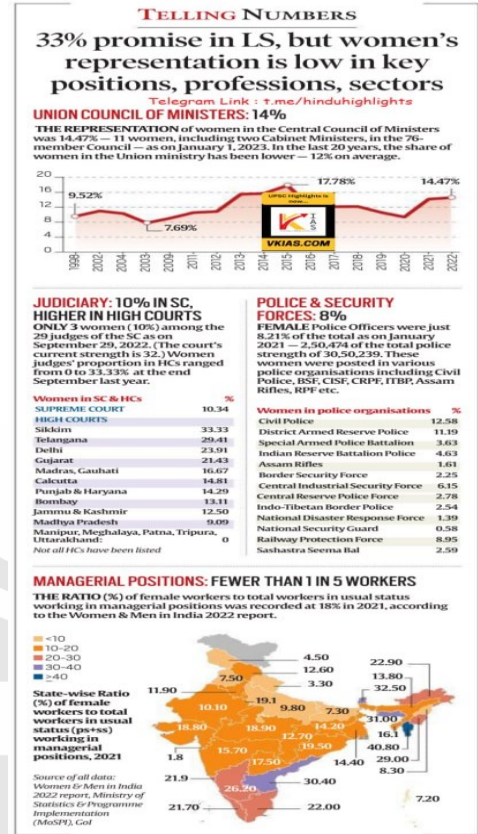
STATUS OF WOMEN REPRESENTATION IN POLITICS GLOBALLY:

- **The average share of women parliamentarians worldwide is around 24%.**

SCANDINAVIAN COUNTRIES:

- As of August 2023, **Finland**, among the Nordic countries, stands out with the **highest number of female prime ministers,** totalling three.
- **Sanna Marin**, the **former Prime Minister of Finland**, made history in 2019 when she was sworn in as **the world's youngest sitting head of state**.
- **ASIA:**
- In South Asia, **Nepal leads in terms of women's political participation**, boasting a **33% representation rate**.
- Among **East Asian nations**, Taiwan holds the top position with the highest proportion of women in Parliament, standing at 38.0%.
- **RWANDA:**
- According to the **2019 Inter-Parliamentary Union Report**, **Rwanda** led the way globally in long-term representation with **61.3%, followed by Cuba at 53.2%.**
- Some countries, such as **France, Korea, and Nepal,** have introduced high quotas, like **50% of candidate lists, within their parties.**
- **Argentina, Mexico, and Costa Rica** are examples of countries with **party quota laws** and **more than 36% female representation** in their national legislatures.
- **South Africa** stands out with **44.8%** of its National Assembly comprised of women, making it noteworthy.

The Countries With the Most Women in National Parliament

Share of women in the national unicameral or lower house of parliament (as of Jan 2022)

1.	Rwanda	61.3%
2.	Cuba	53.4%
3.	Nicaragua	50.6%
4.	Mexico	50.0%
5.	UAE	50.0%
6.	New Zealand	49.2%
7.	Iceland	47.6%
…		
72.	U.S.	27.7%

Globale average 26.0%

Source: Inter-Parliamentary Union

statista

WAY FORWARD:

1. *"For me, a better democracy is a democracy where women do not only have the right to vote and to elect but to be elected."*—Michelle Bachelet, head of UN Women, former president and defence minister of Chile.
2. Emphasize that **women's reservation** is a **matter of gender justice**, rectifying gender imbalances, and ensuring equal participation in decision-making.
3. Highlight **successful women leaders** as **role models**, showcasing their contributions to governance and society.
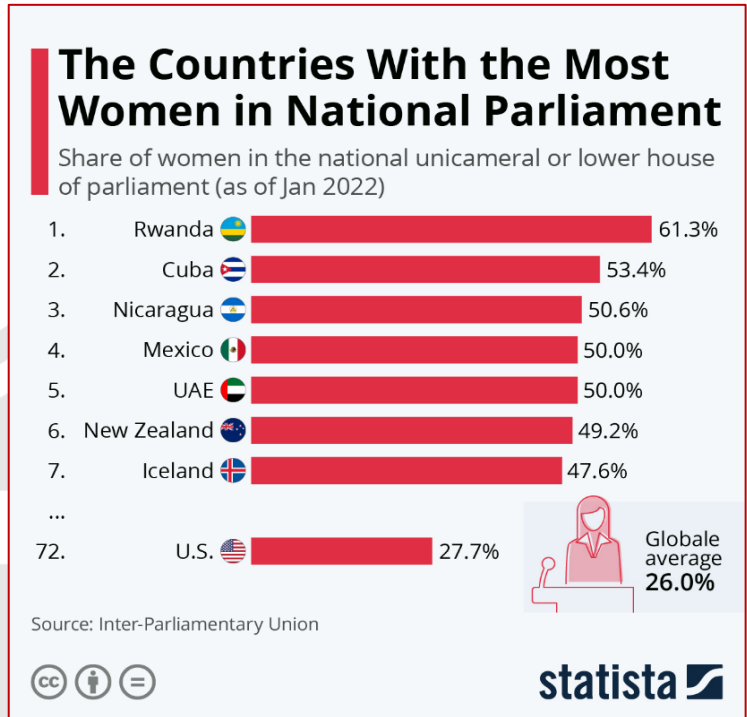
4. Provide **training and educational programs** to empower women to actively participate in politics.

5. *"Empowerment of women leads to development of a good family, good society and, ultimately, a good nation."-* Abdul Kalam

6. **Study and learn from other countries** that have successfully implemented gender quotas and reservations in politics.

7. **Engagement of all stakeholders:**

   Susan Ferguson, Country Representative of UN Women India, called it a "bold" and "transformative" step, emphasizing the importance of political representation for women's long-term empowerment, while hoping that the proposed Bill will be supported by all stakeholders, including Members of Parliament and civil society and family.

Polity & Governance

PRISON REFORMS

SOURCE: THE INDIAN EXPRESS, THE ECONOMIC TIMES , MoHA

WHY IN NEWS?

➢ According to the **Supreme Court Committee on Prison Reforms, the conditions in prisons** all

over the nation's housing areas were in a "**pitiful state of affairs,**" underscoring the fact that **quick trials can** be a useful instrument in resolving the **issue of overcrowding in jails.**

➢ A **committee** headed **by former Supreme Court Justice (Retd) Amitava Roy** stated in its finalsummation of reports that **living conditions in jails** fall short of what is envisioned in the **2016 Model Prison Manual** and demand immediate and result-driven correction.
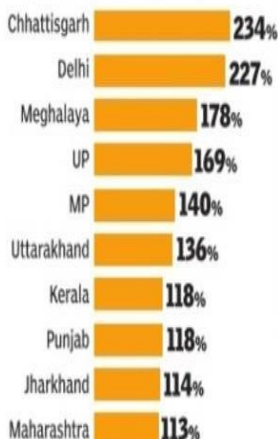
WHAT ARE THE PROBLEMS RELATING TO PRISONS IN INDIA?

➢ **Overcrowding:** Indian jails frequently **house more inmates** than they were built to house, resulting in overcrowding causing **poor living conditions**.

• The **committee (Amitav Roy)** reported in the chapter titled **"Overcrowding in Prisons"** that "overall, an **overcrowding rate of 139%** was observed in the **male prisons of 12 states** but spans jail-wise around 104 percent to 181 percent."

➢ **Understaffing**: Understaffing impacts **security, supervision**, and the ability to offer convicts **educational and rehabilitative programs** in many jails in India.

No wonder India's prisons are so overcrowded

Most prisons in India are overcrowded, avg occupancy rate in Indian prisons is 114%

Top 10 overcrowded prisons

Prison	Rate
Chhattisgarh	234%
Delhi	227%
Meghalaya	178%
UP	169%
MP	140%
Uttarakhand	136%
Kerala	118%
Punjab	118%
Jharkhand	114%
Maharashtra	113%

Undertrials are those awaiting trial or whose trials were still ongoing, and who have not been convicted

Poor state of legal aid

The home ministry agrees that only "**the poor and indigent... have continued to languish as under-trials**" and notes "**the lack of adequate legal aid**" is the principal reason for "continued detention ... where bail is a matter of right" Although an accused in criminal case has the right to free legal aid, but here, too, a sorry picture...

Among states with largest undertrial populations...

Haryana has highest number of legal aid lawyers, but avg prison visits by them is 0.22 times a month...

State	Number of legal aid lawyers	Average monthly visit per prison per lawyer
West Bengal	27	1.44
Maharashtra	84	1.28
Jharkhand	80	1.28
Delhi	73	1.12
Haryana	478	0.22
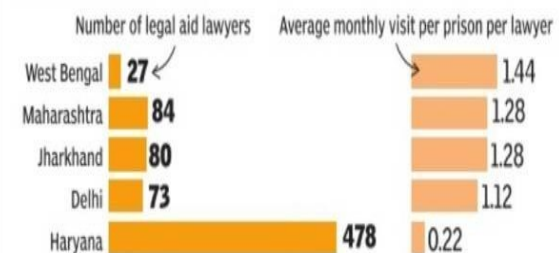
What is Sec 436A?

It says that where an undertrial has been detained for a period equal to half of the maximum sentence specified for the offence for which he/she is charged, they are eligible for release on personal bond, with or without sureties

But despite home ministry's guidelines, many prison officials across states are still unaware of how section 436A CrPC is to be applied

*Amnesty International India filed nearly 3,000 RTI applications to gather the data for the study

- Each jail must have a **welfare officer** and a **law officer**, but these positions have not yet been filled, despite requirements under the **Prison Act of 1894** and **the Prisoner Act of 1900.**
  - ➤ **Poor infrastructure:** India has a large number of jails with **obsolete infrastructure**, **subpar amenities,** and **poor sanitation**, which can cause **health issues and cruel living conditions** for inmates.
- Adequate **budgetary support** has not been allocated for prison administration.

➢ **Legal and judicial backlogs:** The **lengthy pretrial custody** of many prisoners in India is a result of the **protracted judicial proceedings**. There may be **overcrowding** and **more demand for resources** as a result of this backlog in the legal system.

- **Trial prisoners** make up **67.2% of the total prison population** in India, according to **the National Crime Records Bureau (NCRB)-**Jail Statistics India**, undertrials serve longer terms** than they would have if a trial had gone place.
- **Obsolete laws** like the **Evidence Act of 1872**, and the **Prison Act of 1894** cause many delays.

➢ **Women prisons: Inadequate facilities** and a lack of **gender-sensitive programs** are two issues that women prisoners frequently confront.

➢ **Mental health issues:** There is a **paucity of mental health support** and **treatment services** within the prison system.

- In India, roughly **1 in 7 prisoners** reported having a **mental health illness**, according to a survey done by the **Ministry of Health and Family Welfare in 2018–19**.

➢ **Ineffective rehabilitation measures:** It is difficult to **successfully reintegrate** into society since there **isn't enough attention paid** to their rehabilitation and reintegration, and there aren't enough **educational and vocational programs** available.

- Juveniles are not provided enough care and rehabilitation opportunities.

➢ **Human rights violations**: Human rights organizations are alarmed by reports of **abuse**, **neglect**, and other **human rights breaches** in several Indian prisons.

- The **National Human Rights Commission** reported **1,569 deaths** in **judicial custody** in the year 2020.

HOW TO OVERCOME THIS SITUATION?

The need for jail reforms in India has long been felt, which has prompted the creation of numerous committees and commissions to study the problem and provide recommendations for systemic changes.

COMMITTEES	RECOMMENDATIONS
1. Justice Mulla Committee 1980	The committee concluded that the government had a responsibility to offer convicts **respectable living conditions**.
2. Justice V R Krishna Iyer Committee 1988	It suggested changes for the care and **rehabilitation of juveniles**, including the creation of **observation homes** and other institutions specifically for them.
3. Justice Malimath Committee 2003	The committee proposed changes including the **death penalty being replaced** with a sentence of life in prison without commutation or remission.
4. Justice Amitava Roy Committee 2018	It suggested a number of solutions to the **overcrowding problem**, such as the **granting of parole** to particular prisoner groups.
5. Law Commission 268th Report	The Commission recommended releasing those who had been arrested for offenses that carried **sentences of up to seven years** in prison after **serving one-third** of those terms and releasing those who had been charged with crimes that carried longer terms of imprisonment after serving half of those terms.

GOVERNMENT EFFORTS FOR PRISON REFORMS IN INDIA

INITIATIVE	OBJECTIVE
1. Modernisation of Prisons scheme	In order to **improve the conditions of prisons, inmates,** and prison staff, the scheme was introduced in 2002–2003.
2. E Prisons project	Improving **jail administration efficiency** through **digitization**.
3. National Legal Services Authority	To provide free legal aid to weaker sections of the society.
4. Model Prison Manual2016	It tries to establish **uniformity across the nation** in the **laws, rules, and regulations** governing the **management of prisoners** and the **operation of prisons**.

WAY FORWARD:

➢ **Assess the state of Prisons**: To comprehend the **current situation** of the Indian prison system, conduct thorough **evaluations and studies**.

➢ **Continuous monitoring of laws and regulations:** The Union Home Minister has introducedthree bills in the Lok Sabha with the aim of repealing and replacing the Indian Penal Code (IPC), the Code of Criminal Procedure (CrPC), and the Indian Evidence Act. These three actswere enacted during the British rule in India.

➢ **Effective rehabilitation measures**: The post-release **support and societal stigma reduction** ofex-convicts through rehabilitation and reintegration.

➢ **Mental Health Services**: Promote the addition of mental health services to the prison systemto meet the inmates' mental health requirements.

➢ **Adhere to international obligations**: Like implementing the provisions of the **United NationsConvention against torture.**

ONE NATION, ONE ELECTION

SOURCE: TIMES OF INDIA, THE HINDU, THE HINDU

WHY IN NEWS?

➢ A **committee** led by **former President Ram Nath Kovind** was established by the Union government to investigate the **viability of simultaneous Lok Sabha and state Assembly elections** under the slogan "One Nation, One Election."

➢ If India succeeds in doing that, it will be just **the fourth nation** in the world to conduct elections at the same time.

OUT ONE NATION ONE ELECTION:

➢ The phrase **"One Nation, One Election**" refers to the proposal of **holding simultaneous elections** for **the Lok Sabha**, the lower house of the Indian Parliament, and for all state legislative bodies throughout the nation.

➢ Currently, Lok Sabha elections and state legislative assembly elections are held separately in India for the 28 states and 8 union territories, and these elections might take place at different periods, creating frequent electoral cycles.

A BRIEF HISTORY

- ➢ Elections held simultaneously are not a new idea.
- ➢ Throughout the period from 1951 to 1967, elections for the Lok Sabha and State Legislative Assemblies were held concurrently.

- ➢ In 1968 and 1969, the cycle was briefly broken by the early dissolution of a few Legislative Assemblies. Fourth Lok Sabha elections were held in 1971 after its own premature dissolution in 1970. In accordance with Article 352 (Emergency), the Fifth Lok Sabha's term was prolonged till 1977.
- ➢ The cycle of simultaneous elections has since been severely broken as a result of numerous instances of dissolution of the Lok Sabha and State Assemblies.

BENEFITS OF ONE NATION ONE ELECTION:

"One Nation, One Election" is a concept that seeks to synchronize these elections in order to achieve a number of benefits, including:

- ➢ **Reducing election expenditure**: Elections can be expensive to hold if they are held at various times, both financially and in terms of the administrative resources that must be allocated.
  - • It might be said that the 8,000 crore (Rupees 1,500 crore annually) spent by the Election Commission over five years, or Rupees 27 per voter annually, is a massive cost associated.
- ➢ **Impact on governance and development programs**: During general elections to Lok Sabha, MCC is applicable throughout the country, and during elections to Assemblies, the code is applied across the entire State.
  - • According to NITI Aayog's analysis, the Model Code of Conduct would be applicable for at least 4 months each year in some or all regions of the nation.
- ➢ **For increasing voter turnout**: Holding simultaneous elections will result in a higher voter turnout because people may be more inclined to vote in contests that have a bigger influence on both the national and state levels.
- ➢ **Administrative machinery:** To ensure smooth, peaceful, and unbiased elections, the Election Commission enlists the assistance of a sizable number of government employees (teachers, other staff, etc.), as well as the armed forces (CAPF, state police, Home Guard, etc.).
  - • It diverts resources from the armed police force that could otherwise be used for other internal security tasks, which are its fundamental duties.

CHALLENGES IN IMPLEMENTING ONE NATION ONE ELECTION:

- ➢ **Constitutional amendments**: To consider **regional differences and state-specific challenges,** India's federal system and Constitution permit separate elections at the state and national levels.
  - • To synchronize elections at all levels, the Constitution would need to be amended, which would take a long time.
- ➢ **Administrative challenges:** A significant administrative problem is managing security, logistics, and the deployment of election staff for concurrent elections around the nation.
  - • It is essential to ensure the fairness and efficiency of such a massive electoral process by the Election Commission of India.

- ➢ **Political challenges**: Aligning state legislature terms with the Lok Sabha's would be necessary to hold simultaneous elections.
  - • <u>This would entail cutting or lengthening some state governments' terms, which can be legally and politically controversial.</u>
- ➢ **Impact on regional parties:** Simultaneous elections worry smaller and regional parties that their influence and visibility may suffer.
  - • <u>They contend that local parties and issues may be overshadowed by national politics.</u>
- ➢ **Logistic challenges:** Currently, each polling place has a single voting machine that is utilized to conduct the vote.

  - • <u>Since the ECI must supply two sets of EVMs and VVPATs for each polling station (one for the Legislative Assembly election and the other for the Lok Sabha election), the requirements for staging simultaneous elections would double.</u>
- ➢ **Voter education:** For simultaneous elections, it is important to coordinate voter education initiatives and awareness campaigns.
  - • <u>Or else this can be politically motivated and might persuade people to vote for candidates who support national issues in state elections</u>

SIMULTANEOUS ELECTIONS IN OTHER COUNTRIES:

- ➢ **SOUTH AFRICA:** The proportional representation (PR) framework is the foundation of South Africa's electoral system, which is used to elect members of the national legislature and provincial legislatures. In South Africa, provincial and national elections are held concurrently every five years.
- ➢ **SWEDEN:** Every four years, in September, general elections for the Riksdag, regional/county council assemblies, and municipal councils are held. On the same day, these elections are held. Sweden has a proportional electoral system.
- ➢ **BELGIUM**: Elections for the European Parliament and the Federal Parliament of Belgium both take place every five years. This planned strategy guarantees a uniform voting procedure, encouraging voter participation and administrative effectiveness.
- ➢ **UNITED KINGDOM:** The Fixed Term Act 2011, passed by the Westminster Parliament, established a fixed term for the Parliament and a 5-year cycle for general elections.

RECOMMENDATIONS FROM VARIOUS COMMITTEES:

COMMITTEE	RECOMMENDATIONS
1. **LAW COMMISSION OF INDIA 170th Report 1999**	The report noted that after 1967, elections became unreliable as a result of the Constitution's Article 356 being invoked frequently, and what had once been an exceptional circumstance.
2. **PARLIAMENTARY COMMITTEE ON LAW AND JUSTICE 79th Report 2015**	The Committee underlined various arguments in its Report on the "Feasibility of Holding Simultaneous Elections to the House of the People (Lok Sabha) and State Legislative Assemblies," including costs, policy paralysis during MCC, labour demands, etc.
3. **NITI AAYOG (BIBEK DEBROY AND KISHORE DESAI) 2017**	Underlined the significance of holding simultaneous elections that addressed the nation's diverse requirements since national parties would fight for regional concerns while regional parties would fight for national ones.
4. **LAW COMMISSION OF INDIA 2018**	The Law Commission, presided over by Justice B S Chauhan, stated in a draft report, that simultaneous elections could not be held within the current parameters of the Constitution. It would require constitutional amendments.

WAY FORWARD:

➢ **Public awareness**: Promote public awareness of the advantages and consequences of holding elections concurrently.

➢ **Pilot projects**: Conduct experimental projects in a few states to assess the viability and difficulties. These pilot programs can aid in identifying and resolving logistical, clerical, and political problems.

➢ **Political Consensus**: It's important to create political consensus. Consult and converse in depth with political parties to win their support and handle their issues.

➢ **Gradual Transition:** If total synchronization is not possible right now, consider a gradual transition by coordinating national and state elections over a few cycles, allowing states with present assemblies to finish their mandates prior to the transition.

➢ **Best practices:** Study examples of countries around the world that hold elections simultaneously to learn from their experiences and best practices.

CONSTITUTIONAL PROVISIONS:

The terms of the state legislative assemblies can be adjusted to be shorter or longer than those of the Lok Sabha, and constitutional amendment would be required in the following areas:

- ❖ Article 83: According to Article 83, the Lok Sabha's tenure will begin on the day of its first sitting and last for five years.
- ❖ Article 85: The President may dissolve the Lok Sabha under Article 85.
- ❖ Article 172: According to Article 172, the legislative assembly's term shall continue for five years from the date appointment for its first meeting.
- ❖ Article 174: The state's governor is given the authority to dissolve the Legislative Assembly under Article 174.
- ❖ Article 356: In the event that the constitutional machinery fails, the Central Government is authorized to establish the President's rule.

STATUTORY PROVISIONS:

The Representation of the People Act,1951

- ✓ Notification for general elections to the House of the People and the State Legislative Assemblies is covered in Sections 14 and 15 of the RPA Act, 1951.
- ✓ Bye-elections to the House of the People and State Legislative Assemblies are covered in Part IX of the RPA Act, 1951.

STATUS OF THE RIGHT TO INFORMATION ACT

SOURCE: THE HINDU

WHY IN NEWS?

A three-judge panel headed by Chief Justice of India D Y Chandrachud ordered the Right to Information Act's provisions to be properly implemented by the state information commissioners (SIC) and the Central Information Commission (CIC).

ABOUT RIGHT TO INFORMATION ACT,2005:

- ➢ An important piece of legislation in India that gives citizens access to information maintained by public authorities is the Right to Information Act (RTI Act) of 2005.
- ➢ Promoting accountability, openness, and good governance in the operation of governmental organizations is the main goal of the RTI Act.
- ➢ The Mazdoor Kisan Shakti Sangathan (MKSS) was one of the most well-known NGOs that was instrumental in promoting the RTI Act in India.

SIGNIFICANT FEATURES AND PROVISIONS OF THE ACT:

- ➢ **Applicability of the law:** All government organizations, including those at the Union, state, and local levels as well as public authorities and agencies, are subject to the RTI Act.
- ➢ **Request for Information:** An information request can be made to a public authority by any Indian citizen. Requests may also be submitted by non-citizens, such as foreign nationals.
- ➢ **Public Information Officer**: A Public Information Officer (PIO), who is in charge of accepting and responding to RTI requests, must be appointed by each public entity.
- ➢ **Time Frame**: Within 30 days after receiving the RTI request, the PIO must answer. If consultation with outside parties or other departments is necessary, this time frame may in some cases be increased to 45 days.
- ➢ **Fees:** The provision of information may be subject to a fair fee from public entities. For those who fall below the poverty level, there are opportunities for fee waivers or reductions.

BENEFITS OF THIS LEGISLATION:

- ➢ **Accountability and Transparency:** The RTI Act encourages accountability in government operations by enabling citizens to access data stored by public bodies.
- ➢ **Reduction in Corruption**: The RTI Act's increased transparency and public scrutiny can aid in discouraging corrupt behaviour within government organizations.
- ➢ **Empowerment of Citizens**: Citizens can use it to call attention to corruption and demand accountability.
- ➢ **Whistleblower Protection**: The Act contains safeguards to safeguard individuals who reveal wrongdoing or corruption inside governmental organizations.
  - • People are more likely to come forward with information when they are protected.
- ➢ **Increased civic engagement**: RTI supports activism and civic involvement. It enables people, civil society groups, and journalists to look into and report on topics of general interest.

ROLE OF CENTRAL INFORMATION COMMISSION:

- ➢ **Establishment:** In accordance with the provisions of the Right to Information Act (2005), the Central Government established the CIC in 2005. There is no constitutional body for it.
- ➢ **Membership:** A Chief Information Commissioner and a maximum of ten Information Commissioners make up the membership.
- ➢ **Powers and functions of CIC:** To receive and investigate complaints about information requests made under RTI, 2005, from any person.
- • If there are sufficient grounds, it may order an investigation into any topic (Suo moto authority).
- • The Commission has the same summoning, requesting of documents, etc., powers as a civil court when conducting an investigation.

KEY POINTS OF DIFFERENCE

The bill seeks to empower the central govt on deciding salaries, and other terms of service of information commissioners.

■ RTI Act, 2005   ■ RTI (Amendment) Bill, 2019

Term	Quantum of salary	Deductions in salary
■ **CHIEF** information commissioner (CIC) and information commissioners will have a tenure of five years	■ **CIC** pay equivalent to CECs, Central ICs and state CIC to election commissioners and state ICs to chief secretary	■ **IF** such officials are receiving pension or other retirement benefits, their salaries will be reduced by an amount equal to the pension
■ **CENTRE** will notify the tenure of all information commissioners (ICs) at state and central level	■ **SALARIES** and allowances of these officers will be determined by the Central government	■ **THESE** provisions have been removed

Source: PRS Legislative Research

- ➢ **STATE INFORMATION COMMISSION**: The State Government established it.
- • There will be one State Chief Information Commissioner (CIC) and a maximum of ten State Information Commissioners (IC) in the commission.

MAJOR AMENDMENTS TO THE RTI ACT:

RIGHT TO INFORMATION AMENDMENT ACT 2019

➢ The Chief Information Commissioner and an Information Commissioner (Centre and States) will occupy their positions for the duration of the Central Government's designated tenure. Prior to this change, their term was set at five years.

➢ The Chief Information Commissioner and an Information Commissioner (Centre and States) shall receive salaries, allowances, and other terms of service as set forth by the Central Government.

➢ Before this amendment, they were comparable to those of the Chief Election Commissioner.

➢ On the basis that it weakens the law and gives the central government more authority, the RTI (Amendment) Act, 2019, has drawn criticism.

IMPORTANT JUDGEMENTS OF THE SUPREME COURT

	CASE	JUDGEMENT
1.	**PUCL vs UNION OF INDIA 2004**	**The right to information is regarded as a basic right under Article 19(1)(a) of the Indian Constitution, and this case is seen as the forerunner to the RTI Act.**
2.	**CIC vs HIGH COURT OF GUJARAT 2012**	**This decision made it clear that requests for information can be made of the Chief Justice of India's office under the RTI Act.**
3.	**CBSE CASE 2011**	**In this case, the Supreme Court decided that exam answer sheets came under the RTI Act's definition of "information." This choice gave students and candidates access to their answer papers that had been reviewed.**
4.	**RAJASTHAN HIGH COURT BAR ASSOCIATION CASE 2018**	**The Court ruled that excessive disclosure under the RTI Act should not jeopardize the independence of the judiciary.**

CHALLENGES IN THE IMPLEMENTATION OF THIS ACT:

➢ **High number of pending cases:** Nearly 3.15 lakh complaints or appeals are currently pending with 26 information commissions in India.

• Maharashtra had the most active cases, with Uttar Pradesh, Karnataka, and other states following.

➢ **INFORMATION COMMISSION:** Four of the country's 29 information commissioners are currently headless, two of them are completely inactive, and only 5% of the posts are held by women.

• Tripura and Jharkhand have been totally inactive for 15 and 29 months, respectively. Andhra Pradesh, Telangana, West Bengal, and Manipur are the only states without chiefs.

➢ **Slow disposal of cases:** Concerns about the late disposal rates in certain commissions and the opaqueness of their operations are also raised.

➤ **Various exemptions:** Section 8 of the act and Official Secret Act 1923 restricts access to information under various grounds like security and strategic concerns of the nation.
  - According to the "Right to Information: Master Key to Good Governance" report by the Second Administrative Reforms Commission, "The Official Secrets Act, 1923 should be repealed."
➤ **Digital divide:** Information access is frequently made simpler for people who have internet access and digital skills due to the "digital divide." Online RTI requests may be challenging for rural and marginalized groups.

WAY FORWARD:

➤ **Awareness campaign:** Launch extensive awareness and education initiatives to inform the public of their rights under the RTI Act.

➤ **Capacity Development:** Public information officers (PIOs) and appellate authorities should receive frequent training and capacity-building programs to increase their responsiveness**.**

➤ **Protection for whistle-blowers:** Enhance whistleblower and RTI activist protections to ensure their safety and promote the disclosure of wrongdoing.

➤ **Technology Use**: Encourage the use of technology, such as digital archiving and document management systems, to help with effective information storage and retrieval.
  - To digitize and streamline government operations, and implement e-governance projects like Digital India, PRAGATI, National e-governance plan.

➤ **Making Information Commissions Stronger**: Ensure that the central and state information commissions have enough personnel and funding.
  - Take action to shorten the case backlog and hasten the determination of appeals and complaints.

➤ **Learn from best practices around the world**: USA's law is a good example. Anyone has the right to request access to Executive Branch government records under the Freedom of Information Act (FOIA) in the USA. Unless they fall under one or more of the FOIA's exempt categories of information, the requested records must be made public.

SEDITION LAW

SOURCE: **THE HINDU**

WHY IN NEW?

➤ The Supreme Court made a significant decision by directing a five-judge constitutional bench to review the legality of Section 124A of the Indian Penal Code (IPC), which deals with sedition charges.
➤ This decision comes after the Supreme Court suspended the application of the sedition law in May 2022 while a related case was under consideration.
➤ Following this suspension, the Government of India introduced a bill known as the "Bhartiya Nyaya Sanhita, 2023," aimed at replacing the IPC.

SEDITION LAW

- Section 124A of the Indian Penal Code addresses the offense of sedition, which is defined as a crime against the state.
- This law specifically targets content that could potentially provoke violence or disrupt public order by fostering hatred, contempt, or disaffection toward the government.
- It's important to note that when criticism is employed to challenge and influence government decisions at the legislative or administrative level, it does not fall within the scope of seditious activity.

WHAT THE APEX COURT SAID

This government has been scrapping many obsolete laws. We don't know why they are not looking into this law? Continuance of this law is a serious threat to liberty

- The enormous power of misuse of this section can be compared with a carpenter with a saw. Instead of cutting a tree, he cuts the entire forest
- There is no dispute that it is a colonial law and was used by the British to suppress freedom and was used against Mahatma Gandhi... Is this law still needed after 75 years of Independence?

WHAT IS SECTION 124(A)?

Under Section 124A of IPC, the offence of sedition is committed when any person by words or otherwise brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards, the govt established by law

- The penal provision is punishable with a jail term ranging between three years to life term

LOW CONVICTION RATE

- Between 2016 and 2019, the number of sedition cases rose by 160% to 93
- But in 2019, the conviction rate was 3.3%

HISTORY OF SEDITION LAW IN INDIA

- **COLONIAL ROOTS:**
  - Sedition was not initially considered a criminal offense in the original 1860 version of the Indian Penal Code (IPC), authored by Thomas Macaulay in 1837.
  - The inclusion of sedition as a criminal offense in the IPC took place later, specifically in the 1870 modification led by Sir James Stephen.
  - This addition to the IPC was introduced during the period of British rule in India and was categorized under the term "Exciting Disaffection."
- **PROVISIONS FOR SEDITION FOUND IN OTHER LEGISLATION IN INDIA:**
  - **SEDITIOUS MEETING ACT 1911:** The District Magistrate or Commissioner of Police, with public notice, can prohibit gatherings promoting sedition, disaffection, or disturbance in a specified area.
  - **UNLAWFUL ACTIVITIES PREVENTION ACT 1967:** The Act grants the central government unrestricted authority to designate an activity as illegal through an Official Gazette notification.

RELEVANCE OF SEDITION LAW

- **Maintain sovereignty and integrity of the nation:**
  - The sedition law is instrumental in protecting national security by discouraging actions that have the potential to provoke anti-nationalist tendencies and separatist activities.
- **Protect democratic values:**
  - It hinders individuals from utilizing speech or expression to subvert the government's legitimacy, a situation that could otherwise disrupt the stability of the democratic system.

- Maintaining public order:
  - These laws can serve as a means to discourage individuals or groups from participating in actions that could result in communal tensions or public turmoil.

CRITICISMS OF THE SEDITION LAW

- **Outdated law and inherits the colonial legacy:**
  - During the colonial era, sedition was employed by British authorities to imprison individuals who voiced objections to British policies.
  - Prominent leaders of the Indian independence movement like Lokmanya Tilak, and Bhagat Singh were found guilty of engaging in "seditious" speeches, writings, and actions under British rule.
- **Misuse for political purposes:**
  - At times, this legal provision is exploited for political wrongdoing and personal political gain, mostly for exploiting opposition parties.
- **Against the Freedom of speech and expression:**
  - It restricts the rights guaranteed under Article 19(1)(a) of the Indian Constitution, which pertains to freedom of speech and expression.
- **Low conviction rates:**

  - A conviction rate of around 3% in sedition cases suggests that the law is primarily employed to instil fear and stifle dissent or criticism. (NCRB Report)

MAJOR COURT JUDGEMENTS RELATED TO SEDITION IN INDIA

SE		JUDGEMENT
1.	**Romesh Thapar v. the State of Madras and Brij Bhushan and Others v. the State of Delhi (1950)**	The Supreme Court determined that imposing speech limitations based on the potential for disturbing peace was illegal.
2.	**Kedar Nath Singh vs State of Bihar (1962)**	The Supreme Court stated that advocating "revolution" or violent government overthrow constitutes sedition, including inciting chaos.
3.	**Balwanth Singh vs State of Punjab 1995**	The Supreme Court clarified that mere chanting of slogans does not warrant imprisonment under Section 124A unless it leads to public disturbance.

RECOMMENDATIONS REGARDING SEDITION IN INDIA

- **LAW COMMISSION 279th report:**
  - The Law Commission report suggests keeping the controversial Sedition law (Section 124A of the Indian Penal Code)
  - But proposes three main changes: expanding its applicability, imposing harsher penalties, and introducing procedural safeguards to prevent misuse.
  - Specifically, it recommends raising the minimum imprisonment from 3 to 7 years in the interest of national security.

WAY FORWARD

➢ **Stricter safeguards:**

Introduce stricter procedural safeguards to prevent misuse of the law, such as requiring higher standards of evidence, independent oversight, and thorough judicial scrutiny before charges are filed.

➢ **International standards:**

Align the sedition law with international human rights standards to ensure that it respects freedom of speech and expression as recognized in international treaties.

CAUVERY RIVER WATER DISPUTE

SOURCE: THE HINDU

WHY IN NEWS?

➢ The Supreme Court decided not to take sides in the Cauvery water dispute between Karnataka and Tamil Nadu.

➢ Instead, it relied on the collective knowledge and capabilities of the Cauvery Water Regulation Committee (CWRC) and the Cauvery Water Management Authority (CWMA) to oversee the fair distribution of water between these two neighbouring states.

WHAT IS THE DISPUTE?

➢ The Cauvery water dispute between Karnataka and Tamil Nadu began in 1974 when Karnataka started diverting water without Tamil Nadu's consent.

➢ In 1990 the Cauvery Water Disputes Tribunal (CWDT) was established to address the dispute.

➢ It took 17 years for the CWDT to issue its final order in 2007, allocating Cauvery water among the four riparian states.

➢ In 2018, the Supreme Court declared the Cauvery River a national asset and upheld most of the CWDT's water-sharing arrangements.

➢ The Central government then established the **'Cauvery Water Management Scheme'** in 2018, creating the **'Cauvery Water Management Authority'** and the **'Cauvery Water Regulation Committee'** to oversee fair water distribution among the states and Union Territory.

CONSTITUTIONAL AND LEGAL PROVISIONS FOR SOLVING RIVER WATER DISPUTES

➢ **Seventh Schedule:**

➢ State list entry no. 17-matters related to water resources, including water provision, irrigation, canals, drainage systems,

➢ **Union list Entry 56:**

Authorizes the Union government to oversee and promote the management and growth of interstate rivers and their surrounding areas, as determined by Parliament in the interest of the public.
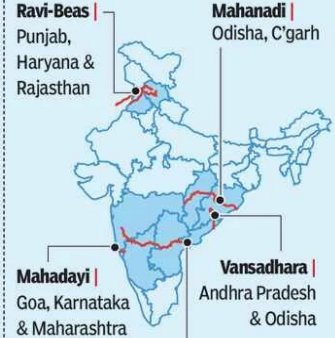
➢ **ARTICLE 262:**

- Parliament has the authority to establish a legal framework for resolving conflicts or grievances related to interstate rivers or river valleys.
- Parliament has the power to enact laws that explicitly exclude the jurisdiction of both the Supreme Court and any other court in matters concerning such disputes or complaints.

WATER LAWS AND BATTLES

● **No national (unified) law |** Many countries like Israel, South Africa and Australia have national water laws

● **Primarily, water is a 'State' subject in India |** States free to deal with issues of water supply, irrigation and canals, and drainage embankments in their own way

● Centre can only regulate, develop inter-state rivers

● Absence of concrete regulatory regime leads to mismanagement of water resources

● Centre, however, assists states in conservation, river cleaning, building infra

● Centre can also deal with issue under Environment (Protection) Act, 1986 and Water (Prevention and Control of Pollution) Act, 1974

Five tribunals are hearing river water disputes

Ravi-Beas | Punjab, Haryana & Rajasthan

Mahanadi | Odisha, C'garh

Mahadayi | Goa, Karnataka & Maharashtra

Vansadhara | Andhra Pradesh & Odisha

Krishna | Maha, K'taka, T'gana, AP

For Cauvery, a tribunal has issued a final award and Centre has set up a panel for release of water as per orders. However, the two states still have differences on several counts

Under Article 262, Parliament has passed the following laws:

RIVER BOARDS ACT:

- The government of India has the authority to form boards dedicated to managing interstate rivers and river valleys, in consultation with state governments.
- No such river board has been established till now.

INTERSTATE WATER DISPUTE ACT,1956

- When a state or states ask the Central Government for a tribunal to resolve a dispute, the Central Government must first try to resolve the issue through discussions with the concerned states.
- If these discussions fail to reach a solution, the Central Government can then establish the tribunal.
- The Supreme Court can't question the tribunal's award or formula, but it can examine how the tribunal operates.
- In 2002, amendments were made to the Inter-State Water Dispute Act, of 1956.

Cauvery Water Disputes Tribunal	Kerala, Karnataka, Tamil Nadu, Puducherry	June 1990	Report and Decision given on 5 February 2007. Supreme Court modified the decision on 16 February 2018. The Cauvery Water Management Authority (CWMA) and Cauvery Water Regulation Committee (CWRC) were constituted to implement the modified decision.
Krishna Water Disputes Tribunal -II	Karnataka, Andhra Pradesh, Maharashtra, Telangana	April 2004	Report and decision given on 30 December 2010. SLPs filed pending in the Court. The term of the Tribunal has been extended after the bifurcation of Andhra Pradesh. The matter is under adjudication in the Tribunal.
Vansadhara Water Disputes Tribunal	Andhra Pradesh, Odisha	February 2010	Report and decision submitted on 13 September 2017. Further Report is pending.
Mahadayi Water Disputes Tribunal	Goa, Karnataka, Maharashtra	November 2010	Report and decision submitted on 14 August 2018. Further Report is pending.
Mahanadi Water Disputes Tribunal	Chhattisgarh, Odisha	March 2018	Under adjudication by the Tribunal. Report and decision are awaited.

- These amendments were based on recommendations from the Sarkaria Commission.
- The amendments introduced a one-year deadline to set up water disputes tribunals.
- They also imposed a three-year timeframe for these tribunals to reach a decision.

PROBLEMS ASSOCIATED WITH RIVER WATER DISPUTES

➢ **Politicization of the issue:**
   Inter-state water disputes frequently get entangled in political agendas, as state governments leverage these issues for their own political advantage.

➢ **Legal and jurisdictional challenges**:
   Prolonged proceedings and significant delays in resolving water disputes have been a notable issue. Ex: Cases like the Godavari and Cauvery.
   There is opacity surrounding the institutional framework and the lack of clear guidelines governing these proceedings

➢ **Economic problems:**
   Consistent access to water is vital for various sectors like agriculture, industry, and urban development, and any interruptions can result in economic setbacks.

➢ **Absence of water data:**
   The lack of universally accepted water data poses a significant challenge, making it challenging to establish a starting point for the adjudication process.

➢ **Central Water Data Repository**: Create a central repository of water data to support well-informed decision-making.
➢ **Fast-Track Tribunals**: Establish fast-track tribunals with technical expertise to resolve water disputes promptly in a time-bound manner.
➢ **Establish an Interstate Council**: Create a special council under Article 263 of the constitution to handle inter-state water disputes.

AADHAAR CONCERNS

SOURCE: TH

WHY IN NEWS?

Moody's has raised concerns about the security and privacy vulnerabilities of centralized identification systems like Aadhaar. This is relevant to India as the government has mandated Aadhaar-based payments for labourers under the MGNREGA scheme.

> Moody's Investors Service rates debt securities in several bond market segments. These include government, municipal and corporate bonds; managed investments such as money market funds and fixed-income funds; financial institutions including banks and non-bank finance companies; and asset classes in structured finance.

ABOUT AADHAR:

WHAT IS AADHAAR?

➢ Aadhaar is a **12-digit unique identification number issued to Indian residents by the Unique Identification Authority of India (UIDAI) after verification.**
➢ **Any Indian resident**, regardless of age or gender, can voluntarily enroll for an Aadhaar number.
➢ To enroll, a person must provide basic demographic and biometric information, including fingerprints, iris scans, and facial photographs.

INDIA'S AADHAAR PROGRAMME

➢ Aadhaar is a strategic policy tool for social and financial inclusion, public sector reforms, and fiscal management.
➢ It is also **a key pillar of the 'Digital India' initiative**, which aims to provide every Indian resident with a unique identity.
➢ The Aadhaar identity platform has **inherent features of uniqueness, authentication, financial address, and e-KYC.**
➢ This enables the Government of India to directly reach residents of the country in the delivery of various subsidies, benefits, and services using only the resident's Aadhaar number.

CONCERNS RAISED:

Unreliable Biometric Tech:

▪ Aadhaar often results in service denials, meaning that people are unable to access the services they need because the biometric authentication fails.
▪ The reliability of biometric technologies is questionable, **especially for manual laborers in hot, humid climates, because their fingerprints and iris scans can be affected by their work.**

Privacy and Security Concerns:

- While Aadhaar is the world's largest digital ID program, it has also been criticized for its **privacy and security vulnerabilities.**
- There is a risk that the sensitive personal information collected by Aadhaar could be breached, or that it could be used by the government for surveillance.

Decentralized Systems:

- Moody's supports **decentralized ID (DID) systems as a potential solution** to some of the challenges posed by centralized systems like Aadhaar.
- DID systems give users more control over their private data and can reduce online fraud.

Negative Social Repercussions:

- Moody's warns that digital IDs, both centralized and decentralized, can have negative social repercussions.
- For example, they can strengthen group identities and political divides, especially if they are offered by technology and social media companies with significant monopolistic influence.

VARIOUS APPLICATIONS(SIGNIFICANCE) OF AADHAAR:

- **Public distribution system (PDS):** Aadhaar is used to authenticate beneficiaries and ensure that they receive their ration entitlements.
- **Aadhaar-enabled payment system (AEPS):** Aadhaar-based biometric authentication is used to enable transactions such as cash withdrawal, balance inquiry, and remittances.
- **Direct benefit transfer (DBT):** Government benefits such as LPG subsidies, pensions, and scholarships are transferred directly to the bank accounts linked to Aadhaar.
- **Jan Dhan Yojana:** Aadhaar is used to authenticate beneficiaries and open bank accounts under this financial inclusion scheme.

Figure 3 HOW UIDAI ENSURES PRIVACY AND SAFETY

- **Pension:** Aadhaar is used to authenticate pensioners and ensure they receive their pension entitlements.
- **Passport:** Aadhaar is used as proof of identity and address for those applying for a passport.
- **JAM trinity:** It refers to the three government schemes of Jan Dhan Yojana, Aadhaar, and Mobile number, which have been launched by the Indian government to ensure financial inclusion and provide a platform for direct benefit transfer.
- **Linking with voter ID:** The Election Commission of India (ECI) has called for linking Voter ID cards with their Aadhaar under the Election Laws (Amendment) Act, 2021.
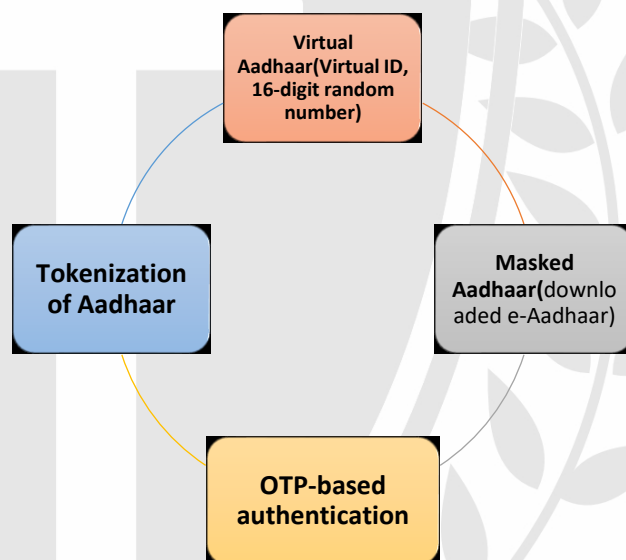
WAY FORWARD:

1. **Data Security:** Enhance data security protocols to prevent breaches and unauthorized access.
2. **Biometric Authentication:** Improve biometric technology to reduce identity fraud.
3. **Regular Audits:** Conduct regular security audits and vulnerability assessments.
4. **Legal Framework:** Establish a robust legal framework for data protection and privacy.
5. **User Awareness:** Educate citizens about Aadhaar usage, privacy settings, and security best practices.
6. **Multi-factor Authentication:** Implement multi-factor authentication for critical transactions.

ZONAL COUNCIL

SOURCE: PIB

WHY IN NEWZ?

Union Home Minister and Minister of Cooperation Shri Amit Shah chaired the 31st meeting of the Northern Zonal Council in Amritsar

ABOUT ZONAL COUNCILS:

- ❖ In **1956,** India's first Prime Minister, **Jawaharlal Nehru**, introduced the notion of establishing **Zonal Councils.**
- ❖ This was suggested **during the course of debate on the report of the States Re-organisation Commission**
- ❖ The proposal aimed to create a **high-level advisory platform** with the **following objectives**:
  - o To **mitigate the impact of linguistic tensions** prevalent during that era.
  - o To foster a **harmonious relationship between the states** and the central government.
- ❖ Consequently, in accordance with the idea promoted by Prime Minister Nehru, **five Zonal Councils were established under the States Re-organisation Act of 1956.**
- ❖ Zonal Councils hold a **statutory status**
- ❖ These five councils are named as follows:
  - o **Northern Zonal Council**: Haryana, Himachal Pradesh, Jammu and India. Kashmir, Punjab, Rajasthan, Delhi National Capital Territory, and Chandigarh Union Territory.
  - o **Central Zonal Council:** Chhattisgarh, Uttarakhand, Uttar Pradesh and Madhya Pradesh.
  - o **Eastern Zonal Council:** Bihar, Jharkhand, Odisha and West Bengal.
  - o **Western Zonal Council:** Goa, Gujarat, Maharashtra, Daman and the Federal Territories. Diu and Dadra & Nagar Haveli.
  - o **Southern Zonal Council:** Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu and Puducherry.

❖ Notably, the **North Eastern States are not part of the Zonal Councils;** instead, their distinct issues are addressed by the **North Eastern Council, formed under the North Eastern Council Act of 1972**

ORGANISATIONAL STRUCTURE OF THE ZONAL COUNCILS:	
Position	**Responsibilities**
Chairman	▪ The **Union Home Minister** serves as the Chairman of each Zonal Council.
Vice Chairman	▪ **Chief Ministers of the States within a zone** take turns as Vice-Chairman for one-year terms.
Members	▪ Chief Minister and two other Ministers chosen by the Governor from each State within the zone. ▪ Two members from Union Territories situated in the same zone.
Advisers	▪ One nominee appointed by the Planning Commission (now NITI Aayog) for each Zonal Council. ▪ Chief Secretaries and another officer or Development Commissioner nominated by each State within the Zone.
Union Ministers	▪ Union Ministers may be invited to participate in Zonal Council meetings when deemed necessary.

SIGNIFICANCE OF ZONAL COUNCILS:

➢ **PROMOTING REGIONAL UNITY:**
Zonal Councils are instrumental in fostering unity and solidarity among states and UTs within a particular region. This regional approach helps address common issues and concerns effectively.

➢ **INTER-STATE AND CENTRE-STATE RELATIONS:**
They serve as high-level advisory bodies for minimizing linguistic hostilities and enhancing the inter-State and Centre-State environment, thus contributing to harmonious governance.

➢ **REGIONAL DEVELOPMENT:**
Zonal Councils facilitate joint planning and coordination of resources for regional development. They help identify key developmental priorities and allocate resources accordingly.

➢ **CONFLICT RESOLUTION:**
They provide a platform for resolving disputes and conflicts among states and UTs. Through dialogue and consensus-building, they aim to find solutions to regional challenges.

➢ **INFRASTRUCTURE AND CONNECTIVITY:**
Zonal Councils can work on projects and initiatives that promote infrastructure development and connectivity within the region. This can include road networks, railways, and more.

➢ **RESOURCE SHARING:**

Member states and UTs can share resources and best practices to address issues such as water management, disaster management, and healthcare.

HISTORICAL BACKGROUND:

❖ After India got its independence, it adopted interim federalism on a temporary basis where four types of states were demarcated:

Category	Details
Category A	All British Provinces (Governor province of British India) – Assam, Bihar, Bombay, Madhya Pradesh, Punjab, The United Provinces, West Bengal
Category B	Princely states with the legislature – Hyderabad, Jammu Kashmir, Madhya Bharat, Mysore, Patiala, Eastern Punjab
Category C	Medium-sized princely states – States comprising Ajmer, Bhopal, Bilaspur, Cooch- Bihar, Coorg
Category D	It Included Special status states – Territories comprising The Andaman and Nicobar Islands

❖ The early integration of princely states into India lacked a structured approach and was ad-hoc. As regional demands, especially from South India, for linguistic-based state reorganization grew, the Government formed several commissions to address these requests.

❖ **Dhar Commission (1948):** Formed to explore the possibility of linguistic state organization but recommended states based on administrative convenience.

❖ **JVP Committee (1948):** Composed of Jawahar Lal Nehru, Vallabhbhai Patel, and Pattabhi Sitaramayya, it **rejected language as the basis for state reorganization** and led to the creation of Andhra State(1953) in response to Potti Sreeramulu's hunger strike.

❖ **State Reorganisation Commission (Fazal Ali Commission, 1953):** Established after the creation of Andhra Pradesh, this three-member commission acknowledged **four major factors for state reorganization: linguistic and cultural similarities, unity and integrity of India, administrative and economic considerations, and promoting people's welfare.**

❖ **STATE REORGANISATION COMMISSION OUTCOME:**
  ▪ Government accepted recommendations with minor modifications.
  ▪ **States Reorganisation Act 1956 and 7th Amendment Act 1956 were enacted.**
  ▪ **Distinction between Part-A and Part-B states removed**, **and Part-C states abolished**.
  ▪ Some states merged with adjacent states, while others became union territories.
  ▪ By November 1956, **India comprised 14 States and 6 Union Territories.**

ARMED FORCES (SPECIAL) POWERS ACT (AFSPA)

SOURCE: TH, IE

WHY IN NEWS?

The Manipur government has extended the imposition of the Armed Forces (Special Powers) Act (AFSPA) in the entire state, except for specific areas. AFSPA's "disturbed area" status will continue in all hill districts, primarily inhabited by tribal communities.

The Indian States that are under AFSPA Act are **Jammu and Kashmir, Nagaland, Assam, and Arunachal Pradesh.** The Indian Armed Forces are given special authority under the (Armed Forces Special Power) AFSP Act, an act of the Indian Parliament, to uphold public order in "disturbed areas."

{12-Sept-2023}

ABOUT AFSPA:

ORIGIN AND BACKGROUND OF AFSPA:

➤ The AFSPA, initially introduced by the British **during the Quit India movement in 1942**, was **retained by Prime Minister Jawaharlal Nehru** after India gained independence.
➤ It was **formally enacted as the Armed Forces (Special Powers) Act in 1958**, granting extensive powers and legal protection to the armed forces in designated "**disturbed areas.**"
➤ The Act was primarily a response to the escalating violence in the Northeastern States, which was challenging for the State governments to manage.

KEY PROVISIONS OF AFSPA:

➤ AFSPA **empowers armed forces to take measures in "disturbed areas**," including **dispersing gatherings of five or more people, using force (including lethal force) with prior warning, and making arrests without warrants when reasonable suspicion exists.**
➤ Additionally, the **Act allows for warrantless searches of premises, the destruction of arms and ammunition caches, and the stopping, searching, and seizing of vehicles.**
➤ When individuals are arrested, they must be promptly handed over to the nearest police station along with a report detailing the circumstances of the arrest.

DECLARATION OF "DISTURBED AREAS" AND LEGAL SAFEGUARDS:

➤ Section 3 of AFSPA **permits the Central Government, Governor of a State, or Union Territory administrator to declare an entire region or part of it as "disturbed"** due to conflicts between religious, racial, linguistic, regional, or caste-based groups.
➤ Section 6 ensures that **arrested individuals and seized property are transferred to the police as quickly as possible.**
➤ Section 7 provides **legal protection to individuals acting in good faith within their official capacity, and any prosecution requires the prior sanction of the Central Government.**

ARGUMENTS IN FAVOR OF AFSPA	ARGUMENTS AGAINST AFSPA
1. Empowering Armed Forces: AFSPA provides necessary powers to the armed forces to restore normalcy effectively.	1**. Misuse of Provisions:** AFSPA provisions have been misused, leading to fake encounters and extra-judicial killings. **EXAMPLE:** In December 2021, a total of 14 civilians were killed in and after a botched Indian Army operation, according to MHA
2. Security Situation: Premature withdrawal of AFSPA can worsen security situations, delaying the restoration of peace.	**2. Draconian Law**: AFSPA is often criticized as a draconian, repressive, colonial, and outdated law in a democratic society.
3. Inadequate CrPC: Normal Criminal Procedure Code (CrPC) offers limited powers to handle violent situations in disturbed areas.	**3. License to Kill:** It's perceived by some as a license to kill granted to the armed forces.
4. Proxy Groups: Disturbed areas involve proxy groups, necessitating extraordinary powers to break these connections.	**4. Violation of Constitutional Rights:** AFSPA is seen as a violation of various constitutional rights, including prevention against arrest, privacy, and more.
5. Asymmetric Warfare: Armed forces face asymmetric warfare with raids, ambushes, mines, sabotage, etc., requiring exceptional powers.	**5. Reducing Alienation:** Abolishing AFSPA could reduce the feeling of alienation in the northeast.
6. National Security: AFSPA provisions play a crucial role in maintaining law and order in disturbed areas, safeguarding the nation's sovereignty and security.	**6. Abuse of Power:** Allegations exist that the immunity provided by AFSPA leads to misuse of power by armed forces, resulting in offenses like enforced disappearances and sexual assault.

OBSERVATION OF GOVERNMENT COMMITTEES:

JEEVAN REDDY COMMITTEE:

➢ After extensive consultations with all stakeholders, the committee recommended the abolition of AFSPA.

➢ The committee **proposed the establishment of a comprehensive arrangement under the Unlawful Activities Prevention Act as an alternative to AFSPA.**

➢ It suggested that Central forces should assist civil authorities in maintaining law and order.

➢ Only commissioned officers should be authorized to order the use of force when deemed necessary.

➢ The committee recommended the **creation of independent and competent grievance cells** in each district where these forces are deployed to investigate rights violations.

JUSTICE SANTOSH HEGDE COMMITTEE:

➢ The Justice Santosh Hegde Committee, formed **to investigate fake encounters in Manipur**, characterized AFSPA as a "symbol of oppression."

➢ The commission identified a **deficiency in effective safeguards against the extensive powers granted to the armed forces at the grassroots level**

JUSTICE VERMA COMMITTEE:

➢ The Justice Verma Committee, which focused on offenses against women in conflict areas, stated that "AFSPA legitimizes impunity for sexual violence," citing incidents like the Kunan Poshpora case and the Thangjam Manorama case in Manipur.

SECOND ARC REPORT:

➢ The 5th report of the Second Administrative Reforms Commission (ARC) on public order also recommended the repeal of AFSPA.

SUPREME COURT'S RULING ON AFSPA (NAGA PEOPLE'S MOVEMENT OF HUMAN RIGHTS V. UNION OF INDIA - 1998):

➢ The Supreme Court, in its **1998 judgment**, **affirmed the constitutionality of AFSPA.**
➢ According to this judgment, the Supreme Court **established the following principles**:
   ▪ The **Central government is authorized to issue a Suo-motu declaration**. However, it is advisable that the **central government consults with the state government before making such a declaration.**
   ▪ The declaration must have a **defined timeframe,** and there should be **regular reviews of the declaration's status after every six months.**
   ▪ When exercising the powers granted by AFSPA, the authorized **officer should employ the minimum force necessary for achieving effective action.**
➢ **In 2016, the Supreme Court has said that the Army is not immune to any prosecution by criminal court if found committing any offence.**

WAY FORWARD:

1. **Human Rights Adherence:** Emphasize that complying with human rights does not conflict with operational effectiveness and actually enhances counterinsurgency capabilities.
2. **Strong Safeguards:** Ensure that protection for armed forces comes with provisions for responsibility and accountability within legal boundaries. Incorporate robust safeguards into existing or new laws.
3. **Supreme Court Guidance:** Follow the Supreme Court's judgment both in letter and spirit.
4. **Clarity in Legal Terms:** Clearly define terms like "disturbed," "dangerous," and "land forces" to improve legal clarity.
5. **Transparency:** Enhance transparency by openly communicating the status of ongoing cases on army and government websites.
6. **Independent Investigations:** Thoroughly investigate every death in disturbed areas caused by the armed forces, regardless of whether the deceased is a civilian or a criminal.

NCERT GETS DEEMED UNIVERSITY STATUS

SOURCE: THE HINDU

WHY IN NEWS?

> Union Minister of Education Dharmendra Pradhan announced on the 63rd Foundation Day of the National Council of Educational Research and Training (NCERT), that it has been accorded the deemed-to-be-university status by the Ministry of Education.

National Council Of Educational Research And Training

WHAT IS A DEEMED UNIVERSITY?

> **Deemed Universities** are a certain category of a **higher education institutions** that have been granted the designation of "deemed to be university" under **Section 3** of **the University Grants Commission (UGC) Act, 1956.**

> In general words, it indicates that the organization has been given the **authority to provide degree programs** that are comparable to those offered by traditional universities.

BENEFITS OF OBTAINING THE STATUS OF DEEMED TO BE UNIVERSITY:

> **OFFER NEW COURSES**: Without requiring clearance from any other body, they can introduce **new programs and courses** that are pertinent to the **shifting demands and needs** of the education industry.

> **FUNDING**: They have the ability to draw in **more academic members** and students from other locations and backgrounds, as well as **additional funding**.

> **ACADEMIC RESEARCH**: They can work together on **research projects, faculty development initiatives,** and student mobility programs with local, national, and worldwide universities.

> They can take a more active part in putting the **NEP 2020** into action, which calls for changing the Indian educational system.

ABOUT NCERT:

❖ **The Societies Registration Act** allowed for the establishment of the **National Council of Educational Research and Training in 1961.**

❖ It serves as the **principal advisory body** for the central and state governments on issues pertaining to education.

❖ **MAJOR OBJECTIVES**:
   ✓ Conducting, fostering, and coordinating **research in fields** connected to **school education.**
   ✓ Creating and disseminating **model textbooks, supplemental materials**, newsletters, journals, and educational kits.
   ✓ Organise **teacher pre-service and in-service training**.
   ✓ Create and share cutting-edge instructional strategies and practices.
   ✓ **Collaborate and connect with state education agencies**, colleges, non-profit organizations, and other educational institutions.

CLASSIFICATION OF HIGHER EDUCATION INSTITUTIONS IN INDIA:

```
                          HIGHER INSTITUIONS
    ┌──────────┬──────────┬──────────┬──────────┬──────────┐
 CENTRAL      STATE       PRIVATE    DEEMED      INSTITUTIONS OF
 UNIVERSITIESE UNIVERSITIES Ex- BITS  UNIVERSITY  NATIONAL
 Ex- Delhi    Ex-University Pilani    Ex-IISc     IMPORATNCE
 University   of Madras                          Ex- IIT,NIT,IIM
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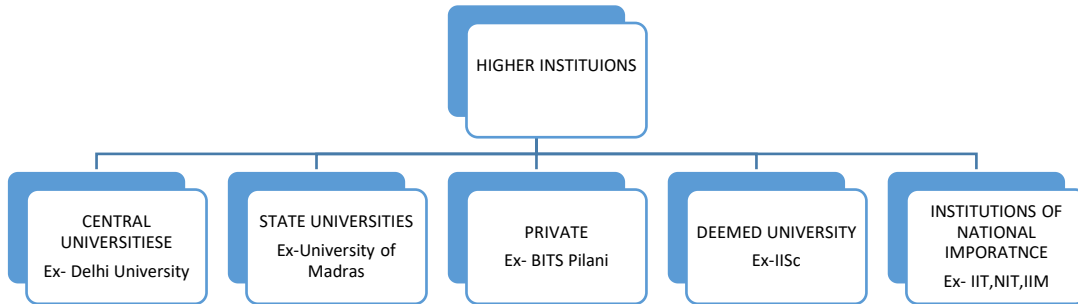
CHALLENGES FACED BY HIGHER UNIVERSITIES IN INDIA:

➢ **Outdated curriculum:** Some institutions' curricula might not be in line with the demands of the labour market or the most recent developments in the sector.

➢ **Regulatory framework**: Regulations that are overly complicated and bureaucratic can inhibit innovation and impede the expansion of institutions.

➢ **Qualified faculty:** Particularly in specialized subjects, there is a dearth of experienced and trained professors.

➢ **Funding strains:** The inability of many institutions to provide high-quality education and infrastructure is hampered by their low financial resources.

STATUS OF HIGHER EDUCATION IN INDIA:

❖ There are 11,779 stand-alone institutions, 42,343 colleges, and 1,043 universities, according to **the All-India Survey of Higher Education (AISHE) 2019–20.**

❖ **Private management** accounts for 78.6% of colleges, of which 65.2% are private-unaided and 13.4% are private-aided.

❖ **3.85 crore students** are enrolled in higher education overall, and **the Gross Enrolment Ratio (GER),** which measures the proportion of students who fall within the eligible age range who are enrolled in higher education, is **27.1%.**

❖ In universities and colleges, **the Pupil-Teacher Ratio (PTR) is 28.**

❖ **Only three Indian universities** made it into the top 200 according to the QS World University Rankings 2023**: IISc Bengaluru (Rank 155), IIT Bombay (Rank 172), and IIT Delhi (Rank 174).**

GOVERNMENT INITIATIVES FOR HIGHER EDUCATION IN INDIA:

	INITIATIVE	OBJECTIVE
1.	Rastriya Uchchatar Siksha Abhiyan	**Improve the quality of higher education.**
2.	National Institutional Ranking framework	**Ranking higher education institutions based on the quality of education.**
3.	UGC/NET JRF	**Support scholars and aspiring teachers.**
4.	PM Research Fellows	**For supporting research in IIT, IISER, NIT, IISc**

WAY FORWARD:

- ➤ **Autonomy and academic freedom:** Give universities and colleges more freedom to decide on academic issues, faculty hiring, and curriculum development.
- • To promote critical thinking and open inquiry, and safeguard academic freedom.
- ➤ **Continuous evaluation and feedback:** Make changes based on student, faculty, and employer input when evaluating the efficacy of educational programs on a regular basis.
- ➤ **Employability skills:** Develop programs in partnership with businesses that emphasize soft skills, entrepreneurship, and practical training to improve graduates' employability.

ASEAN A KEY PILLAR OF ACT EAST POLICY: MODI

SOURCE: THE HINDU

WHY IN NEWS?

➢ During his visit to Indonesia for the **20th ASEAN-India Summit** and the **18th East Asia Summit (EAS),** Prime Minister Narendra Modi highlighted the importance of the Association of Southeast Asian Nations (ASEAN) **in India's Act East policy**.

➢ The summits emphasized India's dedication to enhancing ties with ASEAN members and its position in the East Asian region.

SIGNIFICANCE OF INDIA ASEAN SUMMIT:

ECONMIC COOPERATION
- In 2022–2023, bilateral trade between India and ASEAN reached USD 131.5 billion, accounting for 11.3% of India's overall trade.
- ASEAN INDIA BUSINESS COUNCIL

DEFENCE COOPERATION
- ASEAN DEFENCE MINISTERS MEATING PLUS for discussing security issues.

MARITIME SECURITY
- The Indo-Pacific Oceans Initiative (IPOI)
- Security and Growth for All in the Region (SAGAR)

CONNECTIVITY
- Kaladan Multi-Modal Transit Transport Project for connecting North east and Myanmar

SOCIO CULTURAL TIES
- Programs to increase people-to-people contact with ASEAN, such as inviting ASEAN students to India.
- Providing ASEAN diplomats with a special training program, exchanging parliamentary representatives, etc.

ACT EAST POLICY OF INDIA:

- ➤ The "**Look East Policy**" has been replaced with the "**Act East Policy,**" which was unveiled in November 2014.
- ➤ It is a diplomatic initiative to advance **all levels of economic, geopolitical, and cultural ties with the large Asia-Pacific region.**

DIFFERENCE BETWEEN LOOK EAST AND ACT EAST POLICY:

- ➤ **LOOK EAST POLICY (1990s-2014):** India started implementing the Look East Policy in the **early 1990s** in an effort to **diversify its foreign policy** beyond its established ties.
  - The main goals were to **boost trade with nations in East and Southeast Asia** and to **strengthen economic cooperation**.
  - It sought to tap into the **area's economic vitality.**
- ➤ **ACT EAST POLICY (2014-Present):** The Government of India launched the "**Act East Policy**" in **2014** as a foreign policy effort with the **goal of enhancing India's relations with nations in East and Southeast Asia.**
  - The **goal of this policy**, which developed from the former "Look East Policy," is to strengthen relations with countries in the Asia-Pacific area on a **political, diplomatic, and strategic level** along with **economic relations.**
- ➤ The Indian Prime Minister emphasized the Act East Policy's four pillars.
  - **Commerce**
  - **Culture**
  - **Connectivity**
  - **Capacity enhancement**

CHALLENGES IN THE RELATIONS WITH EAST ASIAN COUNTRIES:

- ➤ **Influence of China:** The Indo-Pacific area is a hotspot for **geopolitical conflict**, with difficulties posed **by China's growing power**.
- ➤ **Differing political systems:** Diplomatic relations and agreement on many topics may be hampered by the diversity of political systems within ASEAN, which range **from democratic to authoritarian countries.**
- ➤ **Security concerns**: The stability of the region may be impacted by security challenges, such as **maritime conflicts in the South China Sea**.
- ➤ **Issues in connectivity:** Enhancing economic and people-to-people links between India and ASEAN nations requires improving **physical and digital connectivity**, and there are **logistical and budgetary difficulties.**

WAY FORWARD

- ➤ **Economic cooperation:** To encourage **increased economic cooperation**, and ensure the efficient implementation and regular revision of the **ASEAN-India Free Trade Agreement**.
- ➤ **Security and defence cooperation:** To improve regional security and foster trust, hold joint military drills and security discussions.
- ➤ **INDIA ASEAN MARITIME EXERCISE(AIME)** for security in the **Indo-Pacific.**
- ➤ **Cultural exchange:** Promote a greater **understanding of Indian culture** and values by providing **financial aid and educational opportunities** for students from ASEAN nations to study in India through various **scholarship programs**.

ASSOCIATION FOR SOUTH EASTERN NATIONS:

❖ **Formation:** On August 8, 1967, in Bangkok, Thailand, ASEAN was established. Indonesia, Malaysia, the Philippines, Singapore, and Thailand are the five original members.
❖ **Membership**: Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar, and Cambodia.
❖ **Chairmanship**: Based on the sequence of the member states' English names in alphabetical order, the ASEAN chairmanship is rotated every year.
❖ **ASEAN Summit**: It is the highest-ranking ASEAN decision-making body. The ASEAN Summit decides goals and policies. According to the ASEAN Charter, the Summit convenes twice annually.
❖ **Demographic dividend**: Approximately 655 million people, or 8.5% of the world's population, reside in the ASEAN.
❖ **ASEAN FORUMS:**
   ✓ **ASEAN REGIONAL FORUM**: Regional defence and confidence building forum.
   ✓ **ASEAN PLUS THREE**: Consultative group of ASEAN along with China, South Korea, and Japan.

   ✓ **EAST ASIA SUMMIT**: It is attended by the leaders of state from ASEAN, Australia, China, India, Japan, New Zealand, Russia, South Korea, and the United States and aims to promote security and development in the region.
   ✓ **ADMM PLUS:** The 10 ASEAN Member States, joined by eight additional nations, namely Australia, China, India, Japan, New Zealand, the Republic of Korea, the Russian Federation, and the United States.

ADB REGIONAL CONFERENCE AND PM GHATI SHAKTI PLAN

SOURCE: PIB

WHY IN NEWS?

➤ At the **2023 Regional Cooperation and Integration (RCI) Conference** held in **Tbilisi, Georgia, organized by the Asian Development Bank (ADB),** during which India presented its **PM Gati Shakti National Master Plan.**
➤ It represents a comprehensive government-**wide strategy for the coordinated planning of diverse infrastructure connections** to key economic and social hubs, ultimately enhancing the effectiveness of logistics.

GatiShakti | myGOV मेरी सरकार

Pragati Ki Gati
Bharat Ki Shakti

Connecting Pillars of New India

To cover infrastructure initiatives like Bharatmala, Sagarmala, Ports, UDAN, Economic Zones, Railways etc

Social infrastructure such as hospitals, universities to be integrated in the next phase

To develop new possibilities for the creation of future economic zones

- The **PM Gati Shakti program** was officially **introduced in October 2021**.
- It encompasses the **National Infrastructure Pipeline**, which was **valued at Rs. 110 lakh crore and was launched in 2019**.
- The **PM Gati Shakti National Master Plan** is a digital platform based on **Geographic Information System (GIS) data**, boasting an extensive array of over **1400 data layers and more than 50 tools.**

CHALLENGES FACED BY LOGISTICS SECTOR IN INDIA:

- **Delays in infrastructure projects:** Delays in major infrastructure initiatives like the establishment of dedicated freight corridors can have repercussions on the transportation of goods.
  - The **Dedicated Freight Corridor (DFC) project**, in particular, has encountered setbacks, resulting in reduced efficiency in freight transport.
- **Last mile connectivity**: **Reaching remote or rural regions** can pose logistical difficulties, and this is particularly challenging for e-commerce companies due to inadequate connectivity.
- **Unorganized nature:** India's logistics sector exhibits significant fragmentation, characterized by the presence of numerous small and disorganized participants.
- **Outdated infrastructure:** As per **the World Bank's Logistics Performance Index**, India holds the 58th position out of 160 countries, highlighting the presence of infrastructure-related issues.
- **Heavy traffic:** Heavy traffic in major urban centers can substantially impede the flow of goods.
  - **Delhi, Mumbai, and Bangalore** rank within the top 10 of the world's most congested cities, resulting in extended travel durations and elevated transportation expenses.
- **Limited use of technology:** The adoption of technology for tracking and management of shipments is still relatively low.

GOVERNMENT INITIATIVES TO SUPPORT LOGISTICS SECTOR IN INDIA:

INITIATIVE	OBJECTIVE
Dedicated Freight Corridors	Expediting the movement of freight trains and reducing congestion on existing rail networks.
National Logistics Policy	To address issues related to logistics, including infrastructure, technology adoption, and regulatory reforms.
E-way bill system	Implemented to monitor the movement of goods more effectively and reduce tax evasion.
Inland waterways development	develop inland waterways aim to provide an alternative mode of transportation
Unified Logistics Interface Program	Single window platform to reduce the cost of logistics.

WAY FORWARD:

- **Adoption of technology:** Promote the adoption of cutting-edge technologies such as GPS tracking, RFID, and IoT within the logistics sector to enhance cargo monitoring and management.
- Encourage the utilization of digital platforms for the real-time exchange of information and improved visibility throughout the supply chain.
- **Integrated transport:** Encourage the seamless blending of different transportation modes (such as road, rail, air, and water) to create a cohesive and multimodal logistics network.
- Establish intermodal transportation centres to streamline the transfer of cargo between these diverse modes.
- **Public-private partnership projects**: Engage in partnerships with private sector firms to facilitate investments in logistics infrastructure projects using Public-Private Partnership (PPP) models.

INDIA-SOUTH KOREA RELATIONS

SOURCE: [THE HINDU](#)

WHY IN NEWS?

- The recent **Camp David summit in** August, which brought together the leaders of the **United States, Japan, and the Republic of Korea (ROK),** signifies the start of a fresh era in the strategic partnership between these long-standing allies.
- In parallel, as **India and ROK celebrate the 50th anniversary of their diplomatic ties,** the Camp David summit and the **innovative strategic approach** coming from Seoul present a distinctive chance for New Delhi to **redefine its relationship** with South Korea, particularly within the context of the **Indo-Pacific region.**

CAMP DAVID SUMMIT:

- The summit takes place involving the **heads of state from the United States, Japan, and the Republic of Korea (ROK).**
- This gathering represents a significant move towards the improvement of relations between Seoul and Tokyo.
- This showcases their shared acknowledgment of the evolving regional security landscape among these three nations.

SIGNIFICANCE OF THE CAMP DAVID SUMMIT:

STRATEGIC ALLIANCES

- The summit illustrates the desire for a multipolar international system in East Asia, in conjunction with various groupings and alliances.
- AUKUS: USA,UK,AUSTRALIA
- QUAD:INDIA,JAPAN,AUSTRALIA,USA
- CHIP 4 Alliance: US,JAPAN,TAIWAN,SOUTHKOREA

ENSURING REGIONAL SECURITY

- It suggests a necessary improvement in the relationship between South Korea and Japan.
- It represents a significant change in Seoul's conventional strategy of avoiding any actions that might upset China under all circumstances.

QUAD MEMBERSHIP:

- South Korea's aspiration to join the Quad alliance could become more attainable, with the possibility of future inclusion in Quad Plus.

HOW WILL THE SUMMIT BENEFIT THE INDIA-SOUTH KOREA RELATIONS?

➢ **INDO-PACIFIC STRATEGY:**
   Given South Korea's geographic closeness to China and its alliance with the United States, it has become an important and beneficial partner for India within the Indo-Pacific region.

➢ **GLOBAL SOUTH:**
   President Yoon Suk Yeol's ambition is to position South Korea as a significant global player in the south by enhancing its involvement in the Indo-Pacific region.

HISTORY OF INDIA SOUTH KOREA RELATIONS:

NARURE OF RELATIONSHIP	DETAILS
HISTORICAL RELATIONS	As per the 13th-century Korean historical document titled "SamgukYusa" or "Heritage History of the Three Kingdoms," Princess Suriratna of Ayodhya in India arrived in Korea in the year 48 AD.
CULTURAL RELATIONS	Buddhism was introduced to Korea through a maritime route when Princess Suriratna and her brother Monk Jangyu arrived in the region. In 2011, the establishment of the Indian Cultural Centre in Seoul was undertaken to display India's diverse cultural heritage .
POLITICAL RELATIONS	Shri K P S Menon, a former Indian diplomat, served as the Chairman of the 9-member UN Commission established in 1947 to oversee elections in Korea. In 2018, both nations released a joint statement delineating their "Vision for People, Prosperity, Peace, and Our Future."
DIPLOMATIC RELATIONS	Consular relations were initiated in 1962, and both countries formally established diplomatic relations in 1973.
DEFENCE RELATIONS	In the year 2020, India and South Korea entered into an agreement known as a "Roadmap for defence Industries Collaboration."
TRADE AND ECONOMIC RELATIONS	Both countries forged a "Strategic Partnership" in 2010, a status that was subsequently upgraded to a "Special Strategic Partnership" in 2015.

CHALLENGES IN INDIA-SOUTH KOREA RELATIONS:

➢ **TRADE IMBALANCES:**
   A source of potential disagreement arises from the trade imbalance where South Korea exports more to India than it imports from India.

➢ **ROLE OF NORTH KOREA:**
   The manner in which South Korea engages with North Korea and its interactions with nations such as the United States and China can have repercussions on India's regional concerns and interests.

➢ **GEOPOLITICAL COMPLEXITIES:**
   The intricate geopolitical dynamics within the Indo-Pacific region can pose challenges to the relationship between India and South Korea, particularly concerning matters of security and trade.

WAY FORWARD:

➢ **ENHANCE DEFENCE RELATIONS:**

   • India should take advantage of South Korea's readiness and capability to meet its defence requirements under the framework of India's 'Make in India' initiative.
   • Example: The K9 Vajra, a self-propelled 155 mm howitzer manufactured by L&T with technology licensed from South Korea's Hanwha Defence, serves as an illustration of this collaboration.
   • Similarly, there is potential for co-production in India of South Korean-made K2 Black Panther tanks for use by the Indian Army or for export to other nations.

➢ **ENHANCE POLITICAL RELATIONS:**
  • Enhanced political and diplomatic relations could be fostered through yearly summits, 2+2 dialogues, and reciprocal visits between leaders.
➢ **TECHNOLOGICAL COLLABORATION:**
  • Considering Seoul's impressive history of providing more cost-effective and efficient nuclear reactors, India might contemplate acquiring reactors constructed in South Korea.
  • Discuss on a collaborative effort encompassing South Korea, Japan, India, and the United States in the field of Critical and Emerging Technology (iCET), similar in nature to the recently finalized India-U.S. iCET.

INDIA AND SAUDI ARABIA RELATIONS

SOURCE: THE HINDU

WHY IN NEWS?

➢ Just two days after the inauguration of the India-Middle East-Europe Economic Corridor, Prime Minister Narendra Modi emphasized the crucial strategic partnership between India and Saudi Arabia.

➢ This declaration came during the official visit of Crown Prince Mohammed Bin Salman of Saudi Arabia, **where both nations agreed to establish a collaborative task force to expedite the West Coast refinery project.**

➢ The visit of the Crown Prince holds significance, especially considering that it occurred several months after Saudi Arabia reconciled with Iran through a deal brokered by China.

SIGNIFICANCE OF SAUDI ARABIA FOR INDIA:

Energy security	•Saudi Arabia is one of India's top suppliers of crude oil. • Ensuring a stable and reliable energy supply is crucial for India's economic growth and energy security.
Strategic partnership	•Both nations share common concerns about regional stability and security, making them natural strategic partners in the Middle East.
Diplomatic ties	•Saudi Arabia has supported India's interests on various international platforms, including its bid for a permanent seat on the United Nations Security Council.
Regional security	•India and Saudi Arabia cooperate on counterterrorism efforts, sharing intelligence and working to combat radicalization and extremism.
Cultural ties	•Saudi Arabia is home to the two holiest cities in Islam, Mecca and Medina.

CHALLENGES IN THE RELATIONS BETWEEN INDIA AND SAUDI ARABIA:

➢ **Geopolitical challenges:** India maintains relations with both Saudi Arabia and Iran.

The ongoing rivalry between these two nations can create diplomatic challenges for India in balancing its interests.

➢ **Labour issues:** The treatment of Indian expatriates and laborers in Saudi Arabia has been a source of occasional tension, with reports of exploitation and abuse.

➢ **Oil price fluctuations:** India is heavily reliant on Saudi Arabia for oil imports. Fluctuations in global oil prices can impact India's economy and fiscal stability, leading to occasional tensions in the energy partnership.

WAY FORWARD:

➢ **Diversification of economic relations:**

Expand economic cooperation beyond energy, including investments in infrastructure, technology, manufacturing, and healthcare sectors.

Encourage Saudi investments in India and vice versa.

➢ **Promoting cultural ties:**

Utilize India's historical and cultural ties with Saudi Arabia, especially in the context of Islamic diplomacy, to foster greater cooperation.

➢ **Peaceful resolution:**

Maintain regular high-level diplomatic engagement and dialogues to address any emerging challenges and opportunities.

HISTORY OF RELATIONS BETWEEN INDIA AND SAUDI ARABIA

1.	HISTORICAL RELATIONS	• **Indian goods such as spices, textiles, and precious stones were sought after by Arab traders, while India imported items like dates and incense.**
2.	CULTURAL RELATIONS	• **Saudi Arabia assists more than 175,000 Indian pilgrims during the Hajj annually.**
3.	ECONOMIC RELATIONS	• **Support Saudi Arabia's Vision 2030 by encouraging Indian businesses to invest in the kingdom's economic diversification initiatives.** • **India Middle East Europe Economic corridor planned at recent G20.**
4.	DEFENCE RELATIONS	• **Naval exercises like AL- MOHED-AL HINDI**
5.	ENERGY RELATIONS	• **Saudi ARAMCO, in collaboration with ADNOC from the United Arab Emirates, has reached an agreement to join forces in the Ratnagiri (Maharashtra) Refinery and Petro-Chemical project Ltd., a Joint Venture valued at $44 billion.**
6.	TRADE & INVESTMENT	• **Saudi Arabia is India's 4th largest trading partner.** • **Trading in local currencies** • **Discussions on FTA between India and Gulf Cooperation Council, Double taxation agreements.** • **Both parties have also reached an agreement to establish a collaborative task force for a Saudi investment of $100 billion, a significant portion allocated to a refinery project along India's western coastline, which has faced delays.**

INDIA CANADA RELATIONS

SOURCE: THE INDIAN EXPRESS

WHY IN NEWS?

➢ On 19 september, Ottawa and New Delhi escalated their diplomatic tensions by mutually expelling each other's diplomats.

➢ This move came as the relationship between the two nations teetered on the edge, with Canada accusing India of involvement in the assassination of a Khalistani Sikh extremist in North America.

➢ In a recent incident, Hardeep Singh Nijjar was fatally shot outside a Sikh temple in Surrey, British Columbia.

➢ Nijjar was an advocate for the creation of an independent Sikh nation called Khalistan, separate from India's Punjab state. Indian authorities had been pursuing him, officially labelling him a "terrorist" in July 2020.

SIGNIFICANCE OF INDIA CANADA RELATIONS:

➢ **Historical relations:**

- **Late 19th century**: Indian immigrants came to Canada for work in railways and lumbering industries.

➢ **Political relations:**

- India and Canada established **diplomatic ties** in 1947.

- Indian Prime Minister's visit to Canada in April 2015, elevated their **bilateral ties** to a **strategic partnership.**

- In October 2019, Mr. Raj Saini (M.P) became Chair of the **Canada-India Parliamentary Association.**

- Both nations have similarities in their **parliamentary structures and processes.**

➢ **Economic relations:**

- Canada considers India its **9th largest export destination**.

- Ongoing discussion of a **Comprehensive Economic Partnership Agreement (CEPA)** encompassing multiple aspects such as trade, services, investment, and trade facilitation.

- **Indian exports to Canada:**
Pharmaceuticals, iron and steel, chemicals, gem and jewelry, nuclear reactors, and boilers.

- **Indian imports from Canada:**
Minerals, ores, vegetables, fertilizers, paper, and pulp.

- **The India Oil Corporation** holds a 10% stake in a Liquid Natural Gas project located in British Columbia.

➢ **Security and defence relations:**

- **Mutual Legal Assistance Treaty in 1994 and an Extradition Treaty in 1987:** For the exchange of information on criminal matters.

- **Counterterrorism efforts:** Joint Working Group (JWG)

- **International cooperation through G20 and UN.**

- **MOU between DRDO and Canada's York University:** On chemical and biological warfare matters.
- ➤ **Cooperation in science and technology:**
  - **MOU between ISRO and Canadian Space Agency:** for space exploration
  - **ANTRIX, ISRO's commercial division,** has launched numerous **Canadian satellites.**
  - **IC-IMPACTS Program**: collaborates on healthcare, Agri-biotech, and waste management projects.
  - **Scientific research on Cold Climate (Arctic):** Program by the Department of Earth Sciences and Polar Canada
- ➤ **People-to-people ties:**
  - **Large diaspora**: Canada houses **1.6 million Indian-origin** individuals, over 3% of the population.
  - The current House of Commons, with a total of 338 members, **boasts 22 Members of Parliament of Indian heritage.**
  - India has become the leading contributor of foreign students to Canada.
  - Canada is among the 28 nations included in the Academic and Research Collaboration Promotion Scheme (SPARC).

CHALLENGES IN THE RELATIONS:
- ➤ **Issues with Sikh separatist groups:**
  - Sikhs represent a notable segment of the Indian diaspora in Canada, accounting for slightly over 500,000 individuals.
  - The Ontario Provincial Parliament passed a resolution classifying the 1984 anti-Sikh riots as 'genocide,' a stance that enjoys support from numerous Canadian leaders.

- ➤ **Issues in trade relations:**
  - No progress on bilateral agreements in CEPA and FTAs
  - Obstacles in the form of structural barriers, including intricate labour regulations, protectionist trade policies, and bureaucratic red tape, pose challenges to the advancement of Indo-Canadian relations.
- ➤ **Immigration and Visas:**
  - Immigration policies and visa matters have been a source of disagreement, particularly due to the significant number of Indian students and skilled professionals aiming to relocate to Canada.
  - This raised concerns regarding the prolonged processing times and limitations associated with obtaining visas.

WAY FORWARD:
- ➤ **Diaspora engagement:**
  - Encourage the Indian diaspora in Canada to bridge nations, acknowledge contributions, and foster involvement in various sectors.

➢ **Energy cooperation:**

- As the United States urges reductions in Iranian oil imports, Canada could serve as an alternative energy supplier for India.
- India's oil demand is projected to double by 2040, according to the Oil Processing and Exporting Countries (OPEC) World Oil Outlook Report 2040.

➢ **Cultural and academic exchanges:**

- Promote cultural awareness through festivals, art displays, and academic partnerships, while stimulating collaborative research and scholarships to bolster educational connections.

IN INDIA, 74% CANNOT AFFORD A HEALTHY DIET

SOURCE: The Hindu

WHY IN THE NEWS?

➢ The recently released "**State of Food Security and Nutrition in the World" (SOFI) 2023** study reveals that although the cost of a nutritious meal has gone up recently in India, it is still the lowest among the BRICS countries (including the six new additions) and India's neighbours**.**

➢ The percentage of **individuals who can afford** such a nutritious diet **is still low**, with India being at the bottom of the list because **of stagnating or declining income levels**.

MAJOR FINDINGS OF THE REPORT:

➢ The **cost of sustaining a healthy diet** increased by **over 9% in Asia** between 2019 (before the COVID-19 pandemic) and 2021, the largest increase of all regions.

➢ **Africa and Asia** saw the **biggest increases in the proportion of persons** who could not afford a healthy diet between 2019 and 2021.

➢ Together, the two continents accounted for **92% of the global increase**.

➢ The **majority of Asians (1.4 billion)** and those who could not afford a healthy diet (72%) lived in South Asia. This rate was almost two times higher than the region's average.

➢ The **largest number of individuals (712 million**) and the **highest percentage (85%)** of **Africans** who could not afford a healthy diet were found in Eastern and Western Africa combined.

HEALTH AND MALNUTRITION IN INDIA:

➢ Globally, **wasting** was expected to afflict **45 million children under the age of five** (6.8%) in 2022, with 13.6 million of those children experiencing severe wasting. Half of them live in India.

➢ In 2022, there were **148.1 million stunted children** under the age of five in the world.

➢ **Africa and Asia** together account for **52% of all affected youngsters** worldwide.

➢ Worldwide, there **are 37 million under-five overweight children**, a rise of about four million since 2000. India's **overweight rate** increased from 2.2% in 2012 to 2.8% in 2022.

GOVERNMENT INITIATIVES:

INITIATIVE	OBJECTIVE
1. **MID DAY MEAL PROGRAM**	The major goal is to give children in **government-run and aided primary and upper** primary schools **a nutritious lunch.**
2. **POSHAAN ABHIYAN**	Focus on **reducing anemia in women, children, pregnant and lactating women**.
3. **NATIONAL FOOD SECURITY ACT 2013**	Provide **food grains at subsidized rates** to lower-income groups.
4. **PM MATRU VANDANA YOJANA**	**Financial and nutritional support to pregnant and lactating women.**
5. **INTEGRATED CHILD DEVELOPMENT SCHEME**	**All-round development of children at Anganwadi centers.**
6. **ASPIRATION DISTRICT PROGRAM**	Transforming the most **underdeveloped and disadvantaged districts** in all indicators**.**

WHY PEOPLE CANNOT AFFORD A HEALTHY DIET:

➢ **Income Inequality:** A significant portion of the Indian population earns low incomes, which makes it challenging to afford nutritious foods.

➢ **High Food Prices:** The cost of many nutritious foods, such as fruits, vegetables, lean proteins, and dairy products, has risen over the years, making them less accessible to low-income individuals and families.

➢ **Limited Access to Nutrient-Rich Foods**: Many rural and underserved areas lack access to markets and stores that sell fresh and affordable fruits and vegetables.

➢ **Preference for Affordable Caloric Intake:** People with limited resources may prioritize calorie-dense but nutrient-poor foods because they are more affordable, even if they are not as healthy.

➢ **Lack of Nutrition Education:** Limited awareness and education about the importance of a balanced diet and nutrition can lead to unhealthy eating habits.

➢ **Food Insecurity:** Food insecurity, which affects a significant portion of the population, often results in compromised food choices and inadequate access to healthy foods.

➢ **Infrastructure Challenges:** Inefficient supply chains, lack of cold storage facilities, and transportation issues can lead to food wastage and increased food prices.

➢ **Cultural and Dietary Preferences:** Cultural factors and dietary preferences also influence food choices, and these may not always align with a nutritious diet.

WAY FORWARD:

- **Fortification of foods:** Encourage the **addition of vital vitamins** and minerals to common meals like **salt, wheat, and rice** in order to alleviate **micronutrient deficiencies**.
- **Diversifying the diet:** To promote a well-rounded diet, encourage the consumption of a variety of **locally available, nutrient-dense foods**, such as fruits, vegetables, legumes, and nuts.
- **Programs for Community-Based Nutrition**: To identify and address malnutrition in their communities, **community leaders, volunteers, and healthcare professionals** should be involved in community-based nutrition programs.
- **Taking Social Determinants into Account:** Recognise and address the **societal causes of malnutrition,** including access **to clean water and sanitation, gender inequality, and poverty.**
- **Government Commitment:** Make sure there is political will and government commitment to give hunger and malnutrition a **high priority and adequate funding**. The government must prioritize on **SDG2.**

CENTRAL BANK DIGITAL CURRENCIES AND CROSS BORDER PAYMENTS

SOURCE: LIVEMINT , TH , IE

WHY IN NEWS?

RBI Governor Shaktikanta Das highlighted the challenges in cross-border payments and emphasized that Central Bank Digital Currencies (CBDCs) can enhance efficiency, reduce costs, and increase transparency in these transactions.

ABOUT CBDCs:

Central bank digital currencies (CBDCs) are the digital form of a government-issued currency that isn't pegged to a physical commodity. They are issued by central banks, whose role is to support financial services for a nation's government and its commercial-banking system, set monetary policy, and issue currency.

WHY THE PUSH FOR CBDCs
Boosts financial inclusion
Makes the economy less dependent on cash
Creates a scenario for lower usage of private digital currencies
Reduction in cost of printing currency
Retail CBDC helps access to safe money for payments and settlements
Wholesale CBDC helps lower transaction costs for banks, quicker settlement of trades

SOURCE Forbes India

DIFFERENCE BETWEEN CBDC AND CRYPTO CURRENCY:

Aspect	Central Bank Digital Currency (CBDC)	Cryptocurrency
Issuer	Central banks or government	Decentralized network/community
Backing	Backed by the government's trust	Not backed by any central authority
Regulation	Subject to government regulations	Generally, operates outside of traditional financial regulations
Control	Centralized control and governance	Decentralized, often governed by a consensus mechanism
Monetary Policy Impact	Can be used to implement monetary policies and manage the money supply	Operates independently of central banks, impacting monetary policy less directly
Stability	Generally stable value, tied to the national currency	Can have high price volatility
Transparency	Transactions are traceable and may require KYC (Know Your Customer)	Offers varying degrees of anonymity and privacy
Use Cases	Mainly for government payments, interbank settlements, and retail transactions	Primarily used as a digital asset or medium of exchange
Legal Status	Legally recognized and issued by governments	Legal status varies by country, often facing regulatory scrutiny
Examples	Examples include China's digital yuan (e-CNY) and the proposed US digital dollar	Examples include Bitcoin, Ethereum, and thousands of other cryptocurrencies

WHY DO WE NEED CBDCs?

1. **Cost-Efficient Management:** CBDC will reduce the costs associated with physical cash management.
   a. EXAMPLE: In FY22, India spent ₹4,984.80 crore on printing money and ₹4,012.10 crore the previous year.
2. **Boost to Digital Economy and Financial Inclusion:** CBDC will address the country's increasing need for cash. Additionally, it will stimulate India's digital economy, promote financial inclusion, and enhance the overall efficiency of the financial system.
3. **Security in Uncertain Times:** It being central bank money, provides a secure option for individuals during uncertain situations like the COVID-19 pandemic.
4. **Diverse Saving and Transaction Choices**: e₹ offers various options such as e-wallets, mobile banking, and UPI for making payments and managing savings.
5. **Enhanced Payment Safety:** It is a secure central bank instrument with direct access to RBI money for payments and settlements. It serves as an electronic version of cash, primarily designed for retail transactions.

DISADVANTAGES OF CBDCs:

1. **Privacy Concerns:** CBDCs may raise privacy issues as transactions can be easily tracked.
2. **Bank Disintermediation:** They might lead to disintermediation of commercial banks, impacting their profitability.
3. **Cybersecurity Risks:** CBDC systems are susceptible to cyberattacks, requiring robust security measures.
4. **Depositor Behaviour:** People might shift deposits from banks to CBDCs, affecting the banking system.
5. **Cross-Border Regulatory Challenges:** Regulating cross-border CBDC transactions can be complex.
6. **Technological Barriers:** Implementation and maintaining CBDC systems require advanced technology and infrastructure

STATUS OF CBDCs IN INDIA:

➢ The **Reserve Bank of India (RBI) has been exploring the possibility** of launching a central bank digital currency (CBDC) in India since 2019. In her 2021-22 budget speech, the **Finance Minister announced that the RBI would launch a CBDC** in the coming fiscal year.
➢ The RBI has been conducting a **pilot project for the CBDC since December 2022**. The pilot is being **conducted in two phases**: a **wholesale CBDC (w-CBDC) pilot and a retail CBDC (r-CBDC)**pilot.
➢ The **w-CBDC pilot is being conducted with a limited number of banks**, while the **r-CBDC pilot is being conducted with a wider range of stakeholders**, including retail investors and merchants.
➢ The **RBI has not yet announced a timeline for the launch of the CBDC**. However, it isexpected that the CBDC will be launched in India in the next few years.

WAY FORWARD:

➢ **Pilot Programs:** Continue and expand CBDC pilot programs to test and refine the technology, infrastructure, and user experience.
➢ **Regulatory Clarity:** Develop clear and comprehensive regulatory frameworks that address the legal, technical, and security aspects of CBDCs.
➢ **Public Awareness:** Launch public awareness campaigns to educate citizens about the benefits and usage of CBDCs, promoting their adoption.
➢ **Interoperability:** Ensure interoperability between different CBDCs and existing payment systems to facilitate seamless transactions.

➤ **Financial Inclusion:** Use CBDCs as a tool to enhance financial inclusion by reaching underserved and remote populations.

DIFFERENT TYPES OF MONEY:

Type of money	Example	Description
Commodity money	Gold, silver, copper	Money that has intrinsic value, meaning that it is worth something in and of itself. It is used as a medium of exchange because it is durable, portable, divisible, and has a consistent value.
Fiat money	US dollar, euro, Indian rupee	Money that is not backed by a physical commodity. Its value is based on the government's promise to accept it as payment for goods and services. It is used as a medium of exchange because it is widely accepted and has a stable value.
Fiduciary money	Banknotes, cheques	Money that is not backed by a physical commodity, but it is backed by the full faith and credit of the government. It is used as a medium of exchange because it is widely accepted and is considered to be a safe store of value.
Commercial bank money	Deposits in checking accounts	Money that is created by commercial banks when they make loans. It is used as a medium of exchange because it is easily accessible and can be used to make payments quickly and easily.
Digital money	Bitcoin, Ethereum	Money that exists only in digital form. It is used as a medium of exchange because it is secure and can be transferred quickly and easily across borders.

GIG ECONOMY IN INDIA

SOURCE: TH , IE , PMINDIA

WHY IN NEWS?

➢ The e-commerce industry in India is **projected to generate 7,00,000 gig jobs by the end of H2 2023**, with a focus on **e-commerce, logistics, warehousing, last-mile delivery, and call centre roles**.

➢ Theseopportunities are expected to be concentrated in tier-2 and tier-3 cities.

WHAT IS GIG ECONOMY?

➢ A **Gig economy** is a free market system in which temporary positions are common and organizations contract with independent workers for short-term engagements.

➢ **GIG WORKER:** According to the **Code on social security 2020**. A gig worker is a person who performs work or participates in work arrangements and earns from such activities, outside of the traditional employer-employee relationship.

STATUS OF GIG ECONOMY IN INDIA:

➢ Around **56% of India's new employment opportunities** come from the gig economy, encompassing **both blue-collar and white-collar sectors**.

➢ While traditionally associated with blue-collar roles, the gig economy is now witnessing growth in white-collar positions like consultants, salespeople, web designers, content writers, and software developers.

➢ The gig economy has the potential to create up to 90 million jobs in non-farm sectors, contributing an **estimated 1.25% to India's GDP in the long term.**

➢ As India aims to achieve a $5 trillion economy by 2025, the gig economy is expected to play a crucial role in addressing income disparities and unemployment.

➢ **NITI Aayog** recently published a report titled **'India's Booming Gig and Platform Economy,'** projecting that the **gig workforce will reach 235 million by 2029-30.**

➢ In the 2020-21 fiscal year, approximately 7.7 million gig workers were part of the gig economy, constituting 2.6% of the non-agricultural workforce and 1.5% of the total workforce in India.

SHORT
GLOBAL
FLEXIBILITY
FEATURES OF GIG
LACK OF JOB
DIVERSE
PLATFORM
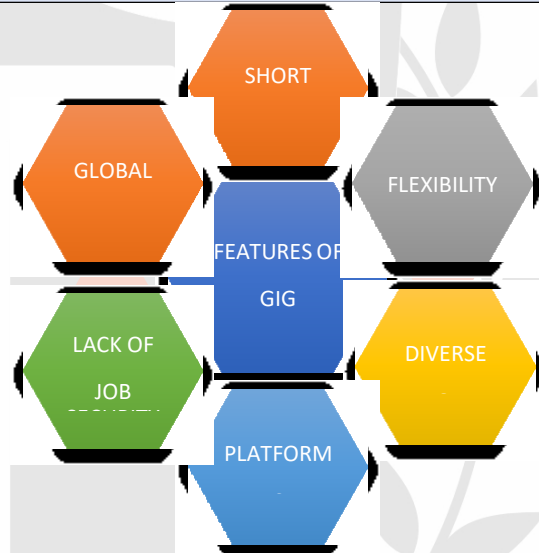
CHALLENGES OF THE GIG ECONOMY:

1. **Lack of Job Security:** Gig workers often lack job security, employment benefits, and legal protections that traditional employees enjoy.
2. **Income Inconsistency:** Gig workers face income volatility as their earnings depend on the number of gigs they secure, making financial planning difficult.
3. **Limited Access to Benefits:** Gig workers typically don't have access to health insurance, provident funds, or other social security benefits.
4. **No Statutory Protections:** Many gig workers are not covered by labour laws, which can leave them vulnerable to exploitation.
5. **Skill Mismatch:** Gig workers may have skills that don't match the demands of available gigs, leading to underemployment.
6. **Unequal Bargaining Power:** Gig platforms often have more bargaining power than individual workers, which can lead to unfavourable terms and conditions.

GOVERNMENT INITIATIVES TO SUPPORT GIG ECONOMY IN INDIA:

Initiative	Objective	Key features
National Digital Employment Exchange (NDXE)	To create a unified platform for job seekers and employers to connect.	The NDXE will be a web-based platform that will allow job seekers to register their profiles and employers to post job openings. The platform will also provide features such as skill mapping, career counselling, and training.
Skill India	To upskill and reskill workers for the gig economy.	The Skill India initiative provides a range of training programs for workers in different sectors. The programs are designed to help workers acquire the skills they need to succeed in the gig economy.
Pradhan Mantri Kaushal Vikas Yojana (PMKVY)	To provide training to youth in emerging sectors such as IT, e-commerce, and hospitality.	The PMKVY is a government-funded training program that provides free training to youth. The program is designed to help youth acquire the skills they need to get jobs in the gig economy.
Start-up India	To promote entrepreneurship and innovation.	The Start-up India initiative provides a range of benefits to start-ups, such as tax breaks, funding, and mentoring. The initiative is designed to help start-ups succeed in the gig economy.
Mudra Yojana	To provide loans to small businesses.	The Mudra Yojana is a government-funded loan program that provides loans to small businesses. The program is designed to help small businesses grow and create jobs.
E-Shram portal	To create a national database of gig workers.	The e-Shram portal is a government-run website that collects information about gig workers. The information collected on the portal will be used to provide benefits and services to gig workers.

WAY FORWARD:

- ➤ **Clear Regulatory Framework:** Establish a clear and balanced regulatory framework that recognizes gig workers' rights and responsibilities while providing flexibility for platform-based work.
- ➤ **Social Security Nets:** Develop customized social security schemes, such as health insurance, retirement benefits, and unemployment protection, tailored to the needs of gig workers.
- ➤ **Skill Development:** Invest in skill development and training programs to enhance the employability and income potential of gig workers, especially in emerging sectors like technology.
- ➤ **Financial Inclusion:** Promote financial inclusion by enabling gig workers to access formal banking services, credit, and insurance to manage their finances and risks.

GLOBAL BIOFUEL ALLIANCE

SOURCE: TOI

WHY IN NEWS?

During the G20 Summit, **Prime Minister Modi introduced the Global Biofuels Alliance (GBA),** bringing together **more than 30 countries and international groups** with the aim of encouraging the use of biofuels and increasing global access to bioenergy.

ABOUT GLOBAL BIOFUEL ALLIANCE

➢ **OBJECTIVE:** The initiative's primary goal is to bring together the largest consumers and producers of biofuels to promote the development and deployment of biofuels.

➢ Its overarching aim is to position biofuels as a pivotal component in the transition to renewable energy, while also contributing to job creation and economic growth.

➢ **Member Participation:** A total of 19 countries and 12 international organizations have already committed to joining this endeavour.

➢ **Support from G20 Countries:**
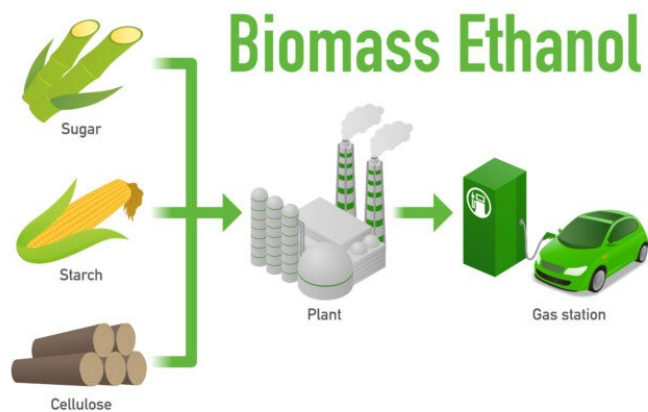
Seven G20 nations, including Argentina, Brazil, Canada, India, Italy, South Africa, and the USA, are backing the GBA. Four invitee countries to the G20, namely Bangladesh, Singapore, Mauritius, and the UAE, are also lending their support.

➢ **Non-G20 Support:**

➢ Eight non-G20 countries, namely Iceland, Kenya, Guyana, Paraguay, Seychelles, Sri Lanka, Uganda, and Finland, have agreed to become founding members of the GBA.

➢ **International Organizations:**

The GBA has garnered support from various international organizations, including the World Bank, Asian Development Bank, World Economic Forum, World LPG Organization, UN Energy for All, UNIDO, Bio futures Platform, International Civil Aviation Organization, International Energy Agency, International Energy Forum, International Renewable Energy Agency, and the World Biogas Association.

SIGNIFICANCE OF THE ALLIANCE:

➢ Members of the GBA consist of significant biofuel producers and consumers.

➢ Specifically, the USA, accounting for 52%, Brazil at 30%, and India at 3%, collectively contribute to approximately 85% of ethanol production and approximately 81% of ethanol consumption.

BENEFITS OF BIOFUELS:

- ➢ **Accessibility:** Biofuels are easily producible as they primarily rely on widely available biomass resources.
- ➢ **Reduction in waste:** Biofuels can also be manufactured using waste materials such as municipal sewage and inedible crop parts, contributing to waste reduction efforts.
- ➢ **Decreased Reliance on Crude Oil and Non-renewable Resources:** Biofuels help reduce dependence on crude oil and other finite sources of energy.
- ➢ **Economic development:** Biofuel production often involves labour-intensive processes, leading to job creation and economic development. The establishment of second-generation biofuel production units in rural areas can further boost local economies.

CHALLENGES ASSOCIATED:

- ➢ **Lower Efficiency:** Biofuels exhibit lower efficiency compared to fossil fuels, as fossil fuels yield more energy upon combustion.
- ➢ **Biodiversity:** Genetically modified crops used in fourth-generation biofuel production may pose a risk to biodiversity by potentially diminishing natural plant diversity.
- ➢ **Availability of land:** Biofuel production demands significant land resources, especially in the case of second-generation biofuels, which often utilize non-food crops, thus necessitating substantial space.
- ➢ **Food security**: First-generation biofuels utilize food sources, raising concerns about potential food shortages if biofuel production is expanded extensively.
- ➢ **Extensive Water Usage:** The extensive water requirements for irrigating biofuel crops and fuel manufacturing can strain local and regional water resources. However, this issue is less prominent in the case of third-generation biofuels.

GOVERNMENT EFFORTS FOR BIOFUEL PRODUCTION:

INITIATIVE	OBJECTIVE
1. GOBARDAN SCHEME	Support villages to manage cattle waste.
2. SATAT YOJANA	For promoting green fuel
3. PM JIVAN YOJANA	To provide financial help for commercial production
4. NATIONAL BIOFUEL POLICY 2018	For domestic biofuel production

WAY FORWARD:

➢ **Promote research:** Invest in technologies for the production of advanced biofuels, such as cellulosic ethanol and algae-based biofuels

➢ **Create market demand:** Create a stable market for biofuels by promoting their use in various sectors, including transportation and industry.

➢ **Feedstock Diversification:** Promote the cultivation of non-food, sustainable feedstocks like algae, jatropha, and waste biomass to reduce competition with food crops.

➢ **Infrastructure Development:** Develop the necessary infrastructure for biofuel production, storage, and distribution, including setting up biofuel refineries and distribution networks.

➢ **Incentives for Farmers:** Provide incentives and support to farmers for growing biofuel feedstocks, creating an additional income source.

➢ **Technology Transfer:** Collaborate with international partners to access advanced biofuel technologies and expertise.

National Policy on Biofuels 2018
Salient features

An indicative target of **20%** blending of ethanol in petrol and **5%** blending of biodiesel in diesel is proposed by 2030.

With a thrust on **Advanced Biofuels**, the Policy indicates a viability gap funding scheme for **2G ethanol Bio refineries** of **Rs.5000 crore in 6 years** in addition to additional tax incentives, higher purchase price as compared to **1G biofuels.**

Categorization of Biofuels into **Basic Biofuels** - First generation(1G) Bioethanol & biodiesel and **"Advanced Biofuels"**- Second Generation(2G) ethanol, drop-in fuels, **algae based** Third Generation(3G) Biofuels.

Increase scope of raw material for ethanol procurement by encouraging Intermediate (**B-Molasses),** Sugarcane Juice, other Sugar containing materials and damaged as well as surplus food grains.

Develop **National Biomass repository** by conducting appraisal of biomass across the Country.

Bio diesel production to be encouraged from non edible oilseeds, **used cooking oil,** short gestation crops and development of supply chain mechanisms.

Thrust on **research, development and demonstration** in the field of **Biofuel feedstock** production, advanced conversion technologies from identified feedstock.

Setting up of National **Biofuel coordination committee (NBCC)** under **Ministry of Petroleum & Natural Gas** and Working Group on Biofuels.

LEGALISING CANNABIS CULTIVATION

WHY IN NEWS?

➢ As the **Himachal Pradesh government moves closer to permitting the cultivation of cannabis (specifically hemp)** within the state, there is a sense of optimism among growers regarding the potential economic benefits.

➢ However, it is essential to acknowledge the associated concerns and the various impacts on society.

WHAT IS CANNABIS?

➢ Cannabis is a term that encompasses **a trio of plants recognized for their psychoactive characteristics, namely Cannabis sativa, Cannabis indica, and Cannabis ruderalis**.

➢ As per **the World Health Organization (WHO)**, the term "cannabis" is a broad descriptor referring to various psychoactive products derived from the Cannabis sativa plant.

➢ **The Atharva Veda**, written around 1400 BCE, holds early records of cannabis's sacred role in India. Hindu god Shiva is linked as a cannabis user, titled the "Lord of bhang."

Figure 4CANNABIS PLANT

BENEFITS OF LEGALISING CANNABIS:

➢ **HEALTH BENEFITS:**

Studies have explored the potential health advantages of cannabis, but its medical utilization varies by location due to legal and regulatory disparities.

Some of them include:

- Neuropathic and arthritic pain management.
- Appetite stimulation in patients especially those with HIV/AIDS.
- Treatment of neurogenerative disorders like Parkinson's disease.
- Treating sleep disorders, anxiety, and inflammation.

➢ **PROMOTION OF TRADITIONAL MEDICINE:**

- It's undeniable that Ayurveda recognizes cannabis as a medicinal plant with diverse qualities that profoundly affect the body.

➢ **ECONOMIC BENEFITS:**

- Cannabis cultivation can provide an alternative and potentially profitable crop for farmers.
- Legal cannabis can attract cannabis tourists.

➢ **Application in other industries:**

- Hemp can be used a textile and, in the pulp, and paper industry.
- They are used in food products like hemp oil, hemp milk, and hemp protein powder.
- Hemp can be used as a feedstock for the production of biofuels.

CHALLENGES IN LEGALISING CANNABIS CULTIVATION IN INDIA:

➢ **Drug abuses:**

- **Around 95% of individuals with substance addiction issues in Himachal Pradesh primarily consume cannabis and its related products.**

- In a **United Nations Office on Drugs and Crime (UNODC) report, India is identified as a significant center for the illegal trade of cannabis.**

- ➢ **Difficulties in regulation**:
  - Cannabis legalization may conflict with certain existing laws and regulations, including those related to the Narcotic Drugs and Psychotropic Substances Act in India.
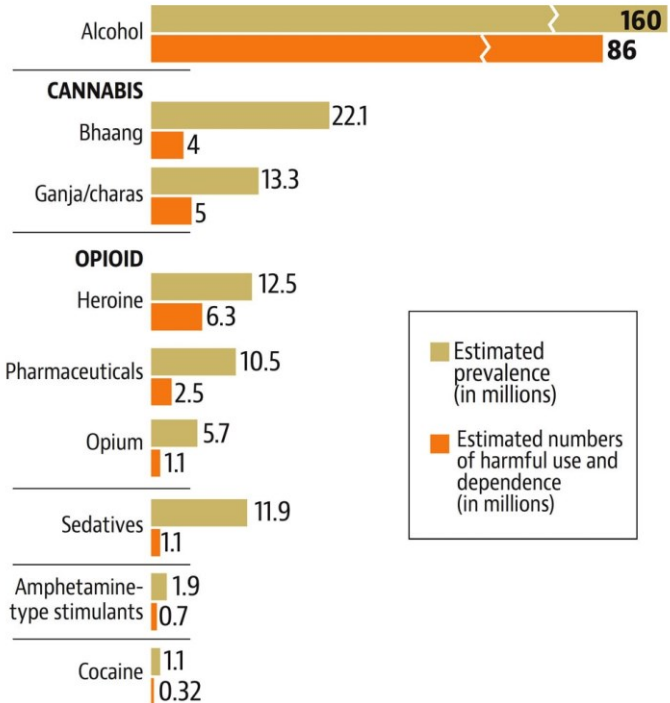- ➢ **Promotion of illegal markets**:
  - There's a concern that the unlawful cultivation and distribution of cannabis may persist alongside its legal production.
  - This can potentially result in elevated criminal activities and present challenges for law enforcement.
- ➢ **Enforcement of international treaties:**
  - United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988)
  - Convention on Psychotropic Substances (1971)
  - Enforcement of these treaties can conflict with the legalization of cannabis cultivation in India.

Scale of substance abuse in India

Alcohol is the most commonly used legal psychoactive substance, with about about 14.6% of population using it

Substance	Estimated prevalence (in millions)	Estimated numbers of harmful use and dependence (in millions)
Alcohol	160	86
CANNABIS		
Bhaang	22.1	4
Ganja/charas	13.3	5
OPIOID		
Heroine	12.5	6.3
Pharmaceuticals	10.5	2.5
Opium	5.7	1.1
Sedatives	11.9	1.1
Amphetamine-type stimulants	1.9	0.7
Cocaine	1.1	0.32

(Source: Magnitude of Substance Abuse in India Report, 2019)

REGULATIONS RELATED TO CANNABIS IN INDIA:

- ➢ **NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES ACT, 1985:**
  - According to the NDPS Act, a "**cannabis plant**" refers to any plant belonging to the cannabis genus.
  - The Act also defines "**charas**" as the resin extracted from the cannabis plant. The NDPS Act encompasses separated resin, in any state, be it crude or purified, obtained from the cannabis plant.
- ➢ **NARCO COORDINATION CENTRE:**
  - The Narcotics Control Bureau (NCB) in India established the Narcotics Coordination Centre (NCC) to enhance coordination and information sharing among various law enforcement agencies.
- ➢ **CONSTITUTIONAL PROVISIONS:**
  - In line with the constitutional principles, Article 47 of the Indian Constitution guides the State to make efforts to enforce a ban on the use of harmful intoxicating drugs, except when prescribed for medicinal reasons.

INTERNATIONAL ORGANISATIONS ASSOCIATED:

➢ **United Nations Office on Drugs and Crime (UNODC):**

The UNODC is a primary United Nations agency responsible for coordinating global efforts to combat illicit drugs, transnational organized crime, and terrorism.

➢ **United Nations Commission on Narcotic Drugs (CND):**

The CND is the central policymaking body within the United Nations system for drug control.

➢ **International Narcotics Control Board (INCB):**

The INCB is a UN-established, independent body that monitors and enforces compliance with international drug control treaties.

WAY FORWARD

➢ **PROMOTE RESPONSIBLE USE:**

Promote responsible cannabis use by informing the public about its potential advantages and risks, thereby reducing stigma.

➢ **CLEAR REGULATORY FRAMEWORK:**

Establish a comprehensive regulatory system for the lawful cannabis sector, encompassing licensing, quality assurance, distribution, taxation, and product safety.

➢ **INTERDISCIPLINARY APPROACH:**

Encourage cooperation among different government departments, such as health, agriculture, and justice, to create a unified strategy for regulating cannabis.

OIL PALM PLANTATION

SOURCE: DOWN TO EARTH

WHY IN NEWS?

➢ Assam's Chief Minister Himanta Biswa Sarma declared a substantial oil palm plantation initiative in collaboration with Patanjali Food Limited (PFL).

➢ This ambitious endeavour aligns with Prime Minister Narendra Modi's objective of attaining self-reliance in edible oil production and aims to cultivate a single crop on 370,000 hectares of land, as per the announcement.

ABOUT OIL PALM

➢ Palm oil is a consumable vegetable oil extracted from the reddish pulp of oil palm fruits.

➢ Its applications range from cooking oil to ingredients in cosmetics, processed foods, personal care products like soaps and shampoos, and even biofuel production.

➢ The lion's share of global palm oil production, nearly 90%, comes from Indonesia and Malaysia, with Indonesia leading the way by producing over 45 million tonnes in 2021.

➢ The oil palm has its origins in West Africa and was brought to India as a profitable agricultural crop(cash crop).

➢ Its cultivation is primarily centered in the southern and northeastern regions of India, encompassing states like Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Assam, and Mizoram.

BENEFITS OF OIL PALM CULTIVATION

➤ **Reduction in oil import:**

Through domestic edible oil production, India has the potential to conserve its foreign exchange reserves that would otherwise go toward imports.

This could positively influence the nation's economy by lowering trade imbalances and bolstering domestic sectors.

➤ **Food security:**

Enhances food security by increasing the availability of affordable cooking oil, especially in regions where other edible oils may be scarce.

➤ **Diversification of income:**

Provides farmers with an additional source of income, promoting agricultural diversification and reducing reliance on single crops.

➤ **Energy security:**

Oil palm is also used to produce biodiesel which can help in domestic energy production.

➤ **Industrial applications:**

Palm oil has a wide range of industrial applications, including biodiesel production, which can help meet the country's energy needs.

CHALLENGES ASSOCIATED WITH OIL PALM CULTIVATION

➤ **Large scale deforestation:**

- Large-scale oil palm cultivation can lead to deforestation, habitat loss, and biodiversity degradation. This poses significant environmental risks, especially in ecologically sensitive regions.

➤ **Loss of Biodiversity:**

- Palm oil is not only detrimental to the environment and a significant contributor to climate change, but it also stands as the primary driver behind the endangerment of orangutans.

- Annually, it is estimated that a substantial number of orangutans, ranging from 1,000 to 5,000, lose their lives in palm oil concessions.

➤ **Water scarcity:**

➤ Oil palm requires substantial water for irrigation, which can strain local water resources, leading to water scarcity issues.

➤ **Displacements of local communities:**

➤ Cultivation of oil palm requires land on a large scale which can cause displacement of the local communities.

➤ **Market volatility:**

➤ The worldwide palm oil market is susceptible to multiple factors, such as international trade regulations, weather patterns, and consumer choices. These fluctuations can have repercussions on the earnings and financial security of smallholder farmers.

GOVERNMENT MEASURES TO PROMOTE OIL PALM CULTIVATION

INITIATIVE	OBJECTIVE
1. OIL PALM DEVELOPMENT PROGRAM	**During the Eighth and Ninth Plans (1992-2002), a comprehensive Centrally Sponsored Scheme known as the Oil Palm Development Programme (OPDP) was initiated.**
2. **Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM).**	**Tenth and Eleventh Plans spanning from 2002 to 2012, the Indian government extended assistance for oil palm cultivation through this Centrally sponsored scheme.**
3. Special program on Oil Palm Area expansion	**To enhance oil palm cultivation, the Indian government introduced a Special Programme for Expanding Oil Palm Area (OPAE) under the Rashtriya Krishi Vikas Yojana (RKVY) from 2011-12 to 2014-15.**
4. **National Mission on Oilseeds and Oil Palm (NMOOP)**	**For increasing area under cultivation and productivity in 12 States**
5. National Mission on edible oils-Oil Palm	**To increase domestic with special focus on North East and Andaman and Nicobar.**

WAY FORWARD

- ➢ **Promote sustainable practices:**
  - ✓ Encourage and ensure the adoption of eco-friendly farming techniques in oil palm cultivation, reforestation efforts, and the utilization of organic farming approaches.

- ➢ **Environmental impact assessment:**
  - ✓ Conduct comprehensive environmental impact assessments before approving new plantations to assess potential ecological risks.
- ➢ **Stringent regulations:**
  - ✓ Strengthen and enforce regulations to monitor and control the industry, ensuring compliance with sustainability and environmental standards.

GOODS TRADE DEFICIT HITS A 10-MONTH HIGH

SOURCE- INDIAN EXPRESS

WHY IN NEWS

India's trade dynamics have witnessed significant developments in recent times, with notable implications for the country's economy. Recently India's trade scenario, particularly focusing on the declining goods exports, reduction in services exports, and the surge in the goods trade deficit during August.

ABOUT INDIA'S TRADE TRENDS

- **Economic Impact**: The surge in imports played a pivotal role in widening the trade deficit. This development has notable repercussions for India's foreign trade dynamics, prompting a need for strategic considerations to address the trade imbalance.

- **Goods Trade Deficit**: The goods trade deficit in August reached a 10-month high, totaling a substantial $24.16 billion. This highlights a significant imbalance between the value of imports and exports.

- **Services Exports Reduction**: While services exports had been on a growth trajectory, they are now estimated to have experienced a decline in August, further complicating the trade scenario.

- **Goods Exports Decline**: In August, India's goods exports marked their seventh consecutive month of contraction, signaling a concerning trend in the country's export sector.

- **Merchandise Import Bill**: Although the import bill for merchandise in August decreased year-on-year, it saw a noteworthy rise compared to July, reaching a total of $58.64 billion.

REASONS FOR INCREASING TRADE DEFICIT

- **Increased Import Demand**: Rising consumer and business demand for foreign goods and services can lead to higher imports, causing a trade deficit.

- **Economic Growth**: Strong economic growth can boost imports as domestic consumption and investment rise.

- **Currency Exchange Rates**: Exchange rate fluctuations can affect trade balances, with a weaker domestic currency increasing import costs.

- **Consumer Preferences**: Changing consumer preferences for foreign products can drive up imports.

- **Trade Agreements**: Trade agreements can influence trade imbalances, often leading to increased imports.

- **Economic Policies**: Government policies, like tariffs, can impact imports and exports.

- **Global Economic Conditions**: Economic slowdowns in trading partners can reduce export demand while maintaining import levels.
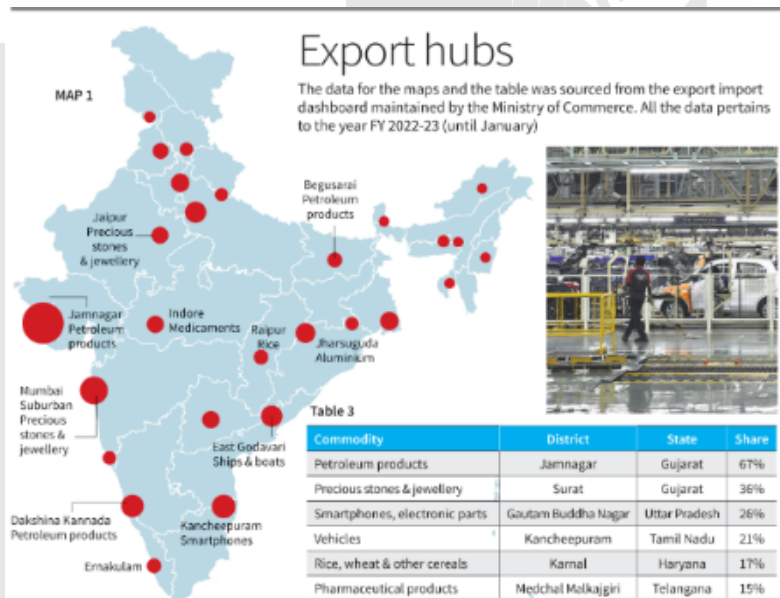
STRATEGIC DIRECTIONS FOR TRADE IMPROVEMENT

➢ **Export Promotion**: Encourage and support domestic industries to increase exports through incentives, reduced export barriers, and market diversification.

➢ **Diversify Exports**: Promote the diversification of both export products and markets to reduce reliance on specific sectors or trading partners.

➢ **Boost Domestic Production**: Invest in domestic industries and manufacturing to reduce import dependency and enhance competitiveness.

➢ **Currency Management:** Monitor and manage currency exchange rates to ensure competitiveness for exports without inflating import costs excessively.

➢ **Comprehensive Policy Framework**: Develop and implement a cohesive strategy encompassing trade agreements, infrastructure development, research and development, economic diversification, policy coordination, long-term planning, foreign direct investment attraction, and prudent fiscal and monetary policies to manage trade balances effectively.

INDIA'S TOP EXPORTING DISTRICTS IN FY23 (TILL JANUARY):

1) **Jamnagar, Gujarat:** Jamnagar in Gujarat is the leading exporting district in India, contributing approximately 24% of the country's total exports in value terms for the fiscal year 2023 (till January).

2) **Surat, Gujarat:** Surat, also located in Gujarat, secures the second position among India's top exporting districts. However, its contribution to the nation's exports is significantly lower, at around 4.5%, compared to Jamnagar.

3) **Mumbai Suburban, Maharashtra:** Mumbai Suburban district in Maharashtra ranks third in the list of top exporting districts in India. Similar to Surat, its share in the country's exports stands at approximately 4.5% during the same period.

4) **Dakshina Kannada, Karnataka**

5) **Devbhumi Dwarka, Gujarat**

Export hubs

The data for the maps and the table was sourced from the export import dashboard maintained by the Ministry of Commerce. All the data pertains to the year FY 2022-23 (until January)

Table 3

Commodity	District	State	Share
Petroleum products	Jamnagar	Gujarat	67%
Precious stones & jewellery	Surat	Gujarat	36%
Smartphones, electronic parts	Gautam Buddha Nagar	Uttar Pradesh	26%
Vehicles	Kancheepuram	Tamil Nadu	21%
Rice, wheat & other cereals	Karnal	Haryana	17%
Pharmaceutical products	Medchal Malkajgiri	Telangana	15%

RUBBER BOARD TO INCREASE AREA UNDER RUBBER IN NORTH EAST

SOURCE: THE HINDU

WHY IN NEWS?

The **Rubber Board**, in collaboration with the **Central government and the Automotive Tyre Manufacturers' Association, is executing a project to increase the cultivation of natural rubber in the Northeastern States.**

SIGNIFICANCE OF THE INITIATIVE:

- ➢ **Self-sufficiency in natural rubber production:**
  - Due to the significance of this crucial raw material, the nation should prioritize enhancing domestic natural rubber (NR) production.
  - This will help achieve self-sufficiency and reduce reliance on imported NR as much as possible.
- ➢ **Helpful in tackling extremist activities:**
  - The **Union Minister of Commerce and Industry** asserted that rubber cultivation has played a role in **addressing militancy and insurgency** in the region.
  - In the past, former militants were reintegrated into society by engaging them in rubber cultivation in Assam and Tripura.
- ➢ **Regional development:**
  - The project also places emphasis on training and enhancing skills in the area, along with the necessary infrastructure.
  - Farmers and tappers in the region will receive specialized training in optimal rubber cultivation practices and modern technologies.
- ➢ **Increase in the quality of the rubber produced:**
  - The project also has the objective of improving the quality of rubber manufactured in the nation.
  - It underscores the importance of creating exemplary smokehouses and enhancing existing ones.

STATUS OF RUBBER CULTIVATION IN INDIA AND AROUND THE WORLD:

- ➢ **Cultivation Area in India**: Rubber farming covers 8.5 lakh hectares in India, with approximately 5 lakh hectares in Kerala and Kanyakumari, and 1 lakh hectares in Tripura.
- ➢ Based on **FAO Stat 2019 data**, **India ranks as the fourth-largest global producer and consumer of rubber.**
- ➢ **Kerala**, within India, stands out as the leading natural rubber producer.
- ➢ **Tamil Nadu, Tripura, Assam, Andaman and Nicobar, and Goa** are other major producers.
- ➢ **Export and Import Trends:**
  India exports rubber primarily to Germany, Brazil, the U.S.A., and Italy.
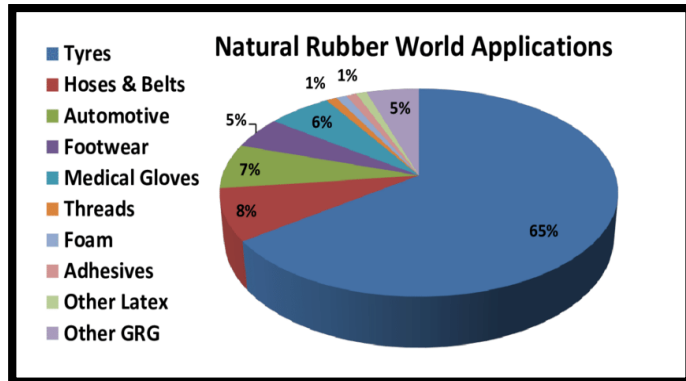 On the other hand, India, the world's second-largest rubber importer after the U.S.A., primarily sources its natural rubber from Indonesia, Vietnam, and Thailand.

CHALLENGES ASSOCIATED WITH THE INITIATIVE:

➢ **Labour intensive:**
- Rubber farming includes labour-intensive tasks such as tapping, demanding skilled workers. Nonetheless, the combination of declining rubber prices and increasing labour costs has rendered cultivation economically unsustainable.

Natural Rubber World Applications

- Tyres — 65%
- Hoses & Belts — 8%
- Automotive — 7%
- Footwear — 5%
- Medical Gloves — 6%
- Threads — 1%
- Foam — 1%
- Adhesives
- Other Latex
- Other GRG — 5%

➢ **Import competition:**

- Inverted duty structure on rubber is a major problem associated with rubber manufacturing in India.
- The availability of imported rubber at lower prices often acts as a deterrent to domestic rubber production.

➢ **Insufficient domestic production:**
- India's rubber production falls short of satisfying the increasing demand for natural rubber, with the tire industry being the primary consumer of rubber in the nation.

➢ **Climate change:**
- The alterations in weather patterns brought about by climate change present considerable obstacles to rubber cultivation.
- Especially in traditional areas like Kerala that are susceptible to these climate shifts.

➢ **Challenges associated with land use:**
- Due to the lack of profitability in rubber cultivation, plantations are either being sold or repurposed for alternative uses, resulting in the fragmentation of rubber holdings.

GOVERNMENT INITIATIVES FOR RUBBER CROP

INITIATIVE	OBJECTIVE
1. **NATIONAL RUBBER POLICY 2019**	**It incorporates measures to bolster the natural rubber production sector as well as the complete rubber industry value chain.**
2. **RUBBER PLANTATION DEVELOPMENT SCHEME**	**Support rubber crops by providing financial incentives.**
3. **FDI Relaxations**	**100% FDI in rubber plantations to attract investments.**
4. **RUBBER BOARD**	**For promoting research and policy support**

WAY FORWARD:

➢ **Promotion of GM Rubber:**
- The Rubber Board research farm is cultivating the world's inaugural genetically modified (GM) rubber plants designed specifically to thrive in the climatic conditions of Northeast India.

➢ **Improving technology:**
- Encourage the adoption of contemporary agricultural technologies, such as rubber-tapping machinery and automation, to enhance productivity and decrease labour expenditures.

➢ **Improving market linkages:**

- Promote collaborations between farmers and rubber-related industries, like tire manufacturing, to secure a consistent demand and equitable pricing.

➢ **Improving infrastructure and logistics:**
- Set up rubber clusters and industrial parks to develop a conducive environment for rubber processing and enhancing its value.

DAIRY SECTOR IN INDIA

SOURCE: DTE

WHY IN NEWS?

During COVID-19, supply chain disruptions led to a significant decrease in artificial insemination for dairy farmers in India, resulting in a substantial economic loss due to missed conceptions and reduced milk production.

OVERVIEW OF DAIRY SECTOR:

- Milk production in India remained **stagnant during the 1950s and 1960s.**
- India, during this period, **relied on milk imports**, and annual production showed negative growth for several years.
- The development of India's dairy sector and the **significant role played by dairy cooperatives since the inception of Operation Flood** are integral components of the country's impressive post-Independence growth narrative.

CURRENT STATUS:

- **India** holds the **top position in global milk production, contributing approximately 23% of the world's milk output.**
- Over the past 8 years, milk production in India has experienced a remarkable increase of 51.05%.

- India's milk production has maintained an impressive annual growth rate of 6.4% during the same period, while global milk production is growing at a rate of 1.2% per annum.

CHALLENGES IN THE SECTOR:

1. **Quality Control Issues**: Ensuring consistent quality in dairy products remains a challenge. For example, variations in milk quality due to factors like cattle feed can affect product standards.

2. **Price Fluctuations**: Volatile milk prices can impact dairy farmers' incomes. For instance, fluctuations in milk procurement prices by cooperatives can affect farmers' profitability.

3. **Market Access:** Dairy farmers need better market access to sell their products, particularly in remote rural areas where transportation infrastructure may be lacking.

4. **Value Addition:** Encouraging value addition to dairy products can enhance profitability. For example, converting milk into high-value products like cheese or yogurt.

Sudden drop

India's nearly stable milk production rate saw a major dip this year

Annual growth rate of milk production %

6.27

0.4*

2015-16   2022-23

*Projected figure Source: Union Ministry of Commerce and Industry, National Bank for Agriculture and Rural Development (NABARD)

5. **Health and Hygiene:** Ensuring health and hygiene in the dairy supply chain is crucial, especially in the context of food safety concerns. Example: LUMPY SKIN disease, which causes blisters and reduces milk production in cows, has infected millions of cattle and killed them.

6. **Competition:** The dairy sector faces competition from both domestic and international markets. Coping with imports of dairy products and competing in export markets can be challenging.

7. **Regulatory Compliance:** Adhering to evolving food safety and labelling regulations is essential. Non-compliance can lead to market access issues.

GOVERNMENT INITIATIVES:

Initiative	Description
Operation Flood	Launched in 1970, it aimed to increase milk production and provide fair prices to dairy farmers through cooperatives.
National Dairy Plan (NDP)	NDP-I and NDP-II were implemented to enhance milk production, improve milk quality, and strengthen dairy infrastructure.
Rashtriya Gokul Mission	Focused on conserving indigenous cattle breeds and enhancing their productivity.
Dairy Processing & Infrastructure	Promotes investment in modern processing facilities and cold chains to reduce post-harvest losses.
National Programme for Bovine Breeding	Aims to improve cattle genetics through artificial insemination and breed improvement programs.
Dairy Sahakar Scheme	- Launched by the Union Minister of Home Affairs and Corporation during Amul's 75th Foundation Year celebration in Anand, Gujarat. - Total investment of Rs 5000 crore, implemented by NCDC under the Ministry of Cooperation, with the vision "from cooperation to prosperity."
Lumpi-ProVacInd	Jointly developed by ICAR's National Research Centre on Equines (NRCE) and the Indian Veterinary Research Institute (IVRI). A live attenuated vaccine, similar to those used against tuberculosis, measles, mumps, and rubella.
National Animal Disease Control Prog.	- Launched in September 2019 to control Foot & Mouth Disease and Brucellosis by vaccinating 100% cattle, buffalo, sheep, goat, and pig populations. - Focus on 100% bovine female calves (4-8 months) for brucellosis and broader vaccination efforts in five years (2019-20 to 2023-24).
e-GOPALA	The web version of the e-GOPALA application developed by the National Dairy Development Board (NDDB) to assist dairy farmers.

WAY FORWARD:

- ➢ **Technology Adoption**: Promote the use of digital tools like e-GOPALA to enhance dairy farming practices, access to information, and market connectivity for farmers.
- ➢ **Skill Development:** Invest in training and capacity building for farmers to improve their knowledge and skills in modern dairy farming techniques.
- ➢ **Quality Assurance:** Implement quality control measures to ensure the production of safe and high-quality dairy products, boosting consumer confidence.
- ➢ **Infrastructure Development:** Enhance cold chain and processing infrastructure to reduce post-harvest losses and improve product quality.
- ➢ **Financial Inclusion:** Facilitate access to credit and financial services for small-scale dairy farmers to invest in their businesses.

INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR):

Name	ICAR (Indian Council of Agricultural Research)
Former Name	Imperial Council of Agricultural Research (ICAR)
Establishment Year	1929
Under	Department of Agricultural Research and Education (DARE), Ministry of Agriculture an Farmers Welfare
Legal Status	Registered society under the Societies Registration Act, 1860
Headquarters	New Delhi
Mandate	Apex body for coordinating, guiding, and managing research and education agriculture, horticulture, fisheries, and animal sciences across India.

GREEN REVOLUTION

SOURCE: TH

WHY IN NEWS?

Known as the Father of India's Green Revolution, renowned agricultural scientist Dr. M. S Swaminathan passed away Following age-related issues.

GREEN REVOLUTION IN INDIA:

WHAT IS THE GREEN REVOLUTION IN INDIA?

❖ The Green Revolution denotes a **significant increase in food grain production, especially wheat and rice, largely attributed to the introduction of high-yielding variety (HYV) seeds** in developing countries during the mid-20th century.

❖ Its **objective** was to achieve **self-sufficiency in food grain production.**

❖ Starting in the **1960s**, it led to substantial changes in traditional farming practices.

❖ **Dr. M. S. Swaminathan**, advisor to India's agriculture minister, invited Norman Borlaug, and M.S. Swaminathan is often recognized as **the father of the Indian Green Revolution**.

❖ **In India**, it **commenced in 1968** under the leadership of **Prime Minister Indira Gandhi,** primarily **boosting food grain output in Punjab, Haryana, and Uttar Pradesh.**

❖ This period also saw the **development of synthetic insecticides, herbicides, and chemical fertilizers, addressing India's food security concerns.**

❖ Various **support programs** were established, including **minimum support prices and public grain distribution.**

❖ India became a major food grain exporter, ranking second in rice and wheat production and first in rice exports.

GREEN REVOLUTION OBJECTIVES

- ❖ **Short-Term:** Initiated **during the second Five-Year Plan to address India's famine crisis.**
- ❖ **Long-Term:** Aims for **comprehensive agricultural modernization** encompassing infrastructure, raw materials, industrial and rural development.
- ❖ **Employment Generation:** Providing employment **for both agricultural and industrial sectors**.
- ❖ **Scientific Research: Cultivating resilient crops** capable of withstanding diseases and harsh weather.
- ❖ **Global Agricultural Influence:** Establishing companies in key agricultural regions and sharing technology with less-industrialized nations.

COMPONENTS OF GREEN REVOLUTION

- ❖ **High-Yielding Variety (HYV) Seeds:** Vital for the Green Revolution, HYV seeds improved responsiveness to fertilizers, matured quickly, and had sturdy stems, facilitating double cropping.
- ❖ **Irrigation:** The second most critical element, as **consistent water supply is essential for increased yield and production stability.**
- ❖ **Chemical Fertilizers:** Needed in substantial quantities for HYV seeds to achieve high yields.
- ❖ **Insecticides and Pesticides:** Controlling pests, diseases, and weeds was essential for crop production.
- ❖ **Command Area Development (CAD):** A program aimed at maximizing agricultural production from irrigated areas.
- ❖ **Land Consolidation:** Addressed challenges related to small and dispersed land holdings.
- ❖ **Land Reforms:** Implemented to improve the agricultural landscape by **abolishing the Zamindari system.**
- ❖ **Agricultural Credit:** Crucial for accessing technology, seeds, fertilizers, and machinery, especially for small and marginal farmers.
- ❖ **Rural Electrification:** Provided affordable energy for irrigation, processing, and water lifting.
- ❖ **Rural Roads and Marketing:** Crucial for farmers to access markets, and regulated markets supported agricultural trade.
- ❖ **Farm Mechanization:** Enhanced efficiency and reduced labour requirements.
- ❖ **Agricultural Universities:** Focused on research and knowledge dissemination to benefit farmers, particularly in Punjab, Haryana, and Uttar Pradesh.

POSITIVE IMPACTS OF GREEN REVOLUTION:

1. **Increased Crop Production:** The Green Revolution led to a significant boost in grain production, making India one of the world's top agricultural producers by yielding 131 million tonnes of grain in 1978-79.
2. **Expansion of High-Yielding Varieties:** The cultivation of high-yielding varieties of wheat and rice expanded considerably during this period.
3. **Reduced Food Imports:** India achieved self-sufficiency in food-grains, often having surplus stocks for export.
4. **Per Capita Food Availability:** The per capita availability of food-grains also rose.
5. **Income for Farmers:** Farmers' incomes increased, with surplus earnings being reinvested in agricultural productivity.

6. **Industrial Growth:** Mechanization of farming created demand for machinery and boosted industries related to agriculture, including fertilizers and pesticides.
7. **Rural Employment:** Multiple cropping and increased fertilizer usage generated employment opportunities in both agriculture and related industries.

NEGATIVE IMPACTS OF GREEN REVOLUTION:

1. **Excluded Crops:** Non-food crops like pulses, oilseeds, and major commercial crops like cotton, jute, tea, and sugarcane was largely unaffected by the Green Revolution.
2. **Limited Crop Coverage:** The High Yielding Variety Programme (HYVP) focused on just five crops, leaving non-food crops out of the equation.
3. **Regional Disparities:** The Green Revolution mainly benefited certain regions, aggravating economic disparities and neglecting Eastern and arid regions.
4. **Chemical Overuse:** Extensive use of pesticides and synthetic fertilizers, often without proper education, led to environmental and soil pollution.
5. **Excessive Water Consumption:** Water-intensive crops like rice and sugarcane depleted groundwater levels due to increased irrigation.
6. **Soil and Crop Problems:** Repeated cropping depleted soil nutrients, necessitating more fertilizers, altering soil pH levels, and harming beneficial soil organisms.
7. **Unemployment:** Farm mechanization, except in Punjab and Haryana, caused unemployment, particularly affecting poor and landless laborers.
8. **Health Hazards:** Widespread use of chemical fertilizers and pesticides resulted in severe health issues, including cancer, renal failure, stillbirths, and birth defects.

WAY AHEAD:

EVERGREEN REVOLUTION

➤ **Coined by Dr. M. S. Swaminathan**, it aims to enhance output and productivity while maintaining both short- and long-term food production goals.
➤ Seeks to **produce more with fewer resources** (water, pesticides, and land) for sustainable agriculture.
➤ I**ntroduces modern ICT to Indian farmers for improved farm productivity.**
➤ ICT projects address agricultural value chain issues through weather alerts, planting season info, and price networking.
➤ **e-Kranti**, a part of Digital India, focuses on technology for farmers, providing real-time pricing, online ordering, and mobile banking.

BRINGING GREEN REVOLUTION TO EASTERN INDIA

➤ **Launched in 2010–2011** to **improve productivity in rice-based agricultural systems in Eastern India.**
➤ **Focuses on seven states: Assam, Bihar, Chhattisgarh, Jharkhand, Odisha, Eastern Uttar Pradesh (Purvanchal), and West Bengal.**
➤ Includes cluster demonstrations, seed distribution, nutrient management, pest control, training, asset-building, irrigation, post-harvest support, and more.
➤ Funds distributed from the Government of India to states and further to districts.
➤ **Expanding to cover wheat, coarse-cum-Nutri cereals, pulses, and oilseeds.**
➤ Now part of the **Rashtriya Krishi Vikas Yojana.**

FOOD SECURITY INITIATIVES OF GOVERNMENT:

Initiative	Description
Rashtriya Krishi Vikas Yojana (RKVY)	Launched in 2007. Aims to provide holistic development to the agriculture sector by incentivizing states to increase investment in agriculture and allied sectors.
National Food Security Mission (NFSM)	Started in 2007. Focuses on increasing the production of rice, wheat, and pulses through improved technology, seeds, and management practices.
Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)	Initiated in 2015. Aims to provide efficient irrigation solutions to farmers, enhancing water use efficiency in agriculture.
National Horticulture Mission (NHM)	Launched in 2005. Focuses on horticulture crops like fruits, vegetables, and flowers. Promotes technological interventions and market linkages.
National Mission on Oilseeds and Oil Palm (NMOOP)	Started in 2014. Aims to increase oilseed production, reduce import dependency, and promote oil palm cultivation.
Paramparagat Krishi Vikas Yojana (PKVY)	Launched in 2015. Promotes organic farming through the adoption of organic practices and certification.
Soil Health Card Scheme	Introduced in 2015. Provides farmers with information on the nutrient status of their soil, helping them make informed decisions regarding fertilizer use.
Pradhan Mantri Fasal Bima Yojana (PMFBY)	Launched in 2016. Offers crop insurance to farmers against various natural calamities, ensuring financial protection for farmers.

AWARDS AND RECOGNITION

- ❖ Awarded the **first World Food Prize Laureate in 1987 for contributions to India's wheat and rice production.**
- ❖ Received the **Padma Bhushan and Padma Vibhushan**, two of India's highest civilian honours.

DR. MS SWAMINATHAN

EARLY LIFE AND EDUCATION

If agriculture fails, everything else will fail.
- M S Swaminathan
Father of India's Green Revolution
ICRISAT Ambassador of Goodwill

- ❖ Born in Kumbakonam, Tamil Nadu on August 7, 1925.
- ❖ Initially aspired to pursue a career in civil services and **successfully cleared the civil services examination.**
- ❖ **Switched to agriculture due to his passion, influenced by the Quit India Movement and the Bengal famine of 1942–43.**
- ❖ Enrolled in the Agriculture College in Coimbatore to follow his agricultural interests.
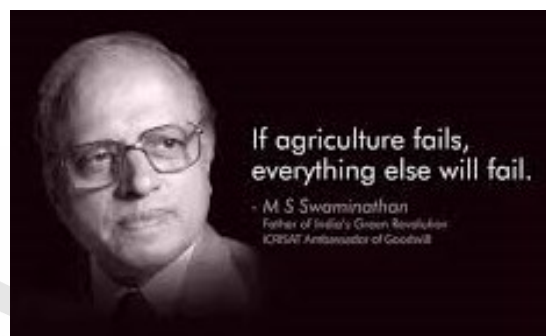
DIVERSE ROLES IN AGRICULTURE

- ❖ Held various significant agricultural positions in India and abroad.
- ❖ Roles included **Independent Chairman of the Food and Agricultural Organization Council (1981–85), President of the International Union for the Conservation of Nature and Natural Resources (1984–90), and President of the World-Wide Fund for Nature (India) from 1989–96.**
- ❖ Also served as the **Director General of the Indian Council of Agricultural Research (ICAR), among other roles.**

THE GREEN REVOLUTION: A TURNING POINT

- ❖ Swaminathan **aimed to revolutionize Indian agriculture.**
- ❖ **Introduced high-yielding crop varieties, improved irrigation, and promoted fertilizer usage.**
- ❖ **India's wheat production increased from 6 million tonnes in 1947 to 17 million tonnes between 1964 and 1968.**
- ❖ Worked on enhancing crop varieties, particularly rice and wheat.
- ❖ **Pioneered the development of semi-dwarf wheat varieties to reduce lodging and increase yields.**
- ❖ **Collaborated with Norman Borlaug** to introduce dwarfing genes into wheat varieties, leading to the "**Wheat Revolution**."
- ❖ Recognized the challenges of the Green Revolution, including loss of local crop varieties, soil fertility concerns, and indiscriminate pesticide use.

ADVOCACY FOR FARMERS

- ❖ As head of the National Commission on Farmers from 2004 to 2006, Swaminathan advocated for farmers' welfare.
- ❖ **Recommended that the Minimum Support Price (MSP) for agricultural produce should be at least 50% more than the cost of production**, ensuring fair compensation for farmers.

AWARDS AND RECOGNITION

- ❖ Awarded the **first World Food Prize Laureate in 1987 for contributions to India's wheat and rice production.**
- ❖ Received the **Padma Bhushan and Padma Vibhushan**, two of India's highest civilian honours.

Environment & Geography

### MINISTRY OF JAL SHAKTI RELEASES THE 6TH CENSUS REPORT ON MINOR IRRIGATION SCHEMES

SOURCE: PIB

WHY IN THE NEWS?

➢ A report on the **sixth census** of **Minor Irrigation Schemes** was released by the **Department of Water Resources, River Development and Ganga Rejuvenation(DoWR, RD & GR)**, **Ministry of Jal Shakti**

➢ The **number of MI schemes** increased by around **1.42 million** between the 5th and 6th MI censuses.

WHAT IS A MINOR IRRIGATION SCHEME?

➢ In India, **a minor irrigation system** is one that has a **culturable command area (CCA)** of up to **2000 hectares.**

➢ The **six major types of projects** are as follows:

1) **Dug well**
2) **Shallow Tube well**
3) **Medium Tube well**
4) **Deep Tube well**
5) **Surface Flow projects**
6) **Surface Lift Schemes.**
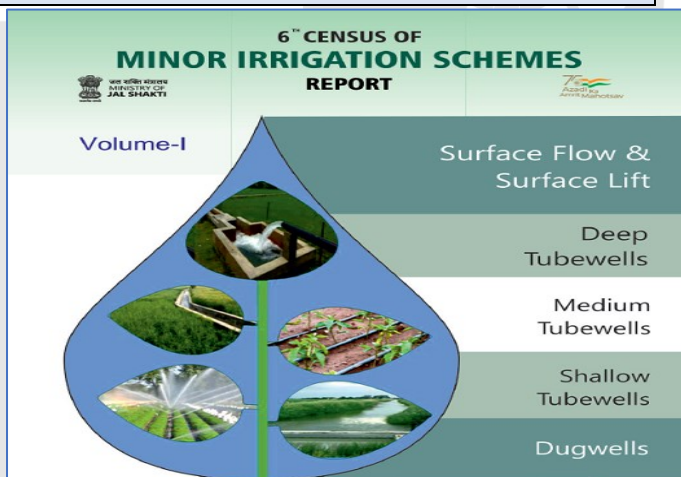
IMPORTANCE OF MINOR IRRIGATION SCHEMES:

➢ The creation of India's entire **irrigation potential** is significantly influenced by minor irrigation.

➢ The **minor irrigation potential is 81.43 million ha**, or **58.19%,** of the **total irrigation potential of 139.95 million ha.**

➢ Therefore, attention needs to be placed on minor irrigation **to close the gap** between irrigation potential developed and utilized **(Planning Commission 2011).**

MAJOR FINDINGS OF THE CENSUS REPORT:

➢ According to the report, there **are 23.14 million minor irrigation (MI)** schemes in the nation, of which **21.93 million (or 94.8%) use groundwater** and **1.21 million (or 5.2%)** use **surface water.**

➢ The **majority of MI schemes** are located in **Uttar Pradesh**, which is followed by **Maharashtra, Madhya Pradesh, and Tamil Nadu**.

➢ **Uttar Pradesh, Maharashtra, Madhya Pradesh, Tamil Nadu, and Telangana** are the top states for **GW programs**.

➢ The states with the **greatest shares in SW programs** are **Maharashtra**, **Karnataka, Telangana, Odisha, and Jharkhand.**

- **Dug wells** have the **highest share** in **MI schemes** followed by shallow tube wells, medium tube wells, and deep tube wells.
- A **majority of MI schemes (96.6%)** are under **private ownership**.
- In **GW schemes**, the share of **private entities** in the ownership is **98.3%** whereas in SW schemes the respective share is 64.2%.
- For the first time, **information regarding** the **gender of the MI scheme** owner was also gathered in cases where there was individual ownership.
- **18.1%** of all **privately held** schemes **are owned by women**.

CHALLENGES FACED BY THE IRRIGATION SECTOR IN INDIA

- **Infrastructural problems**: The water supply is inefficient and suffers from severe water losses as a result of **leaky canals and aging pumping equipment**.
- **Energy Costs**: Farmers may experience a **large financial strain** due to the expense of the **electricity needed for irrigation**, especially when pumping groundwater. The problem is made more difficult by **fluctuating energy prices and an unstable electricity supply**.
- **Groundwater depletion**: Due to **excessive groundwater exploitation** and **inadequate recharging from rainfall,** there has been a continuous **reduction in the water table** in recent years in several regions of the nation, particularly in the western arid zone.
- **Costly micro irrigation systems: Richer farmers** make up the **majority of adopters**, as impoverished farms cannot afford it. A number of agencies have developed low-cost solutions to this issue.
  - An **NGO** called **International Development Enterprises (IDE)** is aggressively promoting low-cost micro irrigation systems and raising awareness among underprivileged farmers in Gujarat and Maharashtra.
- **Regional imbalances**: According to the **Ninth Five Year Plan** Document, just **28.6% of major, medium, and minor water resource** development projects are underway in the **North Eastern region,** compared to **95.3% in the Northern region**.
- **Environmental concerns**: Large-scale irrigation projects frequently have **negative effects on the environment**, such as **habitat destruction and altered river flows**. It can be difficult to strike a balance between **agricultural requirements and environmental protection**.

WAY FORWARD

The following steps can be taken to improve the productivity of our irrigation systems:

- **Sustainable water infrastructure:** The **design, development, and management** of water-related systems and facilities in a way that guarantees the **long-term availability** and **quality of water resources** while **minimizing detrimental environmental, social, and economic effects.**
  - According to a study, **extensive groundwater extraction** has caused the **Earth's tilt to shift eastward**, displacing it by about 31.5 inches.
- **Reduce evapotranspiration:** Utilise **mulching methods** to keep soil moist around crops and **decrease evaporation**. Mulch can also assist in controlling soil temperature.
- **Improve the water distribution channels:** The use of micro-irrigation techniques can be helpful.
  - Inspect the irrigation system **for blocked or broken emitters, pipelines, and valves**. It is essential to do **routine maintenance** and cleaning to guarantee that **water is delivered evenly** throughout the field.

➢ **Government support:** Through **subsidies, incentives, and rules that** promote water **conservation and responsible irrigation**, governments can play a critical role in supporting effective irrigation practices.

GOVERNMENT INITIATIVES:	
Initiative	**Objective**
Pradhan Mantri Krishi Sinchai Yojana (PMKSY)	To provide financial assistance to farmers to construct irrigation facilities and to improve the efficiency of irrigation systems.
Accelerated Irrigation Benefit Programme (AIBP)	To provide financial assistance to states to complete ongoing irrigation projects and to take up new projects.
Command Area Development Programme (CADP)	To improve the management of irrigation systems and to increase the efficiency of water use.
National Watershed Development Programme for Rainfed Areas (NWDPRA)	To improve the water conservation and management in rainfed areas.
Micro Irrigation Systems Development Programme (MISDP)	To promote the use of micro irrigation systems, such as drip and sprinkler irrigation, to improve water use efficiency.
National Water Policy	To provide a framework for the development and management of water resources in India.

# WHAT DRIVES THE PROCESS OF ATLANTIFICATION IN ARCTIC SEAS?

SOURCE: THE HINDU

WHY IN NEWS?

➢ Satellite data from the European Space Agency (ESA) has unveiled the extent to which warming Atlantic seas are encroaching on Arctic Sea ice, prompting concerns about the alarming decline of sea ice in the Arctic.

➢ Scientists studying sea ice refer to this phenomenon as "Atlantification".

WHAT IS ATLANTIFICATION?

➢ The term "Atlantification" describes **a phenomenon where the features of the Atlantic Ocean, such as its water temperature, salinity, and ecosystem, are encroaching on other areas, frequently as a result of climate change.**

➢ The Arctic Ocean is known for its cold, comparatively fresh water, and unique ecosystem that has evolved to withstand these circumstances.

➢ The Arctic is warming more quickly than many other locations, because of climate change, which is causing global temperatures to rise.

Temperature and salinity profiles in the Arctic
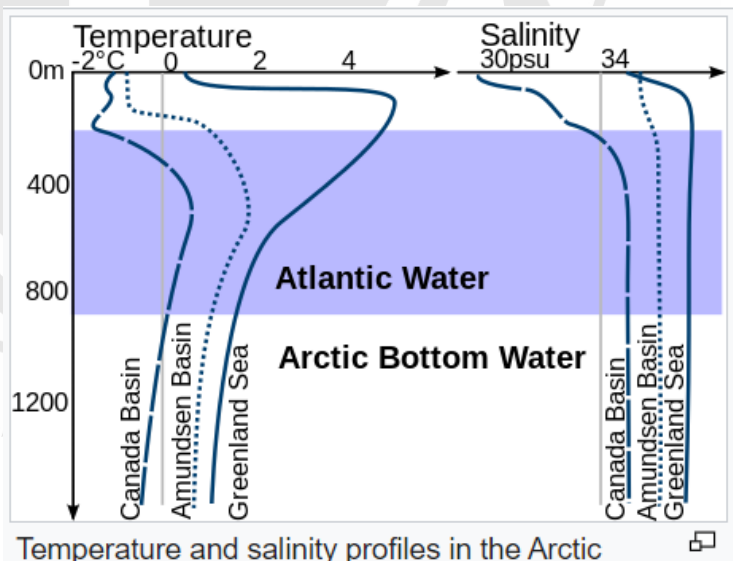
WHAT ARE THE REASONS FOR THE ATLANTIFICATION OF THE ARCTIC SEA?

- **Warm ocean currents**: These currents have the potential to spread their effect into nearby seas and oceans, warming the water and changing the environment there.
  - The Gulf Stream and the North Atlantic Current, which carry warm water from lower latitudes to higher latitudes, are two examples of the warm currents that make up the Atlantic Ocean.
- **Ocean circulation patterns:** Ocean currents are broad-scale patterns of circulation that affect how water masses travel within oceans. Changes in one place can have an impact on nearby areas because of how interrelated these currents are.
  - Modifications to the circulation of the North Atlantic can have an impact on the North Sea and the Arctic Ocean, causing warming and Atlantification.
- **Climate change:** Climate change is a substantial contributor to Atlantification. Oceans, notably the Atlantic Ocean, are warming as a result of rising global temperatures.
- **Altered ecosystems:** The distribution and number of species, including plankton, fish, and marine animals, can be impacted by warming waters and variations in the availability of nutrients.
  - This has an impact on the entire food chain and may have negative effects on native communities that depend on these resources.

CHALLENGES ASSOCIATED WITH THE PROCESS:

- **Loss of ice:** The continuous retreat of sea ice is a result of both Arctic warming and the arrival of Atlantic water.
  - Sea ice species that depend on it for breeding and hunting, such as polar bears and seals, are at risk as a result of reduced sea ice extent and thickness.
- **Ocean acidification:** The inflow of Atlantic water has the potential to alter the chemistry of the ocean, including increasing its acidity.
  - Marine life can be negatively impacted by ocean acidification, especially species with calcium carbonate skeletons or shells, such as some types of plankton and shellfish.
- **Altered climate patterns:** Changed Climate Patterns: The Arctic can have an impact on the world's climate.
  - The polar jet stream can be disturbed by melting sea ice and warming Arctic waters, which could result in more severe weather conditions elsewhere in the world.
- **Feedback Loops:** As a result of Atlantification, warming and other environmental changes in the Arctic may be amplified.
  - For instance, as sea ice melts and reveals darker ocean water, the latter absorbs more sunlight, causing warming to proceed more quickly, decreasing the albedo of the region.
- **Geopolitical tensions:** As governments compete for access to recently opened maritime routes, natural riches, and strategic benefits, the changing Arctic climate has intensified geopolitical tensions.
  - Faster melting of ice has also caused the submergence of various small island nations like Pacific islands.
- **Infrastructure and transportation:** With less ice covering the Arctic, shipping, and resource exploitation are becoming more and more popular.
  - Concerns are raised concerning the possibility of oil spills, harm to delicate ecosystems, the requirement for suitable infrastructure, and the necessity for emergency response capabilities.

HOW TO DEAL WITH THIS CHALLENGE?

- ➢ **Marine conservation:** Protect Arctic maritime ecosystems by enforcing stringent laws and protection measures.
  - • Creating marine protected areas (MPAs) is one way to protect important habitats and guarantee sustainable fisheries management.
- ➢ **International cooperation:** Since the Arctic is a global area, collaboration amongst Arctic countries is crucial.
  - • These include contracts for resource management, shipping laws, and environmental safeguards. In order to make such cooperation possible, the Arctic Council is essential.
  - • The United Nations Convention on the Law of Seas governs the rights and responsibilities of nations in the ocean waters.
- ➢ **Mitigation of climate change:** Global warming is the fundamental cause of Atlantification. It's crucial to reduce greenhouse gas emissions in order to solve this issue through policies and activities that aim to switch to renewable energy sources and boost energy efficiency.
  - • UNFCCC, Kyoto Protocol and Mission LiFE are some examples of such initiatives.

WAY FORWARD:

- ➢ **Sustainable resource management:** Promote the sustainable management of Arctic resources, such as fisheries and mineral deposits, to reduce negative environmental effects.
- ➢ **Scientific Study:** To learn more about the dynamics of Atlantification and its effects on the environment, scientific study and monitoring should be continued in the Arctic.
  - • IPCC and World Meteorological Organisation deal with making policy decisions and scientific analysis of climate change.
- ➢ **Long-Term Planning:** Create plans and strategies for the future that take into consideration the changing environment in the Arctic.
  - • **SDG14:** In particular, SDG 14 is concerned with "Life Below Water" and seeks to address a number of issues pertaining to the world's oceans, seas, and marine resources.

HOW INVASIVE SPECIES ARE COSTING THE GLOBAL ECONOMY BILLIONS ANNUALLY?

SOURCE: THE INDIAN EXPRESS

WHY IN NEWS?

- ➢ The **Assessment Report on Invasive Alien Species** and **their Control, the most comprehensive study** on invasive species to date, published by **the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES),** found that there are 37,000 alien species, including plants and animals, that have been introduced by many human activities to regions and biomes around the world, including more than **3,500 invasive alien species**.

WHAT ARE INVASIVE SPECIES?

- ➢ Invasive species are **non-native organisms** that have been introduced to a new environment, region, or ecosystem, frequently as a **result of human activity**.
- ➢ They are also known as **invasive alien species or exotic species.**
- ➢ When introduced to new environments, these animals can have the potential to significantly disrupt local ecosystems, species, and human interests.

LANTANA CAMARA

RED EAR SLIDER TURTLE

INVASIVE SPECIES IN INDIA:

SPECIES (PLANT KINGDOM)	LOCATION
1. **LANTANA CAMARA**	Western ghats, Eastern ghats, and some parts of Northeast India.
2. **PARTHENIUM WEED (Congress weed)**	Northern and Central India
3. **WATER HYACINTH**	Kerala, West Bengal and Uttar Pradesh
4. **EUCALYPTUS**	Western Ghats
5. **AUSTRALIAN ACACIA**	Southern and North Eastern states.
6. **SENNA SPECTABILIS**	Western Ghats

SPECIES (ANIMAL KINGDOM)	LOCATION
1. **RED-EARED SLIDER TURTLE**	Coastal areas
2. **HOUSE SPARROWS**	Urban areas
3. **BURMESE PYTHON**	Andaman and Nicobar
4. **APPLE SNAIL**	Southern and Northeastern regions
5. **AFRICAN CATFISH**	Coastal and riverside
6. **AMERICAN BULL FROG**	Kerala

CHARACTERISTICS OF INVASIVE SPECIES:

➢ **Rapid production:** High reproduction rates in invasive species enable them to quickly grow their numbers.

➢ **Non-native origin**: Outside of their native ecosystems, invasive species arise. Humans may introduce them purposefully or unintentionally through trade, travel, agriculture, or horticulture.

➢ **Lack of natural predators**: Invasive species frequently lack natural predators or restraints in their new environments, allowing their numbers to expand unchecked.

CHALLENGES ARISE DUE TO INVASIVE SPECIES:

➢ **Loss of biodiversity**: A decrease in biodiversity can result from invasive species **outcompeting and displacing native ones**. The ecosystems' capacity to deliver ecosystem services may be negatively impacted for a long time by this loss of biodiversity.

➢ **Ecosystem disruption**: **Ecosystem functions** including **nutrient cycle, water movement, and fire regimes** can all be affected by invasive species. The entire ecosystem may be affected in a cascade manner by these disturbances, creating ecological imbalances.

➢ **Economic impact**: By destroying forests, fisheries, and agricultural crops, invasive species can hurt the economy. Controlling invasive species and lessening their negative effects can be expensive.

➢ **Health hazards:** Some invasive species can endanger human health **by spreading diseases or triggering allergies**. For instance, invading mosquitoes can spread diseases like the **West Nile and Zika viruses.**

HOW TO DEAL WITH THIS CHALLENGE?

➢ **Biosecurity measures**: Put in place stringent **biosecurity controls** at **ports, airports, and border** crossings to stop invasive species from accidentally entering the world through trade and travel.

➢ **Awareness**: Spread knowledge about the dangers of invasive species and the **value of ethical behaviour a**mong the general public, industries, and stakeholders.

➢ **Regulation and Legislation**: Pass rules and regulations l**imiting the sale and import of potentially invasive species,** and make sure they are adhered to impose **certification and inspection** requirements on imported items.

GOVERNMENT EFFORTS

MAJOR LEGISLATIONS:

LEGISLATION	PROVISION
1. **BIOLOGICAL DIVERSITY ACT 2002**	It offers a framework for the law to govern the use of biological resources and related traditional knowledge.
2. **WILDLIFE PROTECTION ACT 1972**	This aids in the management of exotic species that can threaten native wildlife. It includes measures for the restriction of hunting, poaching, and the illegal trade in wildlife.
3. **FOREST CONSERVATION ACT 1980**	Protecting **indigenous forest ecosystems**, it indirectly aids in the management of invading species.
4. **PLANT QUARANTINE REGULATION OF IMPORT INTO INDIA ORDER 2003**	To **stop the spread of invasive plant species**, it contains procedures for the inspection and quarantine of imported plant material.

MAJOR INTERNATIONAL TREATIES:

	TREATY	OBJECTIVE
1.	**CONVENTION ON BIOLOGICAL DIVERSITY**	The CBD is an international agreement that seeks to protect biodiversity, utilize its elements responsibly, and guarantee the **equitable and fair distribution of the advantages** associated with genetic resources.
2.	**CARTEGENA PROTOCOL ON BIOSAFETY**	This protocol, which is a component of the CBD, deals especially with the **safe handling, transfer and use of living modified organisms (LMOs),** which can include genetically engineered organisms.
3.	**IUCN GUIDELINES ON INVASIVE SPECIES**	IUCN has created **management guidelines and suggestions for invasive alien species,** which are helpful resources for nations and organizations tackling invasive species problems.
4.	**NAGOYA PROTOCOL**	A supplemental accord to the Convention on Biological Diversity (CBD), the Nagoya Protocol on **Access to Genetic Resources, and the Fair and Equitable Sharing of Benefits** arising from their Utilisation.
5.	**INTERNATIONAL PLANT PROTECTION CONVENTION**	An international agreement known as the IPPC attempts to **safeguard plant resources from the introduction and spread of pests, diseases,** and invasive alien species.

WAY FORWARD

➤ **RESTORATION and REHABILITATION**: To repair ecosystems harmed by invasive species, and fund **habitat restoration and rehabilitation projects**.

➤ **RESEARCH AND MONITORING**: The biology, behaviour, and ecological effects of invasive species should be better understood by **funding scientific research**.

➤ **INTERNATIONAL COOPERATION**: Address concerns related to transnational invasive species in cooperation with **international organisations and surrounding nations**.

GLOBAL PUSH TO CRIMINALIZE ECOCIDE

SOURCE: THE HINDU, DOWN TO EARTH

WHY IN NEWS?

➤ The contentious **Maya train initiative in Mexico has the objective of connecting tourists to historical Maya sites, prompting worries about its possible adverse effects on the environment and culture.**

➤ This **project's controversy highlights the notion of "ecocide"** and the increasing worldwide effort to make environmental harm a criminal offense.

WHAT IS ECOCIDE?

➤ Ecocide, a term rooted in Greek and Latin, translates to **'the killing of one's habitat'** or **'environmental destruction.'**

➤ Though there's no worldwide recognized ecocide definition, legal experts convened by the Stop Ecocide Foundation in June 2021 proposed defining it as unlawful or reckless acts knowingly causing severe and extensive or enduring environmental harm, akin to crimes against humanity.
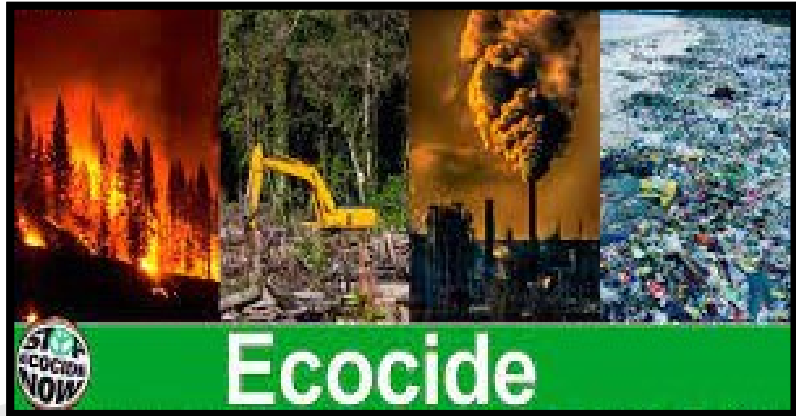

Figure 6:ECOCIDE

HISTORY OF ECOCIDE:

➤ In **1970**, biologist **Arthur Galston** was the first to establish a **link between environmental destruction and genocide, a recognized international crime.**

➤ He established this connection while discussing **the U.S. military's use of Agent Orange**, an herbicide, in the **Vietnam War.**

➤ In **1972,** during the **UN Conference on the Human Environment**, **Swedish Prime Minister** Olof Palme addressed the severe damage caused to the environment.

➤ It was caused due to **indiscriminate bombing, extensive bulldozing, and herbicide use,** describing it as an ecocide requiring immediate global concern.

➤ In **2010,** a British lawyer played a significant role in advocating for the **United Nations' International Criminal Court (ICC)** to formally **recognize ecocide as an international crime.**

➤ Presently, the **ICC's Rome Statute covers four main offenses**, with war crimes being the only provision that can hold individuals responsible for **environmental harm, but solely when it's intentionally inflicted during armed conflicts.**

ECOCIDE AND CLIMATE CHANGE:

Loss of biodiversity
By the year 2050, it is possible that more than 33% of the world's animal and plant species may face extinction.

Rising global temperatures
Unprecedented heatwaves on a global scale.

Use of fossil fuels
According to a 2019 report, 20 fossil fuel companies, despite being aware of the industry's harmful consequences, were accountable for one-third of carbon emissions.

Submergence of small island nations.
Smaller nation-states such as Vanuatu and Barbuda are advocating for the International Criminal Court (ICC) to classify offenses against the environment as breaches of global legal standards.

STATUS OF ECOCIDE IN INDIA:

➢ India has **not endorsed or formally accepted** the **Rome Statute** of the International Criminal Court.
➢ India has not communicated an official stance regarding the proposal to make ecocide an international crime.
➢ However, India has signed many **treaties and enacted several laws** for the conservation of the environment.
➢ **International treaties**:
   • **United Nations Framework Convention on Climate Change.**
   • **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**
   • **Convention on Biological Diversity (CBD)**
   • **Ramsar Convention**
➢ **Legislations**:
   • **Wildlife Protection Act, 1972**
   • **Forest (Conservation) Act, 1980**
   • **Environment (Protection) Act, 1986**
   • **National Green Tribunal (NGT) Act, 2010**
   • **Compensatory Afforestation Fund Act, 2016 (CAMPA)**

- ➢ **Important Judgements:**
  - • **Chandra CFS and Terminal Operators Pvt. Ltd. v. The Commissioner of Customs and Ors case, 2015:** The Madras High Court observed ongoing and unrestrained actions of environmental destruction connected to the extraction of valuable timber.
  - • **T.N. Godavarman Thirumulpad vs Union of India & Ors case 1995:** The TN Godavarman case has profoundly **influenced India's environmental laws**, with **numerous court directives** regulating development in forests.

BENEFITS OF CRIMINALIZING ECOCIDE:

- ➢ **ADDRESSING CLIMATE CHANGE:**
  - • Activities like extensive **deforestation** and **unregulated extraction of fossil fuels** are recognized as **ecocidal practices.**
  - • The criminalization of ecocide introduces a **robust legal aspect** to environmental safeguarding, ensuring that individuals and organizations can be held responsible.
- ➢ **ADVOCATING CLIMATE JUSTICE:**
  - • Laws against ecocide can also act **as compelling appeals for justice**, particularly on behalf of **lower- and middle-income nations** enduring the severe consequences of extreme weather occurrences.
  - • Smaller countries such as **Vanuatu and Barbuda** are advocating for the **International Criminal Court (ICC)** to **designate crimes against the environment.**
- ➢ **ETHICAL AND MORAL RESPONSIBILITY:**
  - • Ethically, we have a **global responsibility** to address environmental challenges collectively.
  - • Criminalizing ecocide demonstrates a **commitment to international cooperation** in addressing issues that transcend national boundaries.
- ➢ **EFFECTIVE REMEDIATION THROUGH LEGALISATION:**
  - • The criminalization of ecocide introduces a robust legal aspect to environmental safeguarding, ensuring that **individuals and organizations** can be **held responsible for actions that detrimentally impact the climate.**

CHALLENGES IN CRIMINALISING ECOCIDE?

- ➢ **Global consensus:**
  Gaining worldwide agreement on ecocide legislation can be difficult due **to differing environmental agendas and priorities.**
- ➢ **Enforcement:**
  Persuading governments to place ecocide laws as a top priority and allocate the necessary resources for their enforcement can be a challenging endeavour.
- ➢ **Impact on developmental activities:**
  The debate against criminalizing ecocide often centers on the conflict between development and safeguarding the environment.

WAY FORWARD

- **Review existing legislation**:

  Before the development of international ecocide laws, India should align its existing environmental legislation with the concept of ecocide.
- **Public awareness**:

  The implementation of ecocide laws should be a component of a larger effort to shift public awareness, acknowledging our interconnectedness with the environment and our reliance on its health for our own well-being.
- **Political and diplomatic engagement**:

  To ensure environmental protection, a combination of political, diplomatic, and legal tools should be employed.

ZERO DRAFT OF GLOBAL PLASTIC POLLUTION TREATY

SOURCE: DOWN TO EARTH, UNEP

WHY IN NEWS?

The second session of the Intergovernmental Negotiating Committee (INC) wrapped up with member states instructing the INC secretariat to create an initial draft aimed at putting an end to plastic pollution, both on land and in marine ecosystems**.**

ABOUT THE TREATY:

- The **preliminary draft** includes **ten sections for discussion**, covering **topics like introduction, definitions, principles, and scope, as well as institutional arrangements and final provisions.**
- **Saudi Arabia, Iran, and China at INC-2** emphasized the **need to define the legally binding instrument's scope**, a view supported by India.
- However, it's worth noting that the United Nations Environment Assembly resolution 5/14 already **defines the scope** as the "**full life cycle of plastics,".**
- This term is subject to varying interpretations by stakeholders, as highlighted by the Centre for Science and Environment (CSE) in their submission to the INC secretariat.
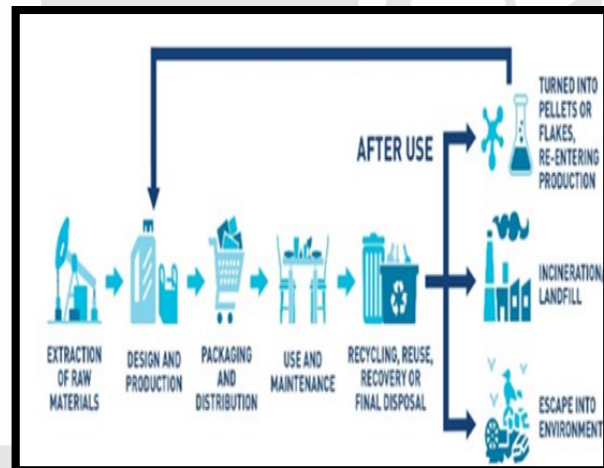
CHALLENGES WITH PLASTIC POLLUTION IN INDIA:

- **Management of plastic waste:**

  India encounters substantial difficulties in handling plastic waste due to insufficient recycling facilities.

  This results in widespread littering and improper disposal practices that have adverse environmental consequences.

- **Pollution on land and water:**

  India's vast coastline is vulnerable to plastic pollution in marine environments, affecting aquatic life and coastal ecosystems.

- **Improper recycling infrastructure:**

  Insufficient recycling facilities and technology hinder efforts to manage plastic waste effectively.

  Most of the recycling facilities fall under the informal sector.

Figure 7: OBJECTIVES OF THE DRAFT

- **Lack of comprehensive regulations:**

  The absence of comprehensive legislation and effective enforcement measures exacerbates plastic-related challenges.

- **Hazardous fumes and air pollution:**

  The incineration of plastics in open spaces contributes to air pollution and health problems, especially in urban areas.

- **Single-use and microplastic management:**

  The widespread use of disposable plastics like bags and packaging is a major factor in pollution and poses risks to ecosystems.
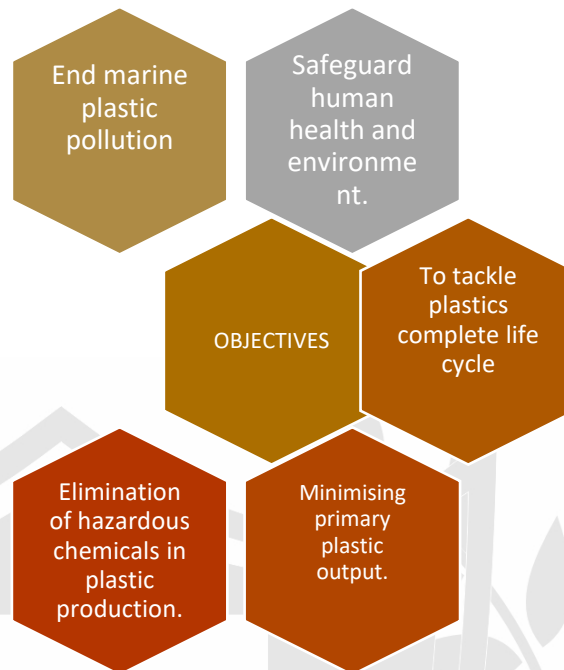
GOVERNMENT EFFORTS FOR THE REDUCTION OF PLASTIC POLLUTION:

	Government Initiative	Objective
1.	**Plastic Waste Management Rules (2016)**	Regulate plastic use and promote recycling.
2.	**Ban on Single-Use Plastics (in various states and union territories)**	Eliminate the use of disposable plastics.
3.	**Extended Producer Responsibility (EPR)**	Hold manufacturers accountable for recycling and proper disposal.
4.	**Swachh Bharat Abhiyan**	Enhance waste collection and management, reducing plastic litter.
5.	**National Dashboard on elimination of single-use plastics.**	To track the progress for plastic management.

INTERNATIONAL EFFORTS:

Convention	Year	Key provisions
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal	1989	Bans the export of hazardous waste from developed to developing countries.
Stockholm Convention on Persistent Organic Pollutants	2001	Bans or restricts the production and use of 12 persistent organic pollutants (POPs), including some plastics.
Minamata Convention on Mercury	2013	Bans or restricts the use of mercury, including in some plastic products.
United Nations Environment Programme (UNEP) Clean Seas Campaign	2017	Aims to reduce plastic pollution in the oceans by 2030.
G7 Oceans Plastics Charter	2021	Commits G7 countries to take action to reduce plastic pollution in the oceans.
Global Commitment on Marine Litter	2022	Commits businesses and organizations to take action to reduce marine litter.

WAY FORWARD

➢ **Eco-friendly practices:** Encourage the development and adoption of sustainable alternatives to plastics, such as biodegradable materials and reusable products.
➢ **Circular economy:** Advocate for the adoption of a circular economy model, wherein plastic items are crafted with recyclability and reusability in mind, leading to a reduction in overall waste production.
➢ **Develop recycling infrastructure:** Allocate resources to enhance waste management and recycling infrastructure, encompassing the aspects of collection, sorting, and recycling facilities. Establish an all-encompassing system for managing plastic waste.

MAINS MARKS BOOSTER:
Data/ facts for mains answer writing:

❖ **Central Pollution Board estimates: According to data from the Central Pollution Control Board, plastic waste makes up 8% of the total solid waste, with Delhi being the primary contributor, trailed by Kolkata and Ahmedabad.**

❖ **India produces approximately 3.4 million tons of plastic waste, but the recycling rate for the entire plastic waste stream is only 30%.**

❖ **Case study:**
Plastic Roads in Tamil Nadu:
The state of Tamil Nadu has pioneered the use of plastic waste in road construction. They mix shredded plastic waste with bitumen to create durable and water-resistant roads. This not only reduces plastic pollution but also improves road quality.

GLOBAL STOCKTAKE REPORT

SOURCE: THE HINDU

WHY IN NEWS?

➢ The **United Nations climate secretariat** released a **'synthesis report' summarizing the progress towards the Paris Agreement's 2015 goals.**

➢ This report is part of a broader initiative known as the **'global stocktake,'** which occurs every five years.

➢ In 2015, nations pledged in Paris to limit global temperature increases to under 2 degrees Celsius and strive for 1.5 degrees Celsius while regularly evaluating individual countries' efforts to reduce greenhouse gases and shift to renewable energy from fossil fuels.

ABOUT THE REPORT:

➢ The 'Global Stocktake' report is a recurring evaluation of countries' endeavours to meet the objectives set forth in the 2015 Paris Agreement.

➢ The term 'Global Stocktake' is used because it assesses and appraises the advancements individual nations have made in cutting down greenhouse gas emissions and shifting towards renewable energy resources.

PURPOSE

- Even though nations have already presented their Nationally Determined Contributions (NDCs) detailing their climate action strategies. The 'Global Stocktake' motivates them to reevaluate and potentially strengthen these commitments before the next round of NDCs is issued in 2025.

MAJOR FINDINGS OF THE REPORT:

1.	**PROGRESS TOWARDS PARIS AGREEMENT.**	The report emphasizes that the current worldwide advancement towards fulfilling the goals of the Paris Agreement is insufficient.
2.	**EMISSION REDUCTIONS**	Substantially heightened ambition is required to achieve a 43% reduction in global greenhouse gas emissions by 2030, followed by a 60% reduction by 2035, ultimately reaching the goal of global net-zero CO_2 emissions by 2050.
3.	**RENEWABLE ENERGY**	To fulfill climate objectives, it is essential to increase the utilization of renewable energy resources while rapidly phasing out the use of 'unabated fossil fuels,' which include coal plants lacking carbon capture and storage technology.
4.	**DEFORESTATION AND LAND DEGRADATION**	We should work towards halting and reversing deforestation and land degradation, all the while encouraging agricultural methods that are pivotal in both emission reduction and improving carbon storage.
5.	**LOSS AND DAMAGE**	Immediate action spanning climate and development policies is imperative to effectively address the challenges linked to 'loss and damage' resulting from climate change and to provide assistance to impacted communities.

CONSEQUENCES OF THE REPORT:

➢ **COOPERATION IN CLIMATE CHANGE DISCUSSIONS:**
- The results of the 'Global Stocktake' report carry considerable weight in international climate dialogues.
- It guides deliberations and choices in gatherings like the UN Climate Conference of Parties (COP).

➢ **RENEWABLE ENERGY TRANSITION:**
- The G20 Leaders Declaration acknowledges the significant financial needs associated with shifting towards an economy reliant on renewable energy sources.

➢ **CLIMATE FINANCING:**
- The Declaration recognizes the necessity for approximately USD 5.8-5.9 trillion in the period before 2030 to support developing countries.
- Additionally, it underscores the need for around USD 4 trillion annually for clean energy technologies by 2030 to attain the goal of net-zero emissions by 2050.

GLOBAL CLIMATE FINANCING (ADAPTATION VS. MITIGATION):

Aspect	Adaptation Efforts	Mitigation Efforts
Focus	Addressing the impacts of climate change and building resilience to its effects.	Reducing greenhouse gas emissions to prevent or limit climate change.
Primary Goal	Minimizing the adverse effects of climate change on vulnerable communities and ecosystems.	Lowering carbon emissions to limit global temperature rise.
Examples of Projects	- Infrastructure for flood and storm protection. - Building drought-resistant agriculture. - Enhancing water management systems.	- Renewable energy projects (solar, wind, hydro). - Energy-efficient technologies. Reforestation and afforestation programs.
Key Beneficiaries	Vulnerable communities, especially in developing countries, and ecosystems.	Global community with a focus on reducing emissions, often worldwide.
Funding Sources	International climate finance mechanisms like the Adaptation Fund, Green Climate Fund (GCF).	Climate finance mechanisms like carbon markets, Clean Development Mechanism (CDM), and national budgets.
Time Horizon	Often involves shorter-term projects with immediate or near-term benefits.	Generally focused on medium to long-term projects with gradual emissions reductions.
Measurement	Metrics often include improved resilience, reduced vulnerability, and increased adaptive capacity.	Metrics include greenhouse gas emissions reduction, carbon intensity, and energy efficiency.

WAY FORWARD:

- ➢ **Streamline and simplify the procedures for accessing climate finance** to reduce administrative burdens and delays, especially for smaller and more vulnerable countries.
- ➢ **Involve developing countries**, especially those most vulnerable to climate change, in the decision-making processes of climate financing institutions. This includes the governance structures of funds like the Green Climate Fund (GCF).
- ➢ **Encourage private sector investment** in climate-friendly projects through financial incentives, risk-sharing mechanisms, and policy frameworks that promote sustainable investments.

WORLD OZONE DAY

**SOURCE: THE INDIAN EXPRESS**

WHY IN NEWS?

- ➢ **The 29th World Ozone Day** was recently observed by the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- ➢ This annual event serves as a platform to increase awareness about the pressing concern of ozone layer depletion and the international endeavours to address this issue.

ABOUT WORLD OZONE DAY:

- ➢ **September 16** marks the global commemoration of World Ozone Day, also recognized as the International Day for the Preservation of the Ozone Layer.
- ➢ This annual event serves as an opportunity to increase public consciousness regarding the diminishing Ozone Layer and the measures taken or planned to safeguard it.
- ➢ The **theme** for World Ozone Day 2023 is **"Montreal Protocol: fixing the ozone layer and reducing climate change."**

FACTORS RESPONSIBLE FOR OZONE DEPLETION:

- ➢ **Ozone-Depleting Substances (ODS):**
  - • ODS release chlorine and bromine atoms when they reach the stratosphere, which then participates in ozone destruction.
- ➢ **Chlorofluorocarbons (CFCs):**
  - • CFC production and usage are historically higher in industrialized regions.

The ozone layer depletion
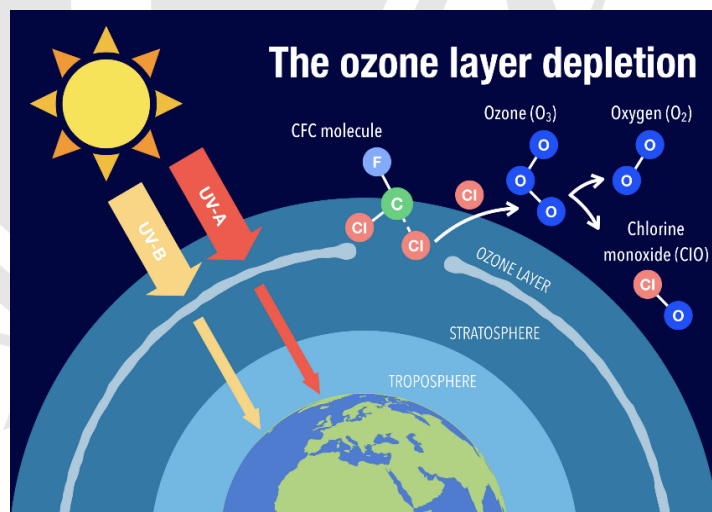
> ➢ **Geographical Regions with Ozone Holes**:
>   - Ozone holes, like the one in the Antarctic, are primarily caused by the presence of polar stratospheric clouds.
> ➢ **Polar Vortex:**
>   - The polar vortex traps air over the polar regions during winter.
>   - Within the polar vortex, conditions are conducive to rapid ozone depletion due to the presence of ODS and polar stratospheric clouds.
> ➢ **Solar Radiation:**
>   - Climatic Reason: Solar UV radiation plays a crucial role in ozone formation and depletion.
>   - The Polar Regions receive less UV radiation during certain seasons, making them vulnerable to ozone depletion.

INDIA'S ACHIEVEMENTS IN THE PRESERVATION OF OZONE LAYER:

➢ **India cooling action plan:**

India's climate action efforts **to achieve net-zero emissions by 2070**, as outlined in the **"Panchamrita"** initiative declared by the Indian Prime Minister during the 2021 Climate Change Conference of Parties.

➢ **Phasing out ODS:**

A study by India's MoEF&CC found that phasing out Ozone Depleting Substances (ODS) led to a 465 million-ton CO2 equivalent reduction by 2022. Predicted 778-million-ton reduction by 2030.

➢ **Kigali Amendment:**

India had a significant role in the finalization of the Kigali Amendment, which is related to reduce consumption & production of HFCs.

➢ **Montreal protocol:**

Hydrochlorofluorocarbons Phase-out Management Plan (HPMP) Stage I was effectively executed from 2012 to 2016, while Stage II is in progress and set to conclude by 2023.
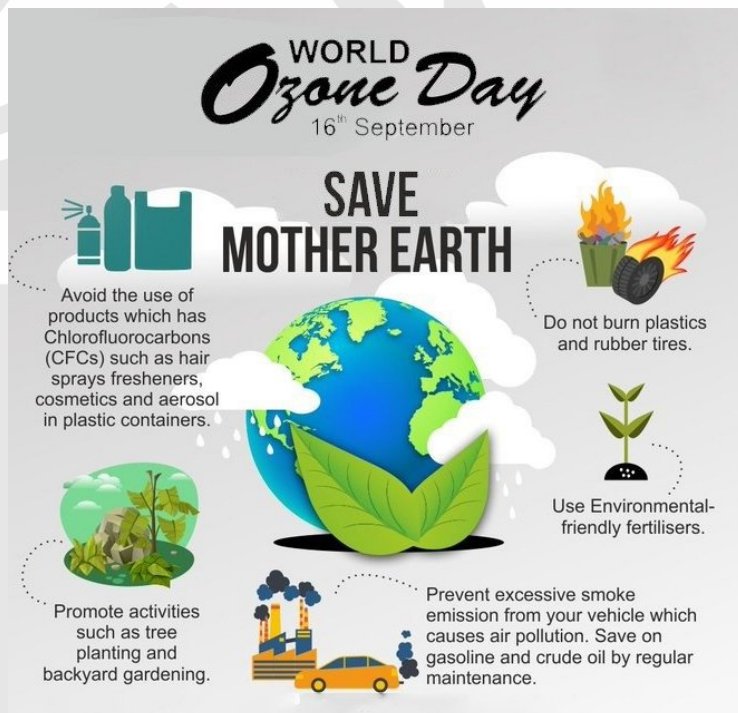
INTERNATIONAL EFFORTS FOR THE PRESERVATION OF OZONE LAYER:

Treaty	Objective
Vienna Convention for the Protection of the Ozone Layer (1985)	Establish a framework for international cooperation to protect the ozone layer and minimize ozone-depleting substances.
Montreal Protocol on Substances that Deplete the Ozone Layer (1987)	Phase out the production and consumption of ozone-depleting substances (ODS) to heal and protect the ozone layer.
Copenhagen Amendment to the Montreal Protocol (1992)	Accelerate the phase-out of ODS and implement additional measures to address the climate impacts associated with ODS.
Beijing Amendment to the Montreal Protocol (1999)	Phase out methyl bromide, an ozone-depleting pesticide, and explore alternatives.
Kigali Amendment to the Montreal Protocol (2016)	Phase down the production and consumption of hydrofluorocarbons (HFCs), potent greenhouse gases used as alternatives to ODS.
London Amendment to the Montreal Protocol (1990)	Strengthen controls on the production and use of specified ODS.
Dubai Pathway on Hydrochlorofluorocarbons (HCFCs) (2015)	Address the phase-out of HCFCs, transitional substitutes for ODS.

WAY FORWARD:

➢ **Research and Development**: Invest in research and development for innovative, environmentally friendly technologies and alternatives to ODS.
➢ **Policy Integration**: Integrate ozone protection into broader environmental and climate policies to ensure a holistic approach to global environmental challenges.
➢ **Capacity Building:** Build the capacity of developing nations to implement ozone protection measures effectively, including technology transfer and financial support.

GREEN NUDGES

SOURCE:THE HINDU

WHY IN NEWS?

➢ Research, in partnership with a Chinese online food delivery service, **indicates that implementing "green nudges" can effectively address environmental issues.**

WHAT IS GREEN NUDGE?

- ➤ **Nudges are subtle interventions that influence decisions without limiting choices.**
- ➤ **Origin:** Economist Richard Thaler's 2008 theory promotes self-control in decision-making.
- ➤ **Goal:** Use practical cues ("nudges") to guide choices toward long-term benefits.
- ➤ **Achievement:** Richard Thaler received the 2017 Nobel Prize in economics.
- ➤ Green nudges encourage eco-friendly behaviour.
- ➤ **Effectiveness:** Shown to change behaviour and reduce environmental harm.
- ➤ **Alternative to Regulation:** Promotes sustainability without strict rules.
- ➤ **Techniques:** Include public awareness campaigns, social norms marketing, and community initiatives.

Green Nudges for Climate Change:
Purpose: Encourage choices benefitting individuals, communities, and the planet.
Examples: UK's "The Big Switch Off," Netherlands' "Pay as you throw," US' plastic bag bans.
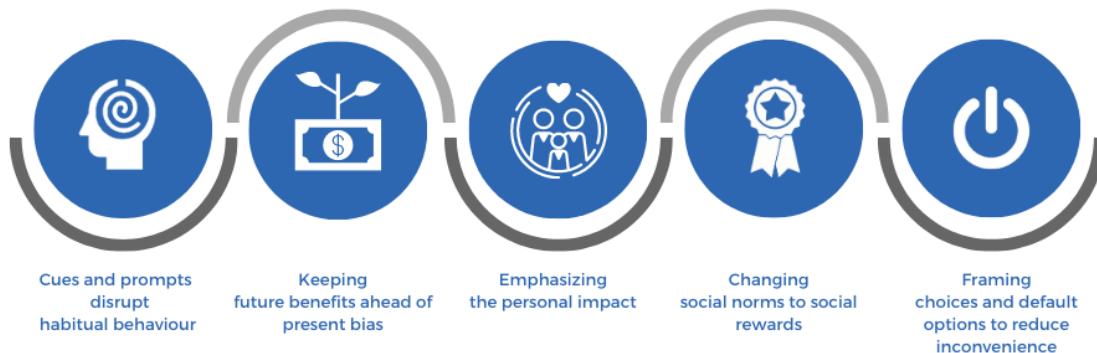**LiFE Movement (Underlying Green Nudge):**
Concept: Promotes mindful, eco-conscious living.
Goal: Encourage global collective action for climate-friendly daily choices.
Usage: Indian policymakers employ nudge policies for social and economic change.
Examples: Swachh Bharat Mission, GiveItUp campaign, Beti Bachao Beti Padhao (BBBP).

Five techniques to nudge consumers towards sustainable consumption

| Cues and prompts disrupt habitual behaviour | Keeping future benefits ahead of present bias | Emphasizing the personal impact | Changing social norms to social rewards | Framing choices and default options to reduce inconvenience |

CHALLENEGS ASSOCIATED WITH GREEN NUDGING:

- ➤ **Varying Impact:** Green nudges may not work the same way for everyone, making consistent behaviour change a challenge.
- ➤ **Resistance to Change:** People might reject nudges, thinking they're pushy or unwanted.
- ➤ **Cultural Differences:** Nudges may not fit all cultures, as beliefs and behaviours differ.
- ➤ **Overcoming Habits:** Encouraging eco-friendly habits can be tough when people are used to their routines.

➢ **Ethical Concerns:** Some may find nudging ethically questionable if it's done without consent.
➢ **Measuring Success:** It's hard to tell how well green nudges work over time.

WAY FORWARD:

➢ **Privacy Care:** Protect personal data when using tech-based nudges and respect privacy worries.
➢ **Check and Improve:** Regularly see if nudges are working and make them better based on feedback.
➢ **Offer Rewards:** Give rewards to encourage green actions along with nudging.
➢ **Rules and Guidelines:** Make rules for how nudges should be used, especially for protecting the environment.

CLIMATE CHANGE AND ONE HEALTH APPROACH

SOURCE: TH

WHY IN NEWZ?

The Intergovernmental Panel on Climate Change (IPCC) has warned that climate change is heightening the global risk of infectious diseases, and this is already being seen in the form of more frequent and severe outbreaks of diseases such as dengue, malaria, and chikungunya. Embracing the One Health paradigm and safeguarding ecosystems are key defences against climate-induced disease scenarios.

ABOUT ONE HEALTH APPROACH:

According to WHO, One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent.
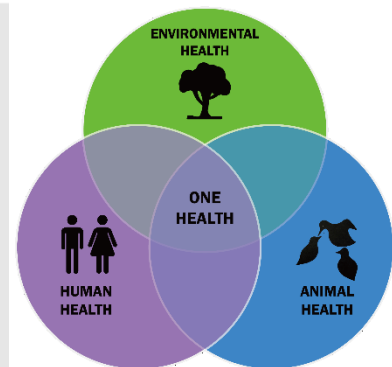
HOW CLIMATE CHANGE IS CONTRIBUTING IN INCREASING ZOONOTIC DISEASES:

1. **Altered Habitats:** Climate change disrupts ecosystems, pushing disease-carrying animals into new areas where they interact with humans.
2. **Vector Proliferation:** Warmer temperatures and altered rainfall patterns can expand the range of disease vectors like mosquitoes, increasing transmission opportunities.
3. **Animal Stress:** Climate-related stress on wildlife weakens their immune systems, making them more susceptible to pathogens that can jump to humans.
4. **Human Migration:** Climate-induced displacement can lead to overcrowding in refugee camps, facilitating disease spread.
5. **Changing Pathogen Dynamics:** Climate affects the survival, replication, and distribution of pathogens, potentially making them more infectious.
6. **Food and Water Contamination:** Climate-related extreme events can contaminate food and water sources, leading to the transmission of zoonotic diseases.

NEED FOR ONE HEALTH:

❖ **Complexity of Zoonotic Diseases:** Zoonotic infections, which originate in animals and transmit to humans, are complex and require a multidisciplinary approach.

❖ **Interconnected Ecosystems:** Human health, animal health, and the environment are interconnected, and disruptions in one can affect the others.

SIGNIFICANCE OF ONE HEALTH:

❖ **Early Detection and Prevention:** One Health enables early detection of zoonotic threats and the implementation of preventive measures. <u>For example, monitoring and controlling avian influenza in poultry can prevent human outbreaks.</u>

❖ **Disease Control:** Collaboration between human and veterinary health sectors is crucial for effective disease control. <u>For instance, the control of rabies in humans is dependent on vaccinating and managing animal reservoirs like dogs.</u>

❖ **Emerging Diseases:** One Health is vital for addressing emerging diseases like <u>COVID-19, where the origin is linked to wildlife and the environment.</u>

❖ **Antibiotic Resistance:** It helps combat antibiotic resistance by promoting <u>responsible use in both human medicine and animal agriculture.</u>

❖ **Environmental Protection:** One Health approaches protect ecosystems, <u>preventing diseases like Lyme disease by managing animal populations that host disease vectors like ticks.</u>

❖ **Global Health Security:** It enhances global health security by monitoring and controlling diseases at their source, preventing pandemics.

GOVERNMENT INITIATIVES TOWARDS THE ONE HEALTH APPROACH:

Initiative	Description
Integrated Disease Surveillance Programme (IDSP)	▪ This program, initiated by the **Ministry of Health and Family Welfare, monitors and responds to disease outbreaks and includes zoonotic diseases in its surveillance activities.** ▪ It helps in early detection and containment of diseases that can spread between humans and animals.
National Action Plan on Antimicrobial Resistance (NAP-AMR)	▪ Led by the **Ministry of Health and Family Welfare**, this plan **addresses antimicrobial resistance (AMR) in both human healthcare and animal husbandry**. ▪ It promotes the responsible use of antibiotics and surveillance of AMR in zoonotic pathogens.
National Institute of One Health (NIOH)	▪ Proposed by the **Indian Council of Medical Research (ICMR)**, this institute aims to promote research, capacity building, and collaboration among multiple sectors, including human and animal health, wildlife, and environment, to address zoonotic diseases.
Collaboration with International Organizations	India collaborates with international organizations such as the **World Health Organization (WHO), Food and Agriculture Organization (FAO), and World Organisation for Animal Health (OIE) to strengthen** One Health initiatives and global health security.
Wildlife Conservation Efforts	Conservation projects to protect wildlife and their habitats, reducing the risk of zoonotic spill over.

WAY FORWARD:

➢ **One Health Approach:** Implement a One Health approach involving collaboration among human health, animal health, and environmental sectors.

➢ **Early Detection:** Strengthen surveillance systems to detect zoonotic disease outbreaks promptly.

➢ **Ecosystem Protection:** Preserve and restore ecosystems to reduce disease spillover from wildlife.

➢ **Resilient Agriculture:** Promote climate-resilient and sustainable agriculture to minimize disease risks in livestock.

➢ **Antimicrobial Stewardship:** Encourage responsible antibiotic use to combat antimicrobial resistance.

➢ **International Collaboration:** Foster global cooperation to address cross-border disease threats.

SEVEN YEARS ON, MISSION TO CLEAN THE GANGA REMAINS A WORK IN PROGRESS

SOURCE: THE HINDU

WHY IN NEWS?

➢ Since the government announced its ambitious **20,000 crore National Mission for Clean Ganga (NMCG)** seven years ago, **just 20% of the anticipated sewage generated** in the five major States that border the river can be treated in treatment facilities already in place.

➢ Only 20% of the sewage entering the Ganga is now being treated by Sewage Treatment Plants; NMCG intends to enhance this to 33% by 2024 and 60% by

★ Main pillars of the Namami Gange Programme are:-

Sewerage Treatment Infrastructure

River-Front Development

River-Surface Cleaning

Bio-Diversity

Afforestation

Public Awareness

Industrial Effluent Monitoring

Ganga Gram

2026; Only 7,000 Minimum Liquid Discharge capacity will be built, according to the Centre; The rest must beestablished by States**.**

ABOUT NATIONAL MISSION FOR CLEAN GANGA:

Aspect	Description
Mission Objective	To rejuvenate and clean the Ganga River and its tributaries.
Launch Year	2011 (formerly known as the National Ganga River Basin Authority - NGRBA).
Governing Body	Ministry of Jal Shakti, Government of India.
Geographic Focus	Primarily focuses on the Ganga River and its basin, covering several states.
Key Objectives	1. Ensuring the uninterrupted and clean flow of the Ganga. 2. Reduction of pollution in the river. 3. Conservation and rejuvenation of the river's ecosystem. 4. Promoting sustainable sanitation practices. 5. Enhancing public participation and awareness.
Implementation Mechanism	NMCG acts as the apex body coordinating various programs and projects.
Notable Programs	1. **Namami Gange:** A comprehensive program with multiple components to address pollution, infrastructure development, and biodiversity conservation. 2. **Ganga Gram Yojana:** Focusing on improving sanitation and hygiene in villages along the Ganga. 3. **Industrial Effluent Monitoring:** Regulating and monitoring industrial discharge into the river.
Funding	Supported by both the central and state governments, as well as international organizations and funds.
Key Achievements	1. Reduction in the discharge of untreated sewage into the Ganga. 2. Progress in the construction of sewage treatment plants and sewage infrastructure. 3. Initiatives for riverfront development and biodiversity conservation.

MAJOR CAUSES FOR RIVER POLLUTION IN INDIA:

- ➤ **Deforestation and soil erosion**: **River sedimentation and siltation** are caused by deforestation and soil erosion in the **catchment basins of rivers.**
  - • This impacts **aquatic animals,** decreases water quality, and **disturbs aquatic habitats**due **to increased biological demands**.
  - • Aquatic animals like **Gangetic dolphins** are facing a **risk of extinction** due toexcessive river pollution.
- ➤ **Mining activities:** Pollutants from mining operations, including **heavy metals, sediment, andchemicals, a**re released into rivers.
- ➤ **Industrial effluents:** River pollution is primarily caused by the discharge of industrial effluentthat has either **not been properly treated** or has been **treated insufficiently**.
  - • Approximately 72,368 million litres per day (MLD) of sewage were produced in 2021, but only 26,869 MLD could be treated operationally, according to the **CPCB study National Inventory of Sewage Treatment Plants 2021.**
- ➤ **Sewage and domestic waste: Domestic trash and raw sewage** are **directly dumped** into rivers in many cities and towns due to **inadequate sewage treatment equipment**.
  - • This trash is full of **dangerous bacteria, pathogens, nutrients,** and organic material that **lowers water oxygen levels** and increases **the risk of waterborne diseases** spreading**.**
- ➤ **Agricultural runoff:** When **agricultural chemicals** like **fertilizers, insecticides, and herbicides** run off fields into neighbouring bodies of water, they pollute rivers.
  - • **Eutrophication,** which results in **algal blooms** and **the depletion of oxygen**, can bebrought on by excessive nutrients like **nitrogen and phosphorus**.
- ➤ **Urbanization and construction activities:** Increased flow of pollutants, **including silt, construction waste,** and oil from roads and buildings, into surrounding rivers is frequently aside effect of rapid urbanization and construction projects.
- ➤ **Population pressure:** India's **population density** and sheer size put **tremendous strain on its**water supply. High population density may result in increased waste production and excessive water use, which may worsen river pollution.
  - • **Socio-religious practices** like the **immersion of idols** in the rivers have severelyimpacted the quality of river waters**.**
- ➤ **Climate Change:** By **changing precipitation patterns,** resulting in droughts or floods, andaltering water temperature, climate change can worsen river pollution.

CHALLENGES ASSOCIATED WITH RIVER CONSERVATION IN INDIA:

- ➤ **LACK OF COMPREHENSIVE RIVER-BASIN MANAGEMENT**: It might be difficult **to coordinate river conservation** activities across many administrative boundaries. A more comprehensivestrategy that takes into account entire river basins is required.
- ➤ **LACK OF ADEQUATE SEWAGE TREATMENT**: There **are insufficient sewage treatment facilities** in numerous towns and cities along the rivers in India. As a result, untreated sewageis dumped directly into rivers, creating health concerns and lowering the quality of the water.
- ➤ **ENVIRONMENTAL CONCERNS:** By **outcompeting native species and changing food webs, invasive species** can disturb the natural ecosystems of rivers. Invasive species managementand control is a difficult task.

➢ **ENCROACHMENT AND HABITAT DESTRUCTION**: **Unauthorised building projects and encroachments** on riverbanks obstruct the flow of rivers **and harm aquatic animals' habitats**. The management and restoration of these sites is difficult**.**

➢ **REGULATORY AND ENFORCEMENT CHALLENGES:** Effective efforts to conserve rivers can be hampered by inconsistent environmental regulatory enforcement and lax fines**.**

➢ **LACK OF FUNDING:** Various schemes like **Namami Gange** have been ineffective due to **poorfunding f**rom the government.

➢ **LACK OF PUBLIC AWARENESS:** It is essential to **educate the public** about the value of river protection and the part that **people and communities** may play in it.

INITIATIVE	OBJECTIVE
1. NATIONAL RIVER CONSERVATION PLAN 1995	The National River Conservation Plan (NRCP) is a centrally financed program that was established in 1995 with the goal of reducing river pollution.
2. RIVER BOARDSACT 1956	In order to coordinate and control the development and use of interstate river waters, this legislation calls for the creation of River Boards. These boards have a part to play in protecting and managingriver basins.
3. NATIONAL GANGA RIVERBASIN AUTHORITY	The Ganga Action Plan and afterwards the Namami Gange programme were both implemented by NGRBA. It is essential for organising and carrying out conservation measures for the Ganga River.
4. NAMAI GANGEMISSION	The Namami Gange programme, which was established in 2014, is a leading effort to purify and revitalise the Ganga River (commonly referred to as the Ganges). Construction of sewage treatment facilities, riverfront development, and public awareness campaigns are only a few of the varied tasks involved.
5. WATER (PREVENTION AND CONTROLOF POLLUTION ACT)1974	The framework for preventing and managing water contamination is provided by this law.
6. ENVIRONMENTAL PROTECTION ACT1986	The central government is given the authority to act to conserve and enhance the environment thanks to this legislation. It contains regulations for controlling actions that could harm the environment, especially those that affect rivers.
7. CENTRAL POLLUTION CONTROL BOARD	River water pollution is prevented and controlled by the Central Pollution manage Board (CPCB) and State Pollution Control Boards (SPCBs), who establish and enforce water quality standards, manage industrial discharges, and take other actions.

8. NATIONAL GREEN TRIBUNAL	The National Green Tribunal was created under the National Green Tribunal Act of 2010 and began functioning in 2011. Its main goal is to offer a specialized venue for the quick and efficient resolution of disputes and issues involving environmental preservation, resource conservation, and the application of environmental laws and regulations.
9. NATIONAL WATER POLICY 2012	The National Water Policy offers a thorough framework for managing water resources and emphasizes the necessity of sustainable water usage and river conservation. It supports the idea of maintaining environmental flows in rivers and coordinated river basin management.

➢ Many people might not fully comprehend how their actions affect the health of rivers.

WAY FORWARD:

➢ **PROMOTE SUSTAINABLE AGRICULTURE**: Encourage farmers to utilise sustainable farming methods that conserve soil and water, use less chemical fertilisers and pesticides, and limit soil erosion. Government of Andhra Pradesh introduced zero budget natural farming for sustainable agriculture.

➢ **PROMOTE GREEN INFRASTRUCTURE**: To enhance water quality and lessen urban runoff into rivers, promote the use of green infrastructure techniques including built wetlands and organic stormwater management systems.

➢ **AFFORESTATION AND RIPARIAN ZONES**: Encourage the planting of trees and the restoration of riparian areas along riverbanks to strengthen the banks, lessen erosion, and improve wildlife habitat.

➢ **STRICTER ENFORCEMENTS**: Ensure accountability and openness in the government organisations in charge of river conservation. Encourage public involvement and examination.

➢ **INTERNATIONAL COLLABORATION**: To address problems with shared water resources and encourage river conservation at the regional level, cooperate with neighbouring nations on transboundary river management.

• Example: India and Bangladesh Joint River commission for mutually solving problems related to transboundary river.

TRANSFORMATIVE PROGRAMS TO EMPOWER PERSONS WITH DISABILITIES

SOURCE: PIB

WHY IN NEWS

➢ Minister of State, Km. **Pratima Bhoumik, r**evealed five innovative **programs at the Dr. Ambedkar International Centre (DAIC).**

➢ This significant occasion marked the introduction of pioneering initiatives designed to positively impact the **lives of individuals with disabilities (Divyangjan),** highlighting the government's steadfast dedication to their comprehensive growth and empowerment**.**

TRANSFORMATIVE INITIATIVES :

PM DAKSH DEPwD portal would serve as a one-stop platform for individuals with disabilities seeking skill training and job prospects. This aligns with PM Modi's vision of inclusive development for all, underlining trust and collective efforts.

About the PM DAKSH Portal:

- Launched by the Department of Empowerment of Persons with Disabilities.

- Aims to offer skill training and employment opportunities for people with disabilities.

- Eligibility: Individuals aged 18-45 qualify for skill development training.

- Key features include seamless registration via the Unique Disability ID (UDID), course selection based on interests and needs, access to training partners, and online study materials, among others.

Pathways to access	The book titled "**Courts on Disability Rights**" has assembled significant legal rulings related to disability rights from both the Supreme Court and various high courts. It serves as a **valuable reference resource** for individuals with disabilities and those involved in the disability advocacy field.
Online case monitoring	The new application will handle complaints filed by persons with disabilities in a paperless way, making it easier to file complaints, get reminders and schedule hearings.
UDID Portal	Its primary emphasis is on data. DEPwD intends to share anonymized data through the UDID portal for research purposes, enabling evidence-based decision-making through the use of authentic information
PM Daksh Portal	This digital platform is designed to provide employment opportunities for individuals with disabilities. The portal will include a variety of skill training choices, easy registration via UDID, and access to skill training options based on one's location, among other features.
MOU with Council of architecture	The MOU mandates inclusion of universal accessibility courses in Bachelor of Architecture programs and jointly creates certified courses for accessibility audits.

CHALLENGES FACED BY PERSONS WITH DISABILITIES IN INDIA

- ➢ Societal stigma and discrimination:
  - Approximately 400 million disabled individuals reside in developing countries, where they are often denied essential services such as healthcare, education, and employment.
- ➢ Lack of employment opportunities:
  - According to the World Health Organization (WHO), individuals with disabilities face significant obstacles to accessing social and economic development opportunities.
  - Nearly 70% of people with disabilities in these regions are without jobs.

- Limited accessibility:
  - Public infrastructure and transportation often lack proper accessibility features, making it difficult for disabled individuals to move around independently.
- Inadequate policies formulations:
  - Despite various policies and laws in place to protect the rights of disabled individuals, effective implementation and enforcement can be lacking.

GOVERNMENT INITIATIVES FOR THE WELFARE OF THE DISABLED PEOPLE

	Welfare Measure	Objective
1.	Rights of Persons with Disabilities Act 2016	Enhance their physical, social, and psychological recovery by mitigating the impacts of disabilities and boosting their economic capabilities.
2.	Accessible India Campaign	Barrier free and conducive environment for Divyangjan
3.	Deen Dayal Disabled Rehabilitation scheme	Central sector scheme for rehabilitation and education of persons with disabilities.
4.	Unique Disability Identification Project	Database for persons with disabilities.

WAY FORWARD

- **Promotion of inclusivity:**
  Encourage schools, colleges, and workplaces to foster a culture of inclusion and diversity.
- **Skill development and vocational training:**
  Establish skill development and vocational training centers tailored to the needs of disabled individuals.
- **Sensitization:**
  Train government officials, healthcare providers, and service providers to be more sensitive to the needs and rights of disabled individuals.

# JAL JEEVAN MISSION REMAINS A PIPE DREAM

SOURCE: THE HINDU

WHY IN NEWS?

- In 2019, Mahoba district in Uttar Pradesh had only 1,612 households with tap water access, but by 2023, thanks to the Jal Jeevan Mission, it achieved a remarkable 98% coverage, connecting 1,29,209 rural homes.
- This significant increase in tap connections is unparalleled in India. However, a visit to the villages reveals that being "connected" under JJM doesn't always guarantee a reliable water supply.

ABOUT JAL JEEVAN MISSION:

➢ Launched in 2019, the mission's objective is to ensure that every rural household r**eceives 55 litres** of water per person per day through **Functional Household Tap Connections (FHTC)** by **2024.**

➢ JJM seeks to promote a **collective commitment** to water and operates under the auspices of the **Ministry of Jal Shakti.**

➢ **Funding pattern for the scheme:**
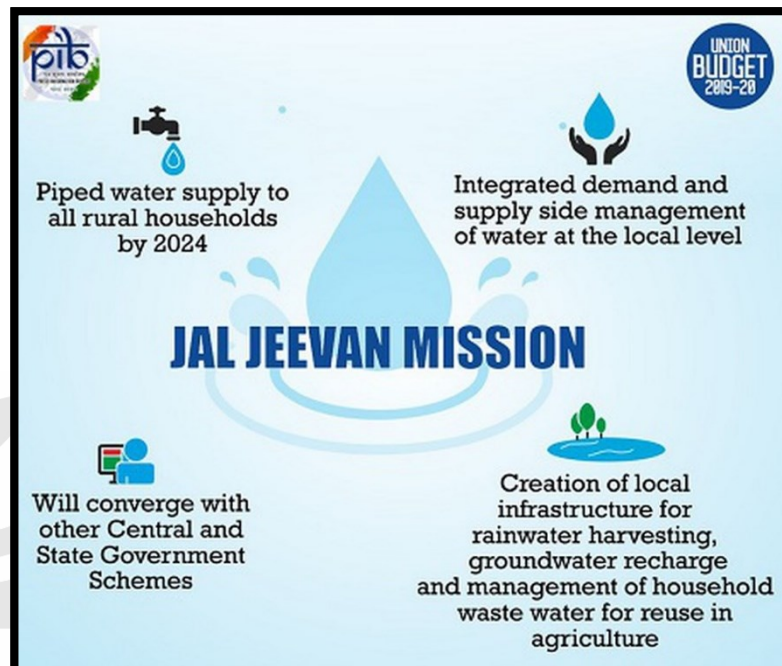
- **Centrally sponsored scheme (Central and state governments share the funds)**
- **Centre: State-90:10 for Himalayan and hilly states**
- 100% for Union territories
- 50-50 for other states.

➢ **Institutional mechanism:**

- **National Jal Jeevan Mission**: Implementation of JJM and policy guidance
- **State water and sanitation mission**: Implementation at the state level
- **District water and sanitation mission**: Implementation at the district level.
- **Paani Samiti** / Village Water Sanitation Committee - sub-committee of Gram Panchayat (GP): Local community's involvement in planning and implementation with the help of SHGs, ASHA workers, and Anganwadi members.

ACHIEVEMENTS OF THE MISSION:

➢ Jal Jeevan Mission is a major global **welfare initiative with a budget of INR 3600 billion (US $ 43.80 billion).**

➢ By April 4, 2023, **60% of rural households, over 11.66 Crore, have tap water, some regions achieving 100% coverage.**

➢ Over 8.42 crore rural households, 40 crore people, benefited in three years, exceeding the populations of multiple countries.

➢ Safe water access **can reduce infant mortality by 30%.**

➢ It has evolved into a **'Jan Andolan,'** with local communities managing water resources and supply systems for long-term security.

Provide FHTs to every household

Creating infrastructure for water resources.

objectives

Ensure sustainability of water systems.

Encourage local community involvement.

Raise awareness about safe drinking water.

CHALLENGES IN THE IMPLEMENTATION OF THE MISSION:

➢ **Discrepancies in official data:**

Official records indicate 100% tap connections in certain villages, but on the ground, villages contradict the claim.

➢ **Challenges of uneven terrain:**

The difficult terrain in Mahoba makes it challenging to lay pipes, leading to disruptions in water supply

➢ **Infrastructure issues:**

In Kunata village, many homes lack the necessary pipes and taps, highlighting infrastructure deficiencies.

GOVERNMENT EFFORTS FOR ENSURING TAP WATER MANAGEMENT IN INDIA:

	INITIATIVE	OBJECTIVE
1.	JAL SHAKTI ABHIYAN	Catch the Rain campaign to conserve rainwater.
2.	MISSION AMRIT SAROVAR	The goal is to enhance and restore 75 water bodies within every district.
3.	ATAL BHUJAL YOJANA	Sustainable groundwater management.
4.	NATIONAL AQUIFER MAPPING AND MANAGEMENT PROGRAM	Mapping aquifers for groundwater recharge and sustainable use.
5.	NATIONAL PERSPECTIVE PLAN FOR NTERLINKING OF RIVERS	River linking to ensure water supply to water deficit areas.
6.	CENTRAL GROUND WATER BOARD	Scientific guidance for supervising, examining, tracking, evaluating, enhancing, and controlling the nation's groundwater resources.

WAY FORWARD

➢ **Develop adequate infrastructure:**

It is crucial to set up strong systems for maintaining and managing water supply infrastructure.

This involves training and deploying competent personnel and engaging local communities in maintenance efforts.

➢ **Enhance community engagement:**

Foster community engagement in the design, decision-making, and upkeep of water supply systems, while also promoting awareness of the importance of safe drinking water and sanitation practices.

➢ **Enhance funding:**

Secure ongoing and adequate support for the mission, mobilizing financial resources from government allocations and external sources to meet the substantial investment requirements.

WHO RELEASES ITS FIRST-EVER REPORT ON THE IMPACT OF HIGH BP

SOURCE: THE HINDU

WHY IN NEWS?

➢ **The World Health Organization (WHO**) highlighted in its inaugural report on the worldwide effects of hypertension that **around 80% of individuals with high blood pressure do not receive adequate treatment.**

FINDINGS OF THE REPORT:

➢ WHO report says approximately **4 out of 5 people with hypertension worldwide are not receiving adequate treatment.**

➢ Scaling up hypertension treatment coverage could prevent 76 million deaths between 2023 and 2050, according to the World Health Organization (WHO).

PREVALENCE OF HYPERTENSION IN INDIA AND THE WORLD:

➤ The **2019-20 National Family Health Survey (NFHS-5**) indicated a **hypertension prevalence of 24% in men and 21% in women, up from 19% and 17% in the previous round (2015-16).**

➤ The prevalence of hypertension in the Southern States of India exceeds the national average, with **Kerala leading the way at 32.8% for men and 30.9% for women**, followed closely by Telangana.

% OF POPULATION SUFFERING FROM HYPERTENSION
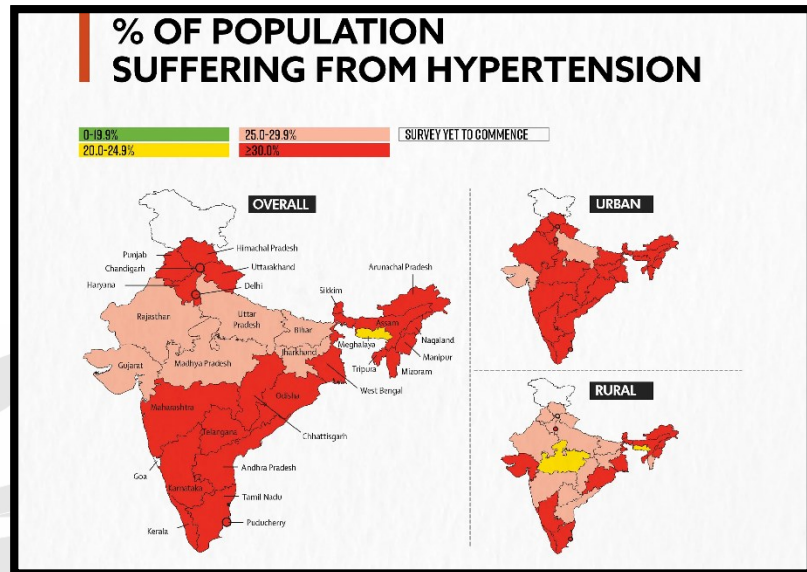
➤ **Nationally, 21.3% of women and 24% of men aged 15 and above have hypertension**.

➤ Hypertension affects 1 in 3 adults worldwide and is a leading cause of conditions like stroke, heart attack, heart failure, and kidney damage.

➤ The number of people with hypertension doubled between 1990 and 2019, reaching 1.3 billion.

➤ Nearly half of those with hypertension are unaware of their condition.

➤ **Over 75% of adults with hypertension live in low- and middle-income countries**

MAJOR REASONS FOR HYPERTENSION:

➤ **Unhealthy Diet:**
A study published in the Journal of Hypertension in 2019 found that poor dietary habits, including high salt intake and low consumption of fruits and vegetables.

➤ **Sedentary Lifestyle:**
The World Health Organization (WHO) reports that physical inactivity is a global problem, with 23% of adults not meeting recommended levels of physical activity.

➤ **Obesity:**
According to a study published in The Lancet in 2021, obesity is a growing concern in India. The rise in obesity rates is strongly associated with hypertension.

➤ **Stress:**
Chronic stress, often related to work and lifestyle, can contribute to hypertension.

➤ **Tobacco and Alcohol Use:**
The tobacco use and excessive alcohol consumption are risk factors for hypertension.

STEPS TAKEN FOR ADDRESSING HYPERTENSION

➢ **India Hypertension Control Initiative (IHCI):**

The India Hypertension Control Initiative (IHCI) is a collaborative effort that includes partners such as the Indian Council of Medical Research, WHO-India, the Ministry of Health and Family Welfare, and state governments.

Its aim is to enhance blood pressure management for individuals suffering from hypertension.

➢ **FIT INDIA MOVEMENT:**

The Fit India Movement is a nationwide initiative in India that promotes the importance of maintaining good health and fitness through regular physical activities and sports.

➢ **INTERNATIONAL YOGA DAY:**

Since its introduction at the United Nations General Assembly in 2014, the International Day of Yoga has been observed globally every year on June 21 starting in 2015.

Yoga incorporates deep breathing exercises, meditation, and relaxation techniques that help reduce stress.

WAY FORWARD:

➢ **Lifestyle changes** like adopting a healthier diet, quitting tobacco, and increasing physical activity can help lower blood pressure.

➢ **Some individuals may require medication.**

➢ Prevention, early detection, and effective management of hypertension are cost-effective interventions that should be prioritized, especially at the primary care level.

INDIA AGEING REPORT 2023

SOURCE: TH

WHY IN NEWS?

India's elderly population is growing at a rapid rate, with a projected share of **over 20% of the total population by 2050,** according to the **United Nations Population Fund (UNFPA) in its 2023 India Ageing Report.**

KEY FINDINGS OF THE REPORT:

DEMOGRAPHIC TRENDS:

❖ **India's senior citizen population** is experiencing rapid growth, with a **decadal growth rate of 41%.**

❖ **By 2050, over 20% of India's population will be elderly.**

❖ The **elderly population** will **surpass the population of children (0 to 15 years old) by 2046.**

❖ The **population of individuals aged 80+ years** is predicted to **increase by approximately 279% from 2022 to 2050.**

HIGHER LIFE EXPECTANCY OF WOMEN:

❖ **Women have a longer life expectancy at ages 60 and 80 compared to men**, with variations among states.

❖ For instance, in Himachal Pradesh and Kerala, women at 60 years have a life expectancy of 23 and 22 years, respectively, which is four years more than men at 60 years in these States, unlike the national average gap of only 1.5 years.

POVERTY AND WELL-BEING:

❖ **Over 40% of India's elderly are in the poorest wealth quintile.**

❖ Poverty among the elderly is a concern, impacting their quality of life and healthcare utilization.

❖ A significant proportion of elderly individuals, particularly women, lack any income, affecting their quality of life and healthcare utilization.

REGIONAL VARIATIONS:

❖ There are notable differences in the elderly population and their growth rates across states.

❖ **Most southern and certain northern states like Himachal Pradesh and Punjab reported a higher proportion of elderly population than the national average in 2021,** a gap expected to widen by 2036.

SEX RATIO OF THE ELDERLY POPULATION:

❖ The sex ratio among the elderly has been steadily increasing since 1991, in contrast to the stagnation in the general population's ratio.

❖ Between 2011 and 2021, the ratio increased across India except in Union Territories and western India.

❖ In the northeast and east, the ratio remained below 1,000, indicating more men than women among the elderly.

❖ However, in central India, the ratio increased significantly, suggesting that women have outperformed men in survival after 60 years over the decade.

LOW AWARENESS OF SOCIAL SECURITY SCHEMES:

❖ Senior citizens in India have limited awareness of various social security schemes designed for them.

❖ **Only about 55% are aware of the old-age pension scheme (IGNOAPS), 44% of the widow pension scheme (IGNWPS), and 12% of the Annapurna Scheme.**

CONCERNS AND CHALLENGES:

❖ Poverty in old age is gender-biased, especially when older women are more likely to be widowed, living alone, without income, and dependent on family support.

❖ The primary challenges facing India's aging population include the **feminization and ruralisation of the elderly population.**

KEY RECOMMENDATIONS OF THE REPORT:

ENHANCE DATA COLLECTION ON ELDERLY:

▪ Include **questions related to older individuals** in forthcoming data collection efforts like the **National Sample Survey, National Family Health Survey, and Census of India to acquire more reliable data r**egarding elderly issues.

BOOST AWARENESS OF ELDERLY SCHEMES:

▪ The government should take measures to heighten awareness regarding existing schemes and initiatives tailored for senior citizens. This ensures eligible individuals are informed and can benefit from these programs.

REGULATE OLD AGE HOMES:

▪ Subject all Old Age Homes to regulatory oversight to safeguard the well-being and rights of elderly residents.

PROMOTE AGING IN PLACE:

▪ Encourage older individuals to age in their own residences whenever possible. This can be facilitated by establishing **short-term care facilities**, such as **day-care centres, to support families in caring for elderly members.**

SUPPORT ELDERLY SELF-HELP GROUPS:

▪ Encourage the formation and operation of self-help groups among the elderly. These groups can offer social support, resource-sharing, and promote the well-being of older individuals.

PROMOTE MULTIGENERATIONAL HOUSEHOLDS:

▪ Emphasize the importance of having elderly individuals reside in multigenerational households. This arrangement can provide emotional and practical support to older family members.

GOVERNMENT SCHEMES FOR ELDERLY POPULATION:			
SCHEME	**OBJECTIVE**	**ELIGIBILITY**	**BENEFITS**
1. **National Policy on Older Persons (NPOP)**	To provide a **comprehensive framework for the welfare of older persons in India.**	Persons **aged 60 years and above.**	Social security benefits, healthcare, nutrition, housing, and other services.
2. **National Social Assistance Programme (NSAP)**	To provide social security benefits to the poor and vulnerable, including older persons.	Persons **aged 60 years and above** who are destitute, indigent, or physically or mentally disabled.	**Old age pension, widow pension, disability pension, and pension for the unmarried.**
3. **Pradhan Mantri Vaya Vandana Yojana (PMVVY)**	To **provide a regular income to senior citizens.**	Persons **aged 60 years and above**.	A **monthly pension of Rs. 3,000, Rs. 3,500, or Rs. 4,000,** depending on the age of the subscriber and the amount of premium paid.
4. **Rashtriya Vayoshree Yojana**	To provide a **monthly pension to indigent senior citizens.**	Persons aged **60 years and above who have a monthly income of less than Rs. 2,000.**	**A monthly pension of Rs. 3,000.**
5. **SAMPANN Project**	To provide **financial assistance to older persons to set up self-employment ventures.**	Persons **aged 60 years and above.**	**Financial assistance of up to Rs. 50,000.**
6. **SACRED Portal for Elderly**	To provide **a single window for accessing information and services for older persons.**	All older persons in India.	Information on government schemes, social welfare organizations, and other resources for older persons.
7. **Senior care Ageing Growth Engine (SAGE)**	To promote entrepreneurship and innovation in the ageing care sector.	All interested individuals and organizations.	Financial assistance, training, and mentorship for entrepreneurs in the ageing care sector.

ABOUT UNFPA (UNITED NATIONS POPULATION FUND):
- UNFPA operates as a specialized agency focusing on sexual and reproductive health within the UN General Assembly.

MANDATE ESTABLISHMENT:
- The UN Economic and Social Council (ECOSOC) grants UNFPA its mandate.
- It started as a trust fund in 1967 and commenced operations in 1969.
- In 1987, it was formally renamed the United Nations Population Fund, retaining the original abbreviation, 'UNFPA.'

OBJECTIVE:
- UNFPA directly addresses Sustainable Development Goals related to health (SDG3), education (SDG4), and gender equality (SDG5).

FUNDING:
- UNFPA does not receive funding from the UN budget.
- It relies solely on voluntary contributions from donor governments, intergovernmental organizations, the private sector, foundations, and individuals.

UNITED NATIONS (UN):

- International organization **established in 1945.**
- Comprises **193 Member States**.
- Works on maintaining international peace, human rights protection, humanitarian aid, sustainable development, and upholding international law.

HISTORY OF UN FOUNDATION:
- The **International Peace Conference in 1899** led to **instruments for peaceful conflict resolution** and the **establishment of the Permanent Court of Arbitration.**
- **League of Nations**, created in **1919**, aimed at promoting international cooperation and peace.
- UN's precursor, the **League of Nations**, and the **International Labour Organization (ILO) were established in 1919.**
- The name "**United Nations**" was **coined by U.S. President Franklin D. Roosevelt in 1942**
- **United Nations Conference on International Organization in 1945** led to the signing of the UN Charter, **establishing the UN.**

COMPONENTS OF THE UN:
- **GENERAL ASSEMBLY:** Main UN organ for deliberation, policymaking, and representation.
- **SECURITY COUNCIL:** Responsible for **international peace and security**, **comprising five permanent and ten non-permanent members.**
- **ECONOMIC AND SOCIAL COUNCIL (ECOSOC):** Focuses on economic, social, and environmental issues and coordinates UN specialized agencies.
- **TRUSTEESHIP COUNCIL:** Managed trust territories, but it **suspended operations in 1994.**
- **International Court of Justice (ICJ**): Principal judicial organ of the UN, succeeding the Permanent Court of International Justice.
- **Secretariat:** Comprises the Secretary-General and UN staff responsible for day-to-day UN work. **ECOSOC oversees specialized agencies, including the International Labour Organization, Food and Agriculture Organization, UNESCO, WHO, World Bank Group, IMF, ICAO, IMO, ITU, UPU, WMO, WIPO, IFAD, UNIDO, WTO,** and more. It also includes regional commissions, functional commissions, and other committees.

PROTECTION OF CHILDREN FROM SEXUAL OFFENCES ACT (POCSO ACT)

SOURCE: THE HINDU, IE

WHY IN NEWS?

The 22nd Law Commission, **led by Justice (Retired) Ritu Raj Awasthi**, recently released a report addressing the age of **consent under the Protection of Children from Sexual Offences (POCSO) Act, 2012.**

POCSO ACT & ITS SALIENT FEATURES

➢ **Enactment and Purpose:**
- ✓ **POCSO Act enacted on November 14, 2012**.
- ✓ Result of India's ratification of **the UN Convention on the Rights of the Child in 1992.**
- ✓ Aims to **address child sexual exploitation and abuse.**

➢ **Definition of a Child:**
- ✓ The Act defines a child as **anyone below 18 years.**
- ✓ Emphasizes the paramount importance of the child's well-being at every stage.

➢ **Gender-Neutral and Child-Centric:**
- ✓ The Act is **gender-neutral** and prioritizes the child's best interests and welfare.
- ✓ Ensures the **healthy physical, emotional, intellectual, and social development** of the child.

> **ABOUT UN CONVENTION ON THE RIGHTS OF THE CHILD IN 1992:**
>
> The Convention on the Rights of the Child (CRC) was approved by the General Assembly of the United Nations on 20 November 1989. The Convention was formally opened for ratification on 26 January, 1990, the Government of India ratified the CRC on 11

➢ **Different Forms of Sexual Abuse:**
- ✓ Defines various forms of **sexual abuse, including penetrative and non-penetrative** assault, sexual harassment, and pornography.
- ✓ Considers sexual assault as **"aggravated" under specific circumstances**, such as when the child is mentally ill or when the abuser holds a position of trust or authority over the child.

➢ **Punishment for Child Trafficking:**
- ✓ Holds those who traffic children for sexual purposes accountable under abetment provisions.
- ✓ Prescribes stringent punishments based on the gravity of the offense, with the possibility of life imprisonment and fines.

➢ **Amendments in 2019:**
- ✓ Amendments introduced in 2019.
- ✓ Imposes stricter penalties, including the death penalty.
- ✓ Aims to deter and prevent sexual crimes against children.

➢ **POCSO Rules, 2020:**
- ✓ The Government of India notified the POCSO Rules, 2020.

THE 22nd LAW COMMISSION REPORT RECOMMENDATIONS

❖ The **current age of consent shall remain 18 years** and but recommended adding **"guided judicial discretion"** for cases involving children aged 16 to 18 years.

❖ The Commission **warned** that **lowering the age of consent** would have **adverse consequences, affecting efforts to combat child marriage and child trafficking**.

❖ It emphasized the importance of **courts exercising caution even in cases of "adolescent love"** where criminal intent might be absent.

❖ The Commission proposing **the gradual implementation of electronic First Information Reports (e-FIRs)** for offenses punishable by prison sentences of up to three years.

ISSUES AND CHALLENGES IN POCSO ACT

➢ **Low Representation of Women in the Police Force:**
  ✓ The POCSO Act mandates a woman sub-inspector to record the statement of the affected child, but with **only 10% women in the police force**, this requirement is often unmet.

➢ **No Examination by Judicial Magistrates:**
  ✓ While the act requires **recording the prosecutrix's statement by a judicial magistrate**, there is no provision for cross-examination during trial, undermining the value of these statements.

➢ **Issue of Age Determination:**
  ✓ The Juvenile Justice Act of 2015 guides age determination for juvenile delinquents, but the **POCSO Act lacks such provisions for juvenile victims**.
  ✓ In the **Jarnail Singh vs State of Haryana (2013) case**, the Supreme Court suggested using this statutory provision to determine the age of child victims.
  ✓ However, without changes in the law or specific directions, investigating officers still rely on school admission-withdrawal registers for age verification.

➢ **Delays in Filing Charges:**
  ✓ Investigations often exceed the mandated one-month period due to resource limitations, forensic delays, or case complexity.

➢ **Lack of Conditions for Proving Recent Intercourse:**
  ✓ Unlike the Indian Evidence Act, the POCSO Act doesn't set conditions for the prosecution.

GOVERNMENT INITIATIVES TO CURB CHILD ABUSE

INITIATIVE	OBJECTIVE
Child Abuse Prevention and Investigation Unit	Prevent and investigate cases of child abuse.
Beti Bachao Beti Padhao	Promote the welfare and education of girls and combat gender bias.
The Juvenile Justice (Care and Protection of Children) Act, 2015	Ensure the care, protection, and rehabilitation of juvenile offenders.

Child Marriage Prohibition Act (2006)	Prohibit and prevent child marriages in India.
Child Labour Prohibition and Regulation Act, 2016	Prohibit and regulate child labour to protect children's rights.
POCSO Courts under Special Fast Track Courts	Expedite the trial of case related to child sexual abuse.

WAY FORWARD

➢ The Law Commission's recommendations highlight the importance of maintaining the current age of consent under the **POCSO Act while introducing guided judicial discretion in relevant cases.**

➢ These measures aim to strike a balance between legal enforcement and protecting the rights of minors.

➢ Additionally, the **Commission's recommendation for e-FIRs seeks** to modernize the criminal justice system for more efficient reporting of offenses.

➢

LAW COMMISSION OF INDIA:

❖ The Law Commission of India is a **non-statutory body** formed by the **Union government.**

❖ This commission is **ad hoc in nature**, established for specific purposes.

❖ It is **not defined in the Indian Constitution** but is constituted to give effect to Article **39A**.

❖ **Purpose**: Its role is to ensure the fairness and justness of laws and promote their effective implementation.

❖ **Advisory Function**: Primarily, it serves as an advisory body to the Ministry of Law and Justice.

▪ **HISTORY OF LAW COMMISSION**:

❖ **Pre-Independence Commission**: The British Government in India formed the first law commission in 1834, following the Charter Act of 1833. Lord Macaulay chaired this commission.

❖ **First Independent India Commission**: In 1955, post-independence, the first Law Commission of independent India was established, led by **M.C. Setalvad**.

❖ **Total Commissions**: Since independence, there have been **22 Law Commissions in India**.

❖ **Current Commission**: The **22nd and current Law Commission** is headed by Justice Ritu Raj Awasthi.

▪ **IMPORTANT RECOMMENDATIONS**:

❖ **Abolition of Death Penalty**: In its 262nd Report, the Law Commission proposed the elimination of the death penalty for all crimes, with exceptions for terrorist offences.

❖ **Electoral Reforms**: In 1999, the Commission recommended holding simultaneous elections for the Lok Sabha and state assemblies to enhance governance and stability.

❖ **Uniform Civil Code (UCC)**: The **21st Law Commission, in 2018**, stated that a **Uniform Civil Code** is currently deemed **unnecessary and undesirable**.

Science & Technology

LARGEST INDIGENOUSLY DEVELOPED N-PLANT UNIT IN GUJARAT

SOURCE: The Indian Express

WHY IN THE NEWS?

➤ The third unit of **Gujarat's Kakrapar Atomic Power Project's** (KAPP3) **700-megawatt electric (MWe) nuclear power** reactor has started operating at full capacity.

➤ This occurred a little over three years after the unit reached its **"first criticality"** in July 2020, a technical phrase denoting the start of a **controlled but sustained nuclear fission process.**

THE IMPORTANCE OF NUCLEAR POWER CAPACITY FOR INDIA

➤ **ENERGY SECURITY:** It provides a reliable **and steady energy** source independent of **imported fossil fuel**s, nuclear power lessens the country's **vulnerability to supply disruptions** in the global energy market.

- India would require about **$1.6 trillion in investments** in power generation, transmission, and distribution **by 2035**, according to **the International Energy Agency** of the **OECD.**
- Nuclear has a share of **around 3% in the energy mix.**

➤ **LOW CARBON EMISSIONS:** It can assist the nation in making the **transition to a more sustainable energy future** as it works to **cut its greenhouse gas emissions**.

- In comparison to nuclear power, which emits **14 g of greenhouse gases per kWh** on average, **solar energy emits an average of 50 g/kWh**. (According to **NPCIL**)

➤ **ECONOMIC GROWTH AND DEVELOPMENT:** The **expansion of manufacturing and technology** sectors that depend on a **reliable power supply** can be made possible by nuclear power.

➤ **TECHNOLOGICAL AND RESEARCH DEVELOPMENT**: **Investing in nuclear energy capacity** encourages nuclear technology research and development, which has potential uses beyond power generation **like nuclear medicine**.

- Nuclear medicine is more efficient than chemotherapy in the **treatment of cancer.**

CHALLENGES ASSOCIATED WITH NUCLEAR POWER IN INDIA:

➢ **High initial costs:** For **construction, security precautions, and technological advancement**, nuclear power facilities need a **large upfront financial investment**.

➢ **Limited domestic Uranium resources**: A **steady and dependable supply of nuclear fuel,** including **uranium and thorium**, must be provided. This necessitates contracts, alliances, and investments in local production capacity with other nations.

➢ **Safety concerns:** Questions concerning the safety of nuclear power have been raised in the wake of incidents like **the Fukushima Daiichi nuclear disaster in Japan in 2011**.
  - India has experienced protests and opposition to nuclear plants, which has caused delays and raised prices.

➢ **Nuclear waste management:** Radioactive waste from nuclear power generation must be **safely controlled and kept in storage for thousands of years**. India faces difficulties in creating and putting into practice **efficient long-term nuclear waste management** plans.

➢ **Technological challenges:** Advanced nuclear technology development is a challenging and resource-intensive task. Examples include fast breeder reactors and thorium-based reactors.

➢ **Geopolitical factors: China's veto prevented India from becoming a member of the Nuclear Suppliers Group.**

WAY AHEAD

Here are some of the strategies that can be adopted to enhance the nuclear power capacity in India:

➢ **Invest in advanced reactor technology: Small modular reactors (SMRs)**, **fast-breeder reactors,** and thorium reactors are a few examples of cutting-edge nuclear technologies that India can research and fund. These advancements in **safety, fuel efficiency, and nuclear waste reduction** can make nuclear power more affordable and environmentally friendly.

➢ **Enhance safety measures:** To provide the greatest safety in **nuclear facilities, continually improve safety procedures**, and invest in staff training and development. Public confidence can be increased through regular safety reviews and international cooperation on safety standards.

➢ **Public-Private partnerships:** Encourage the formation of public-private partnerships to create nuclear projects, utilizing the resources and skills of the business sector while maintaining public control.

➢ **Grid integration**: Ascertain that the architecture of **the electrical grid can effectively incorporate nuclear power into the energy mix.** This involves grid improvements to support the consistent and uninterrupted production of nuclear facilities.

➢ **Nuclear agreements:** Promote nuclear energy cooperation agreements **with nations that possess advanced nuclear capabilities**, such as the **United States, Russia, and France**, in order to **streamline technology transfer and cooperation**.

FLEX-FUEL HYBRID VEHICLE

WHY IN NEWS?

➢ Toyota showcased a prototype of the Innova Hycross with a flex-fuel hybrid powertrain. This is the company's first vehicle with this option in India, and according to the Japanese automaker, it is also the world's first flex-fuel vehicle that complies with BS6 Stage II.

ABOUT FLEX FUEL TECHNOLOGY:

➢ Like a standard petrol car, a flex-fuel vehicle typically contains an internal combustion engine (ICE).

➢ But unlike a typical petrol vehicle, it may run on more than one type of fuel or a combination of these fuels.

The ethanol blended fuel used in the car reduces biogenic emissions, which is absorbed back by plants

➢ The most often used types combine petrol with ethanol or methanol.

➢ The flex-fuel vehicles can run on ethanol blends much higher than the current standard 20% mix (E20).

➢ FFVs are flexible to many fuel sources since they can run on a variety of alternative fuels, including E85 (a mixture of 85% ethanol and 15% petrol).
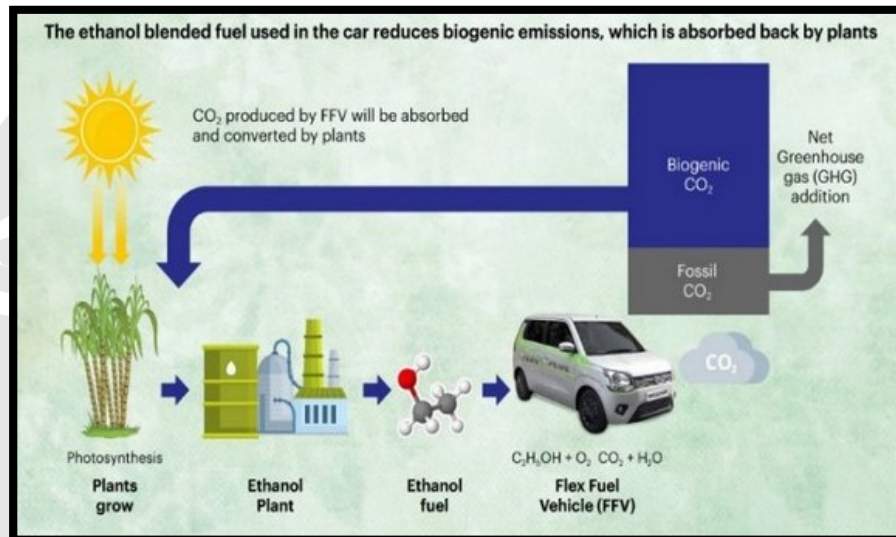
BENEFITS OF FLEX-FUEL VEHICLE TECHNOLOGY:

➢ **Reduction in emissions:** When ethanol is used in blending, dangerous emissions like carbon monoxide, sulphur, and carbon and nitrogen oxides are significantly reduced.

➢ **Enhanced vehicle performance**: Many flex-fuel vehicles operate better while driving on higher ethanol mixes.

➢ **Reductions in import bills**: Additionally, blending will lessen the need to import oil for automobile fuel.

- In India, the percentage of ethanol in petrol increased from 1.53% in 2013–14 to 11.5% in March 2023, reducing the cost of imported oil by an estimated Rs 41,500 crore during the preceding eight years.

- According to official estimates, ethanol blending enabled a reduction of 26 million barrels of petrol in 2020–21, saving Rs 10,000 crore.

CHALLENGES ASSOCIATED WITH FLEX FUEL VEHICLE TECHNOLOGY:

➢ **Compatibility with existing vehicles:** It can be difficult and expensive to manufacture FFVs with the requisite technologies or to retrofit current vehicles to become FFVs.

➢ **Limited availability of ethanol:** The fact that source crops like sugarcane are typically particularly water-intensive is an issue with ethanol blending.

- In 2019–20, more than 90% of the ethanol generated in the nation came from sugarcane, according to an NITI Aayog report. Greater ethanol mixes produce improved acceleration performance.

➢ **Consumer awareness:** The advantages of ethanol-based fuels and FFVs are not well known to many Indian consumers. Public awareness of these cars and fuels must be raised in order for them to be accepted.

➢ **Government policies:** The National Biofuel Policy 2018 envisages a 2025 target of 20% blending, which limits its production.

- Countries such as Brazil can be flexible on the degree of the mix depending on crude prices, the precondition being that the vehicular fleet has been equipped to adjust to this varying fuel mix.

➢ **Low market demand**: Customers who are unsure of or reluctant to use alternative fuels can create low demand for FFVs.

WAY FORWARD:

➢ **Ethanol supply chain management**: To address the demands of FFVs, invest in increasing ethanol production capacity.

- Create a strong ethanol supply chain that includes distribution, transportation, and storage infrastructure.

➢ **Research and development**: Increase spending on R&D to enhance FFV technology, especially engine performance and ethanol blend compatibility.

➢ **Government support:** Provide financial incentives and subsidies to FFV buyers as well as to manufacturers and fuel producers who participate in the manufacturing and distribution of ethanol through government schemes.

BATTERY ENERGY STORAGE SYSTEM

SOURCE: THE HINDU

WHY IN NEWS?

➢ The establishment of a **4,000 MWh battery energy storage system (BESS)** in India has received approval from the Indian government **for viability gap funding (VGF),** which will cover up to 40% of the total capital cost.

➢ This program is in line with **India's ambitions for renewable energy** since the nation has experienced a tremendous increase in **solar and wind energy capacity** and now sources 25% of its energy needs from renewable sources, including big hydroelectric projects.

ABOUT BATTERY ENERGY STORAGE SYSTEMS:

➢ A technique known as **a Battery Energy Storage System (BESS)** is in use **to store electric charge** using specially designed batteries.

➢ The basic concept is that such **stored energy may be used in the future.**

➢ The concept of a battery energy storage system has become **a commercial reality** because of the enormous amount of research that has produced battery advancements.

➢ **Energy Storage Systems (ESSs)** are a group that includes Battery Energy Storage Systems (BESSs).
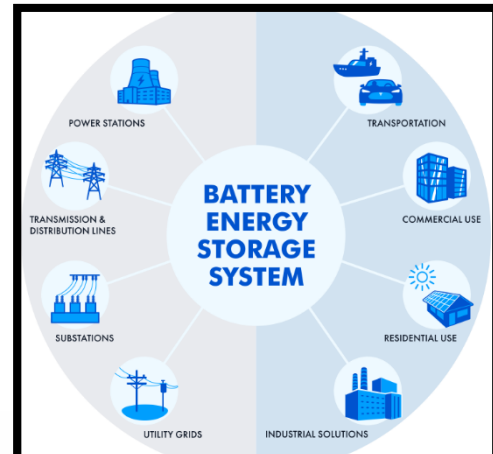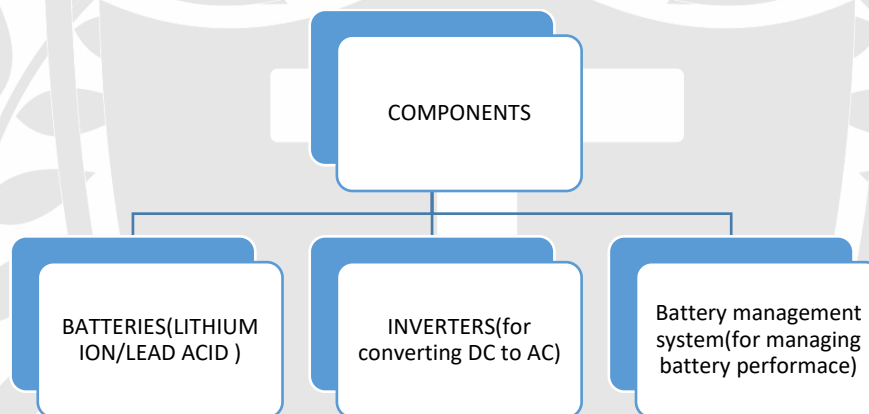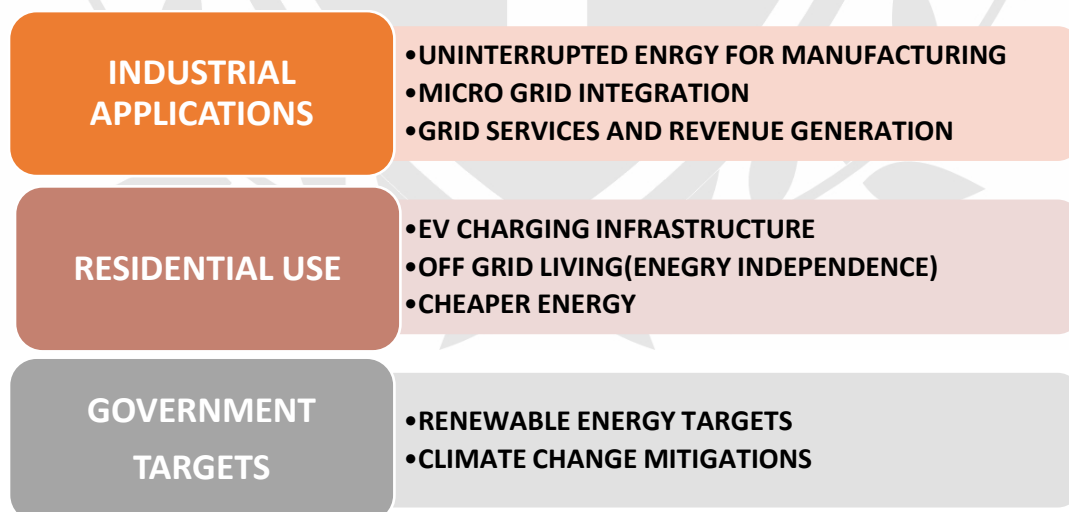

Figure 8APPLICATIONS OF BATTERY ENERGY STORAGE SYSTEMS

COMPONENTS OF BATTERY ENERGY STORAGE SYSTEM:

COMPONENTS

- BATTERIES(LITHIUM ION/LEAD ACID)
- INVERTERS(for converting DC to AC)
- Battery management system(for managing battery performace)

BENEFITS OF BATTERY ENERGY STORAGE SYSTEM:

INDUSTRIAL APPLICATIONS	•UNINTERRUPTED ENRGY FOR MANUFACTURING •MICRO GRID INTEGRATION •GRID SERVICES AND REVENUE GENERATION
RESIDENTIAL USE	•EV CHARGING INFRASTRUCTURE •OFF GRID LIVING(ENEGRY INDEPENDENCE) •CHEAPER ENERGY
GOVERNMENT TARGETS	•RENEWABLE ENERGY TARGETS •CLIMATE CHANGE MITIGATIONS

CHALLENGES ASSOCIATED WITH BATTERY ENERGY STORAGE SYSTEMS:

➢ **RAW MATERIAL PROCUREMENT:** It can be **expensive to use battery technology**, especially cutting-edge lithium-ion batteries.
- For residential, commercial, and industrial users, the initial expense of buying and installing a BESS might be a major obstacle.

➢ **GRID INTEGRATION: Voltage fluctuations and frequent blackouts** are among the reliability problems the Indian power infrastructure faces.

➢ **SAFETY CONCERNS:** The most popular battery type used in BESS**, lithium-ion,** can provide safety issues if not created, manufactured, and maintained correctly.
- Batteries that have been damaged or put through extreme conditions run the risk of experiencing problems including **thermal runaways, fires, and explosions.**

➢ **LIMITED ENERGY DENSITY:** Compared to other energy storage methods, such as the use of fossil fuels, batteries have **a lower energy density**.
- This indicates that they might **not be able to provide long-term energy storage** or backup power without regular recharging or replacement.

➢ **TECHNICAL CHALLENGES:** BESS needs **highly developed battery management systems** to watch over and manage operations.
- It may be technically difficult to integrate BESS into current energy systems, such as grids or renewable energy installations, due **to issues with interoperability, grid synchronization, and control algorithms.**

GOVERNMENT INITIATIVES FOR BATTERY ENERGY STORAGE SYSTEM

INITIATIVE	OBJECTIVE
1. NATIONAL ENERGY STORAGE MISSION	**Focuses on the technology development of energy storage systems.**
2. FASTER ADOPTION AND MANUFACTURING OF ELECTRIC VEHICLES(FAME)	**Development of charging infrastructure.**
3. GREEN ENERGY CORRIDOR	**Development of the grid infrastructure**
4. PRODUCTION-LINKED INCENTIVE FOR MANUFACTURING ADVANCED CHEMISTRY CELL BATTERY	**For battery manufacturing in India.**
5. VIABILITY GAP FUNDING	**To ensure adequate funding for the development of battery energy storage systems.**

WAY FORWARD:

➢ **ADVANCED BATTERY TECHNOLOGIES**: Invest in R&D to create cutting-edge battery technologies that are affordable, efficient, and appropriate for Indian conditions.

➢ **CERTIFICATION:** To guarantee safety, quality, and interoperability for BESS, develop and apply industry standards and certification procedures.

➢ **ANCILLARY SERVICES:** Recognise the importance of BESS in delivering ancillary services including grid stability, frequency regulation, and voltage support.

➢ **POLICY SUPPORT:** Create and implement regulations and policies that will aid in the implementation of BESS. This covers specific requirements for grid codes, compensation mechanisms, and interconnection.

➢ **FINANCING:** Establish mechanisms, such as low-interest loans, green bonds, and public-private partnerships, to make it easier to finance BESS projects.

SYNTHETIC HUMAN EMBRYO

SOURCE: THE INDIAN EXPRESS

WHY IN NEWS?

➢ In a groundbreaking achievement, **Israeli scientists** have achieved a major breakthrough by fashioning a **synthetic human embryo model** without relying on conventional elements like sperm, eggs, or a uterus. Instead, they employed **reprogrammed stem cells** in an **unconventional approach** to create this remarkable model.

WHAT IS A SYNTHETIC EMBRYO?

➢ The term "**synthetic embryo**" refers to an embryo that has **not undergone fertilization**.

➢ These embryos, also referred to as artificial embryos, can be created **without the aid of an egg or sperm cell.**

➢ Instead, these embryos **replicate the early stages of human development** by using self-assembling stem cell architectures.

➢ As of now, the internal structure and cell genetic profiles of synthetic embryos are **95% identical** to those of **real mouse embryos**.
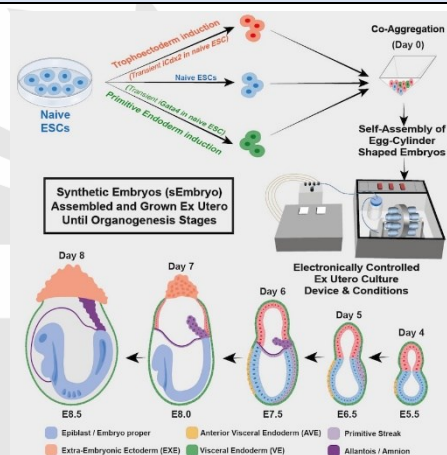

Figure 9 synthetic embryo creation

HOW ARE THE SYNTHETIC EMBRYOS CREATED?

STEM CELL MIX

A variety of stem cells—early cells with the capacity to develop into other types of cells—were utilised.

FOETUS FORMATION

Stem cells and chemicals programmed to become different parts of the body.

Epiblasts became foetus

Trophoblast became placenta

Hypoblast became yolk sac

EARLY EMBRYO

This structure had the ability to spontaneously come together, resembling the molecular characteristics of an early embryo.

BENEFITS OF SYNTHETIC EMBRYO CREATION

- ➢ **Treatment of various diseases**:
  - Minor cellular irregularities can influence the formation of the placenta and limit the growth of the embryo, potentially impacting the baby's birth.
  - It can increase the risk of chronic diseases like heart conditions many years down the line.
  - Constructs created from stem cells could assist researchers in identifying the genetic and epigenetic alterations implicated in these processes.
- ➢ **Organ creation:**
  - Organoids, including miniature brains, livers, kidneys, and others produced from stem cells, are greatly simplified versions.
  - It can help in the research of tissue and organ creation.
- ➢ **Treatments for infertility:**
  - Estimates suggest that approximately 40% of pregnancies end before reaching the 20-week mark, with about 70% of these failures occurring during implantation.
  - The development of embryo models has the potential to enhance researchers' comprehension of both implantation and gastrulation processes.
- ➢ **Improving the success rate of IVF treatments:**
  - Approximately 20% of in vitro fertilization (IVF) procedures lead to the birth of a child.
  - Through the utilization of stem-cell models, researchers have the opportunity to enhance the process of implantation and reduce cellular irregularities, such as anomalies in chromosome numbers.
  - This not only ensures the well-being of children conceived through IVF but also has the potential to decrease the need for a higher number of procedures.

CHALLENGES ASSOCIATED WITH SYNTHETIC EMBRYO CREATION:

- ➢ **Ethical concerns:**
  - The creation of synthetic embryos can prompt substantial ethical concerns.
  - It has the potential to create ambiguity regarding the definition of human life, sparking discussions about the ethical standing of these entities and the possibility of their inappropriate use.
- ➢ **Biosafety risks:**
  - The manipulation and generation of synthetic embryos may have the potential for misuse in harmful endeavours, including the development of bioweapons or unethical reproductive methods**.**
- ➢ **Regulatory challenges:**
  - Establishing regulatory structures for synthetic embryos can be an intricate process.
  - Ensuring that research is carried out with responsibility and ethics presents a challenge, and there may be differences in regulations and standards among different countries.

REGULATIONS IN INDIA FOR SYNTHETIC EMBRYO CREATION:

➢ In March 2019, the **Union Health Ministry** introduced the **'New Drugs and Clinical Trial Rules, 2019,'** which classify products derived from stem cells as "new drugs."
➢ As a result, any medical practitioner employing stem cell therapy is required to obtain government approval.
➢ **Assisted Reproductive Technology Regulation 2021** aims to regulate IVF fertilization.

WAY FORWARD:

➢ **Stringent regulatory framework:** These regulations ought to encompass ethical guidelines, safety protocols, and monitoring mechanisms to guarantee responsible research and the appropriate use of synthetic embryos.
➢ **Ethical framework:** Involve discussions and collaboration among ethicists, scientists, and policymakers to tackle the ethical considerations surrounding synthetic embryos.
➢ **Clinical trials and safety measures:** Create guidelines for the execution of clinical trials involving synthetic embryos, and make certain that thorough safety evaluations are conducted prior to permitting any clinical uses.
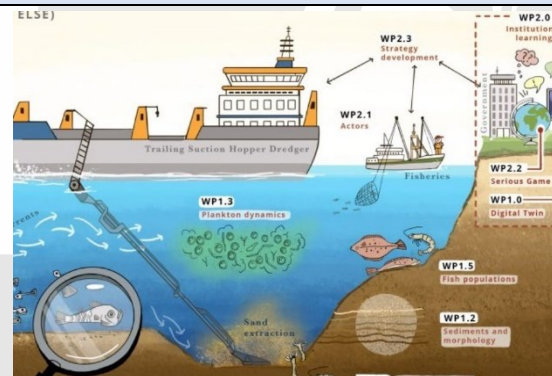
MARINE SAND EXTRACTION

SOURCE: DOWN TO EARTH

WHY IN NEWS?

➢ A recently introduced data platform known as "**Marine Sand Watch**" has brought attention to this pressing problem, providing insights into the extent of sand removal and its extensive impacts.
➢ The continuous removal of sand from the Earth's oceans is presenting **a significant danger** to both **marine environments and coastal communities**.
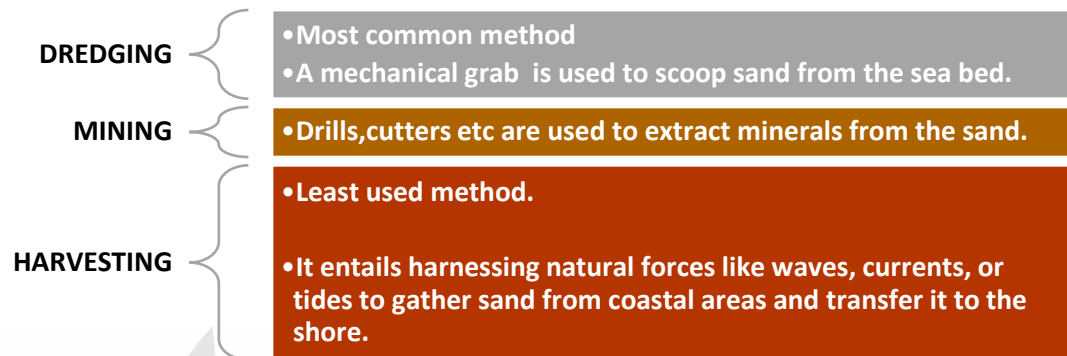
MARINE SAND EXTRACTION:

➢ Marine sand extraction, often referred to as sand mining or dredging, is the practice of extracting sand from the bottom of oceans, rivers, or lakes.
➢ This operation is usually conducted to secure a supply of sand for diverse construction and industrial uses, including concrete production, and land reclamation.
➢ According to the platform's calculations, an annual dredging of **approximately four to eight billion metric tons of sand** is taking place from the ocean floor.
➢ The projection indicates that marine sand extraction is anticipated to increase to a range of **10 to 16 billion metric tons per year**, aligning with the natural replenishment rate necessary for rivers to sustain the structure and function of coastal and marine ecosystems.

Figure 10: Dredging

HOW IS THE MARINE SAND EXTRACTED?

Various processes are involved in the extraction of marine sand. They are

DREDGING
- Most common method
- A mechanical grab is used to scoop sand from the sea bed.

MINING
- Drills, cutters etc are used to extract minerals from the sand.

HARVESTING
- Least used method.
- It entails harnessing natural forces like waves, currents, or tides to gather sand from coastal areas and transfer it to the shore.

IMPACT OF MARINE SAND EXTRACTION:

➢ **EROSION OF THE BEACH**: Overly aggressive sand removal can lead to beach erosion by depleting the sediment that naturally restores beaches.
- This can have adverse consequences, including the diminishing of recreational and protective beach areas, impacting tourism.

➢ **DAMAGE TO COASTAL INFRASTRUCTURE:**

➢ Changes in the movement of sediment and coastal erosion can heighten the susceptibility of coastal infrastructure, such as roads, structures, and harbours, to the impacts of storm surges and rising sea levels.

➢ **ECOSYSTEM DISRUPTION:** The disruption of seabed ecosystems can result in a reduction in biodiversity since it can harm or obliterate the places where various marine species reproduce and find food.

➢ **IMPACT ON WATER QUALITY:** The process of sand mining can agitate sediments in the water, causing greater cloudiness and diminished water transparency.

➢ **T**his can adversely affect marine life, particularly organisms that filter-feed and depend on clear water for survival like corals, seaweeds, and phytoplankton.

➢ **LOCAL LIVELIHOODS:**

Many coastal communities depend on tourism and fishing as their main sources of income, and both of these sectors can suffer adverse consequences due to the impact of sand mining on beaches, water quality, and marine ecosystems.

www.tathastuics.com
7428328484
enquiry@tathastuics.com

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REGULATIONS FOR MARINE SAND MINING IN INDIA:

Regulation	Objective
The Coastal Regulation Zone (CRZ) Act 2019	To regulate and restrict activities in coastal areas, including sand mining, to protect coastal ecosystems, communities, and infrastructure.
The Environment Impact Assessment (EIA) Notification	To assess the environmental impact of sand mining projects and ensure that they comply with environmental standards and safeguards.
The Indian Mines and Minerals (Development and Regulation) Act 1957	To govern mineral extraction, including beach sand minerals, and promote sustainable and responsible mining practices.
The National Green Tribunal (NGT) Orders	To adjudicate and enforce environmental laws and regulations related to sand mining, ensuring compliance and addressing environmental violations.
International Sea Bed Authority	Regulate deep sea mining in international waters.
UNEP recommendations	Advocates for the international standards in the extraction of sand.

WAY FORWARD:
- **Sustainable resource extraction:** Practice it in a way that the impact on the environment is minimized.
- Give prime importance **to SDG14: Life below water**
- **Community engagement:** Engage local communities in the decision-making procedures and agreements that involve sharing benefits associated with sand mining.
- **Environmental impact assessments:** Require comprehensive environmental impact assessments (EIAs) for every sand mining project to assess potential ecological and societal consequences thoroughly.

MARINE SAND WATCH:
- ❖ This data platform has been created by a **Center for Analytics affiliated** with **the United Nations Environment Programme (UNEP)**.
- ❖ Its primary purpose is **to oversee and supervise the extraction (removal)** operations of various materials such as sand, clay, silt, gravel, and rock within the global marine environment

NIPAH VIRUS: A ZOONOTIC DISEASE

SOURCE: CDC

ABOUT NIPAH VIRUS:

Nipah virus, a zoonotic disease transmitted to humans through infected animals or contaminated food, was first identified during an outbreak in Malaysia and Singapore. The primary victims were pigs and individuals closely involved with them. The virus derived its name from the Malaysian village of Sungai Nipah, where the outbreak occurred.

Zoonotic diseases are infections that are spread between people and animals. These infections are caused by germs, such as viruses, bacteria, parasites, and fungi. Some can be severe and life threatening, such as rabies, and others may be milder and get better on their own. Zoonotic diseases are very common.

TRANSMISSION:

➢ The disease is transmitted via **fruit bats, also known as 'flying foxes,'** belonging to the Pteropus genus, which serve as the **natural reservoir hosts for the Nipah and Hendra viruses.**

➢ The virus can be **found in bat urine and, potentially, in bat feces, saliva, and birthing fluids.**

SYMPTOMS:

➢ In humans, infection manifests as an encephalitic syndrome characterized by symptoms such as fever, headache, drowsiness, disorientation, mental confusion, coma, and, in severe cases, potential fatality.

PREVENTION:

➢ Currently, there are no vaccines available for both humans and animals to protect against the Nipah virus.
➢ The primary approach for humans infected with the Nipah virus involves providing intensive supportive care.

SLOW SPREAD:

➢ In contrast to the rapid transmission of SARS-CoV-2, the Nipah virus has a slower rate of spread. Nevertheless, its elevated mortality rate remains a significant concern.

WHAT IS NIPAH VIRUS?

HOW SEVERE IS IT?

A disease-causing virus affecting both **animals & humans**

First broke out in Malaysia and Singapore in 1998 and 1999

Has a mortality rate of **70%**

PREVIOUS OUTBREAKS IN INDIA

17 Deaths
Kozhikode, Malappuram (Kerala, 2018)

45 Deaths
Siliguri, WB (2001)

05 Deaths
Nadia, WB (2007)

1 case confirmed, 80+ people under observation
Ernakulum (Kerala, 2019)

SYMPTOMS

Fever   Drowsiness
Headache   Confusion
Coma   Disorientation

SPREADS THROUGH
Fruit bats, human-to-human transmission also likely
(Source: WHO, news reports)

TREATMENT
Intensive supportive care for humans
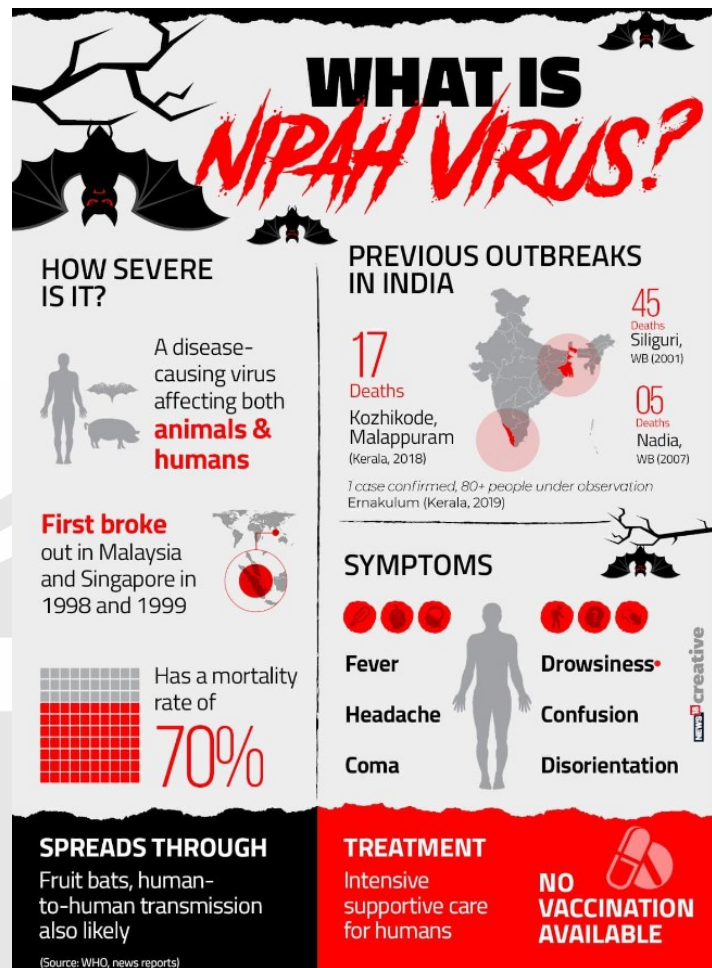
NO VACCINATION AVAILABLE

HIGH MORTALITY:

➢ During Nipah outbreaks, the virus has exhibited a mortality rate as substantial as 68-75%.
➢ For instance, in the 2001 Siliguri outbreak, 45 out of the 66 infected individuals succumbed to the virus.
➢ Similarly, during the 2018 Kerala outbreak, 17 out of 18 confirmed patients lost their lives.

LOCALIZED OUTBREAKS:

➢ Notably, Nipah outbreaks have consistently been confined to specific areas and were brought under control relatively swiftly.
➢ The virus's limited infectiousness and its low potential for human-to-human transmission contribute to this containment.

REPRODUCTIVE NUMBER (R0):

➢ Research indicates an R0 value of approximately 0.48 for Nipah outbreaks, indicating a slow transmission rate within the population.
➢ An R0 value below one suggests that an infected person does not transmit the virus to more than one other individual, leading to a relatively rapid resolution of the outbreak.

CHALLENGES IN DEALING WITH THE NIPAH VIRUS:

Diagnosis:

➢ Non-specific Symptoms: Initial symptoms overlap with common illnesses, leading to delayed diagnosis.
➢ Limited Diagnostic Resources: Limited access to specialized tests complicates rapid case confirmation.

Treatment:

➢ No Specific Antiviral Treatment: No approved antiviral medication; care focuses on symptom management.
➢ Limited Treatment Centres: Inadequate facilities and expertise can complicate severe case management.

Prevention:

➢ Zoonotic Transmission: Complex challenge of preventing transmission from bats and animals to humans.
➢ Human-to-Human Transmission: Outbreaks can involve human-to-human transmission, especially in resource-limited healthcare settings, requiring effective infection control measures.

Vaccine Development:

➢ Complex Virus: Multiple virus strains make vaccine development challenging.
➢ Lack of Commercial Incentives: Limited investment from pharmaceutical companies due to Nipah's impact primarily in low-resource regions.

WAY FORWARD:

Prevention:

➢ Enhanced Surveillance: Improve surveillance for early Nipah virus detection in animals, especially fruit bats, and humans.
➢ Early Case Identification: Detect cases early, isolate patients, and trace contacts to prevent further spread.
➢ Control Measures: Implement quarantine and isolation to contain outbreaks.

Vaccine Development:

➢ Research and Development: Continue rigorous testing in preclinical and clinical trials for a safe Nipah virus vaccine.
➢ Affordability and Accessibility: Ensure vaccine affordability and accessibility for at-risk populations, particularly in low-resource regions.

Public Awareness and Education:

➢ Community Engagement: Conduct awareness campaigns and engage communities in at-risk areas to educate them about the virus and preventive measures.
➢ Promoting Safe Practices: Encourage safe practices when handling animals, consuming fruits, and during healthcare interactions to reduce Nipah virus transmission.

One Health Approach:

➢ Interdisciplinary Collaboration: Promote collaboration across human, animal, and environmental health sectors to prevent zoonotic diseases like Nipah.

Research:

➢ Understanding the Virus: Research on Nipah virus biology, genetics, and transmission is crucial for effective prevention and control strategies.
➢ Treatment Development: Explore potential treatments, including antiviral drugs and monoclonal antibodies, with a focus on safety and efficacy.

ZOONOTIC DISEASE:				
Disease	**Pathogen**	**Reservoir Hosts**	**Transmission to Humans**	**Examples of Outbreaks**
COVID-19	SARS-CoV-2 virus	Bats (likely)	Direct contact with infected humans, respiratory droplets	Global pandemic (ongoing)
Ebola Virus Disease	Ebola virus	Bats, primates	Direct contact with infected animals and their fluids, human-to-human transmission	Outbreaks in West Africa (2014-2016)
HIV/AIDS	Human Immunodeficiency Virus (HIV)	Primates (zoonotic origin)	Sexual contact, blood-to-blood contact, mother-to-child transmission	Global pandemic (ongoing)
Influenza (Flu)	Influenza viruses (various)	Birds, pigs, and others	Respiratory droplets, direct contact with infected animals	Seasonal flu outbreaks
Rabies	Rabies virus	Various mammals (bats, dogs, etc.)	Animal bites or scratches, saliva contact	Global, recurring (ongoing)
Zika Virus	Zika virus	Primarily Aedes mosquitoes	Mosquito bites, sexual transmission	Outbreaks in South and Central America (2015-2016)
Nipah Virus	Nipah virus	Fruit bats (bats)	Contact with bat excretions, human-to-human transmission	Outbreaks in Southeast Asia (multiple)
Lyme Disease	Borrelia bacteria	Ticks (especially deer ticks)	Tick bites, transmission via infected ticks	Common in North America, Europe
Hantavirus Pulmonary Syndrome	Hantaviruses	Rodents (various)	Inhalation of aerosolized virus in rodent excreta	Various outbreaks globally

NATIONAL QUANTUM MISSION: A BOOST TO INDIA'S QUANTUM ENDEAVOURS

SOURCE: SCIENCE REPORTER

WHY IN NEWS?

National Quantum Mission (NQM) received the union cabinet approval at a total cost of **Rs. 6000 crores**, a significant step towards positioning India as a leading player in the field of quantum technologies.

ABOUT NATIONAL QUANTUM MISSION (NQM):

➢ **Aim:** Strengthening India's quantum research and development, building powerful quantum-based computers for complex problem-solving and security.

➢ **Implementing Agency: Department of Science and Technology (DST)** leads the mission with support from others.

➢ **Mission Period:** Planned from **2023-24 to 2030-31.**

➢ **Targets:** Developing intermediate-scale quantum computers (50-1000 physical qubits), satellite-based secure quantum communications within India and internationally, and inter-city quantum key distribution.

➢ **Application Areas:** High-sensitivity magnetometers, atomic clocks for precision timing and communications, design of quantum materials, single-photon sources/detectors, and entangled photon sources for quantum applications.

FOUR THEMATIC HUBS (T-HUBS):

T-Hubs will be **established at leading academic** and **national research and development institutes**.

KEY DEFINITIONS:

❖ **QUANTUM COMPUTING: -** Quantum computing is a computing paradigm that uses the principles of quantum mechanics to process and store data, offering the potential to solve complex problems significantly faster than classical computers.

❖ **SUPERPOSITION** refers to the state of qubits, where they can exist in multiple states simultaneously, expanding computational possibilities by representing complex problems differently within these states.

QUANTUM COMPUTING

QUANTUM SENSING AND METROLOGY

T-HUB DOMAINS

QUANTUM COMMUNICATION

QUANTUM MATERIALS AND DEVICES
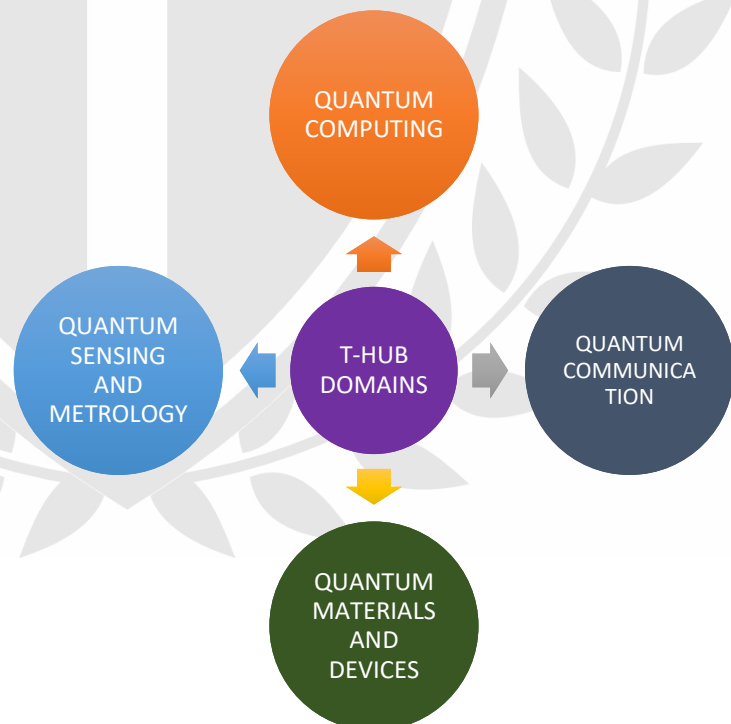
❖ **ENTANGLEMENT** is a quantum phenomenon that links the behaviour of two distinct entities, so altering one qubit directly influences the other; quantum algorithms utilize these connections to solve intricate problems.

CHALLENGES OF QUANTUM TECHNOLOGY:

1. **Costly:** Quantum tech demands specialized resources, rendering it more expensive than conventional tech.
2. **Limited Applications:** Currently, quantum tech suits only certain domains like cryptography and quantum computing.
3. **Skilled Workforce Needed:** Organizations must train and attract quantum computing experts.
4. **Environmental Sensitivity:** Quantum tech is sensitive to environmental factors like temperature and magnetic fields.
5. **Control Complexity:** Manipulating quantum tech is intricate, potentially leading to unintended consequences in quantum-powered AI.

ADVANTAGES OF QUANTUM TECHNOLOGY:

1. **Enhanced Computing Power:** Quantum computers are significantly faster and tackle complex problems currently out of reach.
2. **Heightened Security:** Quantum encryption methods offer superior security compared to traditional ones.
3. **Swift, Secure Communication:** Quantum networks promise ultra-fast and unhackable data transmission.
4. **Improved AI:** Quantum machine learning enhances AI training efficiency and accuracy.
5. **Precise Sensing:** Quantum sensors detect subtle environmental changes for various applications.
6. **Large-Scale Simulations:** Quantum computing aids massive-scale problem-solving.

Figure 11: Quantum Computer vs. Classical Computer

7. **Economic Contribution:** Quantum tech adoption can boost India's economy by $280-310 billion.
8. **Government Scheme Enhancement:** It aligns with key national priorities, including Digital India, Make in India, Skill India, and Sustainable Development Goals.
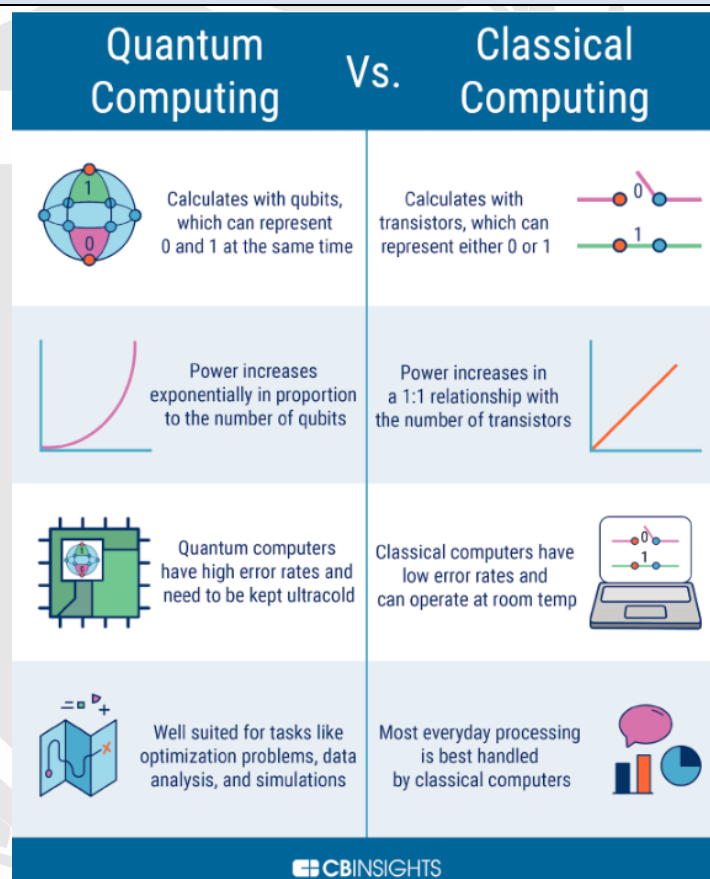
KEY INDIAN INITIATIVES:

Initiative	Description
National Mission on Quantum Technologies	The Indian government introduced a National Mission dedicated to the study of quantum technologies, allocating ₹8,000 crore for its implementation.
Quantum Research Facilities	The Indian Army inaugurated a quantum research facility in Madhya Pradesh, while another facility was jointly launched by the Department of Science and Technology in Pune.
QuEST Initiative	The Department of Science and Technology initiated the Quantum-Enabled Science and Technology (QuEST) project, committing ₹80 crores to establish infrastructure and support research in quantum technologies.
Quantum Computer Simulator (QSim) Toolkit	The QSim Toolkit was introduced to offer the first quantum development environment for academics, industry professionals, students, and the scientific community in India.

WAY FORWARD:

1. **International Collaboration:** India should collaborate with the private sector and friendly nations to address quantum computing challenges, like Tech **Mahindra's QNxT center in Finland.**
2. **Approval of NM-QTA:** Swift approval and implementation of the NM-QTA initiative, announced in 2020, is essential.
3. **Support for Education:** Ensure adequate support and timely completion of quantum computing educational programs, such as **MTech programs at institutions like DIAT in Pune. Partnerships with companies like IBM and Microsoft can enhance access and education.**
4. **Increased Funding:** India should boost funding for quantum technology, considering the substantial investments made by China and the European Union.

A GM CROP DECISION THAT CUTS THE MUSTARD

Source: The Hindu

Context: The adoption of genetic engineering and advanced scientific methods in crop improvement is crucial for addressing **global food security challenges in the face of climate change**. This shift is driven by the need **to achieve 'Zero Hunger' by 2030** and adapt to evolving food production demands in a dynamic world.

The Importance of GM Crops:

- **Importance of Science-Based Crop Technologies:** Incorporating scientific advancements, including genetic engineering, is vital for enhancing crops in the current context. It complements traditional breeding methods and is crucial for achieving global food and nutritional security amid changing climate conditions.

What is a GM crop?
A crop which has a gene artificially inserted into it from another species, even unrelated, to give it some desired properties. GM crops are mostly either pest-resistant or herbicide-tolerant

GM CROPS IN INDIA A PRIMER

When did India get its first GM crop?
The first GM crop variety approved for commercialisation was Bt cotton. Bollgard-I, which provided immunity against the pink bollworm and developed by Monsanto, was given the go ahead in 2002. Monsanto released Bollgard-II in 2006. India has become the world's largest producer of cotton partly due to Bt cotton, which accounts for over 90% of the total cotton acreage in the country

Are there other GM crops in India?
No, the government has not approved commercial cultivation of other GM crops, though efforts have been made for brinjal and mustard

- **Challenges Highlighted in 2019 Food Security Report:** The 2019 Global Food Security and Nutrition Report emphasized the formidable challenge of reaching the 'Zero Hunger' goal by 2030.

- **Urgency to Accelerate Genetic Crop Improvement:** To effectively address these challenges, there is a pressing need to expedite genetic crop improvement, underlining the importance of accelerating progress in this field.

- **Impact of Green Revolution:** The Green Revolution in the 1960s and 70s significantly boosted food production, increasing it from 50 million tonnes in 1950-51 to over 300 million tonnes in 2020-21.

- **Need for New Biotech/GM Crops:** However, the dynamic nature of climate necessitates the development of new biotech/GM crops with enhanced traits. These crops are essential for combating climate change and providing nutrient-dense food for a growing global population.

- **Success of Genetic Crop Modification:** Genetic modification of crops, harnessing extensive genetic diversity alongside traditional farming, has proven successful in increasing productivity and contributing to global food, feed, and fiber security.

- **Global Adoption of GM Crops:** A 2020 report by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) reveals that GM crops have been embraced by 72 countries for various purposes, including human consumption, animal feed, and commercial cultivation.

- **Benefits Reaching Billions:** GM crops have benefited over 1.95 billion people across five countries, constituting 26% of the world's current population, including Argentina, Brazil, Canada, India, and the United States.

- **Success of Bt Cotton in India:** Bt cotton, introduced as India's first GM crop over two decades ago, stands as a testament to the global success of this technology.

- **Expansion of Genetic Modification:** Genetic modification has extended beyond major crops like maize, soybean, cotton, and canola, encompassing various economically significant food crops, addressing traits such as insect and herbicide resistance, climate resilience, and nutritional enhancement.

- **Substantial Economic Gains:** Global economic gains attributed to GM crops from 1996 to 2018 have reached $224.9 billion, directly benefiting over 16 million farmers, with an impressive 95% of them from developing nations.

COMMERCIALISED GM CROPS' GLOBAL STATUS

More than 30 countries have planted biotech crops since 1996. The top four biotech crops are soybean, corn, cotton and canola.

Soybean 91.9 million hectares
Brazil, USA, Argentina, Paraguay, Canada, Bolivia, Uruguay and South Africa

Maize 60.9 million hectares
USA, Brazil, Argentina, South Africa, Canada, Philippines, Paraguay, Uruguay, Spain, Vietnam, Colombia, Honduras, Chile and Portugal

Cotton 25.7 million hectares
India, USA, China, Pakistan, Brazil, Argentina, Myanmar, Sudan, Mexico, Australia, South Africa, Paraguay, Colombia, Malawi, Eswatini, Nigeria, Ethiopia and Costa Rica

Canola 10.1 million hectares
Canada, USA, Australia, Chile

- **Proven Biosafety of GM Crops:** GM food crops, adopted globally since 1996, have demonstrated their biosafety over the last 25 years and continue to do so.
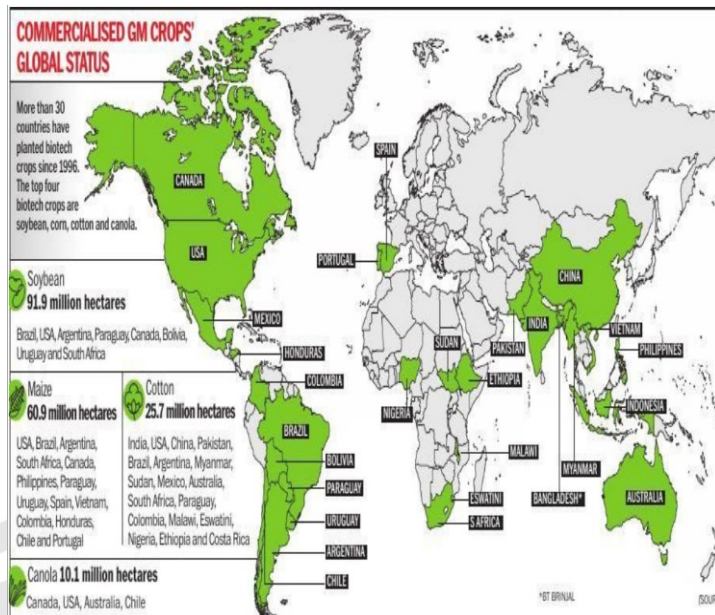
Challenges:

- Amidst the backdrop of these promising advancements, India grapples with a **significant deficit in edible oils**. Approximately **60% of the country's edible oil demand is met through imports**.

- Mustard, a vital **edible oil crop in India**, currently **experiences low yields per hectare**.

- **Enhancing mustard productivity becomes a vital component** of ensuring farmers' economic well-being and achieving self-sufficiency in edible oil production.

- The **consequences of cultivating genetically modified** (GM) crops, such as GM mustard, on various aspects like public health, the environment (including soil quality), the food chain, and groundwater remain uncertain.

- **Ethical concerns** surround GMs, including issues related to violating the intrinsic values of natural organisms and tampering with nature by intermingling genes across species

Way Forwards:

- **GM Mustard Hybrid DMH 11 Benefits:** The introduction of GM mustard hybrid DMH 11, known for its higher vigor and yield, holds significant promise. This development is expected to boost domestic edible oil production and improve farmers' incomes.

The science behind DMH-11

- **Genetic Basis in the Barnase/Barstar System:** The GM mustard hybrid is based on the barnase/barstar system, a genetic engineering technique that addresses male fertility in one parent and restores it in the offspring.
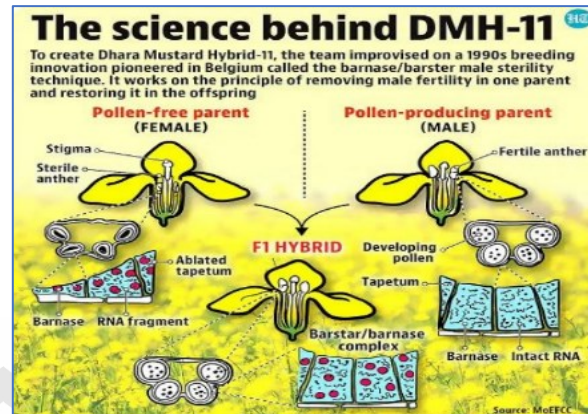
- **Key Role of Research at CGMCP, University of Delhi South Campus:** Extensive research conducted at the Centre for Genetic Manipulation of Crop Plants (CGMCP), University of Delhi South Campus, has been pivotal in creating this GM mustard hybrid.

- **Utilizing Herbicide Tolerance Gene for Enhancement:** The incorporation of the herbicide tolerance gene as a selection marker in GM mustard development highlights the multifaceted potential of genetic engineering in crop improvement.

- **GEAC Approval Marks Milestone:** A significant milestone was reached on October 25, 2022, when the Genetic Engineering Appraisal Committee (GEAC) of the Ministry of Environment, Forest, and Climate Change, Government of India, approved the release of DMH 11 and its parental line for cultivation.

- **Hybrid Production for Higher Yields and Improved Quality:** GEAC's decision to allow barnase/barstar-based hybrid production in mustard opens doors to breeding mustard hybrids that not only offer higher yields but also possess disease resistance and improved oil quality.

- **Benefits for Farmers and Increased Incomes:** This advancement is poised to benefit farmers by increasing yield per hectare, subsequently boosting their incomes.

Contributing to Self-Reliance in Edible Oil Production: Considering India's domestic edible oil consumption of around 25 million tonnes and edible oil imports of approximately 13 million tonnes, the cultivation of these indigenous GM mustard hybrids can play a pivotal role in enhancing farmers' incomes, reducing the burden of oil imports, and ultimately achieving much-needed self-reliance in edible oil production.

NASA'S FIRST ASTEROID SAMPLES LAND ON EARTH

SOURCE: TH, NASA

WHY IN NEWS?

- After years of anticipation and hard work by **NASA's OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification and Security – Regolith Explorer)** team, a capsule of **rocks and dust collected from asteroid Bennu finally is on Earth.**
- In a **flyby of Earth**, the spacecraft released the sample capsule from 100,000 km out.

ABOUT OSIRIS-Rex:

- ➢ OSIRIS-REx stands for Origins, Spectral Interpretation, Resource Identification, Security, Regolith Explorer.
- ➢ It's **NASA's first mission aimed at collecting a sample from an asteroid. Launched in September 2016** and reached the near-Earth asteroid Bennu in December 2018.
- ➢ In October 2020, OSIRIS-REx briefly touched down on Bennu to gather a sample using a vacuum.
- ➢ The spacecraft traveled a staggering 6.2 billion km (4 billion miles) before returning the sample to Earth.
- ➢ The mission seeks to provide insights into the early history of our solar system and the potential threat of asteroid impacts on Earth.
- ➢ Its objectives include understanding the solar system's origins, studying asteroid composition, and collecting Bennu's surface material.
- ➢ **OSIRIS-REx is NASA's third sample return mission from deep space, following Genesis and Stardust.**

ABOUT BENNU:

- ➢ It is **a near-Earth asteroid.**
- ➢ Positioned about 81 million km away from Earth, Bennu is **approximately half a kilometre wide and resembles a spinning top in shape.**
- ➢ It's believed to be a fragment from a much larger asteroid.
- ➢ **Proximity to Earth:** Bennu falls into the category of **Near-Earth Objects (NEOs), which are asteroids orbiting within 1.3 astronomical units (AU) of the Sun (1 AU is the distance between Earth and the Sun, roughly 93 million miles).** For sample return missions like OSIRIS-REx, the most accessible asteroids are typically found between 0.8 AU and 1.6 AU. Bennu's orbit brings it very close to Earth every 6 years, within 0.002 AU, making it highly accessible.
- ➢ **Size:** Smaller asteroids tend to rotate more rapidly than larger ones. Bennu, with its diameter of less than 200 meters, rotates quickly

| NASA's SPACE EXPLORATIONS:		
Mission	Destination	Goals
Apollo 11	Moon	To land humans on the Moon and return them safely to Earth.
Voyager 1 and 2	Outer solar system	To explore the outer planets and beyond.
Galileo	Jupiter	To study Jupiter and its moons, including Europa and Ganymede.
Cassini-Huygens	Saturn	To study Saturn and its moons, including Titan and Enceladus.
Hubble Space Telescope	Earth orbit	To observe the universe in optical and ultraviolet light.
James Webb Space Telescope	Earth-Sun L2 point	To observe the universe in infrared light, with a focus on the early universe and exoplanets.
New Horizons	Pluto and the Kuiper Belt	To fly by Pluto and Charon, and to explore the Kuiper Belt.
Perseverance	Mars	To search for signs of ancient life on Mars and to collect samples for return to Earth.

QUANTUM TECHNOLOGY

SOURCE: ORF, HINDUSTAN TIMES

WHY IN NEWS?

➢ A leading Russian scientific institution has expressed a keen interest in forming partnerships with Indian research institutes to develop quantum technology applications and hardware that can benefit public services.

➢ This interest comes as India advances in the field of quantum technology.

QUANTUM TECHNOLOGY:

➢ **Quantum technology belongs to a category of technology that harnesses the principles of quantum mechanics, a branch of physics focused on the behaviour of subatomic particles.**

➢ It utilizes concepts **like quantum entanglement and quantum superposition** to operate and achieve its capabilities.

➢ Quantum computing represents a fundamentally distinct approach to information processing when compared to today's conventional classical computing systems.

➢ This interest comes as India advances in the field of quantum technology.
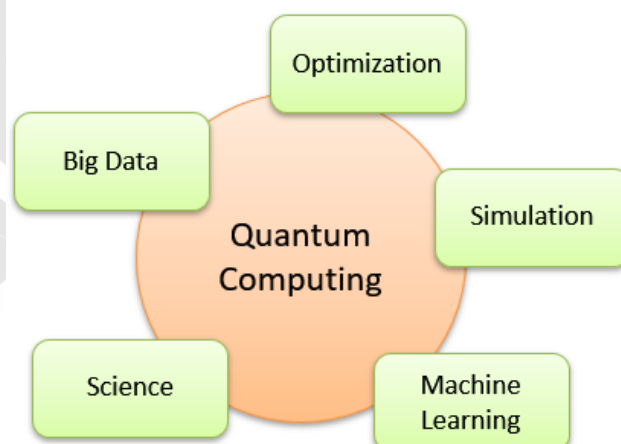
> **By 2030, the widespread integration of quantum technologies in various sectors could contribute approximately $280-$310 billion to the Indian economy. (NASSCOM)**

POTENTIAL BENEFITS OF QUANTUM TECHNOLOGY :

> **Climate Data Collection:**

Quantum computing can aid in the early and prompt gathering of climate data, which can be crucial in reducing the severity of disasters in their initial stages.

> **Agriculture and Food Technology:**

Impact on Agriculture: Quantum computing can significantly affect agriculture and food technology, potentially leading to the loss of arable land.

> **Secure Communication:**

Quantum computing has applications in ensuring secure communication, especially for sensitive sectors like military, satellites, and cyber security.
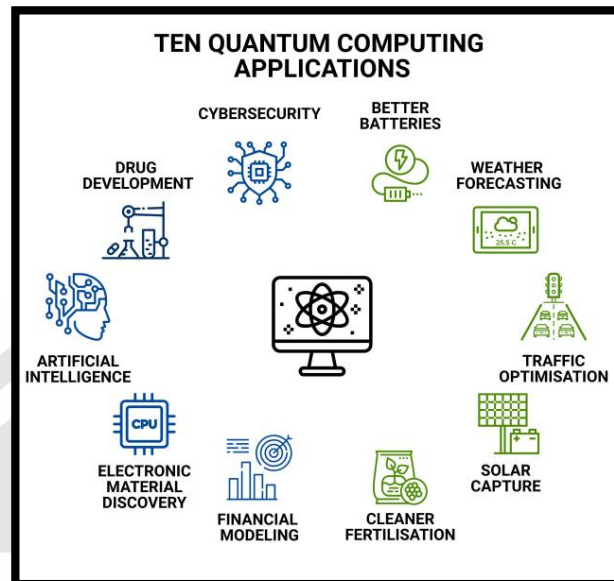
IoT, Big Data, AI: It can also benefit emerging technologies like the Internet of Things (IoT), Big Data analytics, and Artificial Intelligence (AI).

> **Research:**

Quantum computing has the potential to advance biological research, including genome sequencing and personalized medicine delivery.

> **Space Exploration:**

It can aid in space exploration, helping to study the universe, gravitational waves, and phenomena like black holes.

TEN QUANTUM COMPUTING APPLICATIONS

- CYBERSECURITY
- BETTER BATTERIES
- DRUG DEVELOPMENT
- WEATHER FORECASTING
- ARTIFICIAL INTELLIGENCE
- TRAFFIC OPTIMISATION
- ELECTRONIC MATERIAL DISCOVERY
- CPU
- FINANCIAL MODELING
- CLEANER FERTILISATION
- SOLAR CAPTURE

INITIATIVES TO SUPPORT QUANTUM TECHNOLOGY:

INITIATIVE	OBJECTIVE
National Mission on quantum technologies and applications.	The 2021 budget earmarked INR 8000 Crore to boost quantum technology, encompassing computing, cryptography, communication, and materials.
Quantum Computing Laboratory.	In December 2021, the Indian Army established a quantum computing lab and AI center in Mhow, Madhya Pradesh, supported by the National Security Council Secretariat (NSCS).
I-HUB Quantum Technology Foundation:	The Department of Science and Technology, in collaboration with 13 IISER Pune research groups, initiated the I-HUB Quantum Technology Foundation (I-HUB QTF) to advance quantum technology development.
IBM Quantum Educators Programme	Engaging in partnerships with prominent educational institutions in India via participation in the IBM Quantum Educators Program.

Inter-Governmental Initiatives Private Initiatives

1. Quantum Technologies Flagship: IBM
2. AUKUS: GOOGLE
3. Quad: DWave
4. CERN Quantum Technology Initiative: Amazon
5. Quantum Leap Africa: IonQ
6. One Quantum: Infosys

PROBLEMS ASSOCIATED

➢ **Huge funding requirements:**

Ensuring the success of the National Quantum Mission hinges on securing sufficient funding, which presents a challenge in terms of sustained support from government and private investments.

➢ **Trained and qualified skill forces:**

Quantum technology necessitates a proficient workforce well-versed in quantum physics, engineering, and related fields

➢ **Ethical concerns:**

Harnessing quantum technologies, like quantum computing and cryptography, may bring about notable societal effects, encompassing data security, cyber protection, and societal transformations.

WAY FORWARD

➢ **Public Awareness:** Educate the public on quantum technology.

➢ **Infrastructure:** Invest in advanced quantum facilities.

➢ **Commercialization:** Transition research into practical use.

➢ **Regulations:** Create balanced regulatory frameworks.

➢ **Education:** Develop specialized quantum training programs.

➢ **Collaboration:** Foster partnerships between academia and industry.

➢ **Start-ups:** Encourage quantum tech start-up growth.

Internal Security

MARITIME INFRASTRUCTURE PERSPECTIVE PLAN

SOURCE: THE HINDU

WHY IN NEWS?

➢ At the **Naval Commanders Conference** on Monday, Minister of State for Defence Ajay Bhatt presented **the Maritime Infrastructure Perspective Plan 2023–37**, which aims to **develop sustainable architecture** in accordance with the more general policy directive of the PM Gati Shakti project.

➢ In a statement issued on the first day of the three-day Conference, the maritime force stated that it seeks to synchronize and enmesh the infrastructure requirements of the Navy over the next 15 years through a complete perspective plan model.

MARITIME INFRASTRUCTURE PERSPECTIVE PLAN :

INFRASTRUCUTRE DEVELOPMENT

• Through a thorough perspective plan model, the MIPP seeks to synchronise and integrate the infrastructure needs of the Navy over the course of the next 15 years.

REGULATIONS

• Also released were the **Indian Register for Shipping (IRS) rules and regulations handbook**, family logbook, and electronic service document project

TECHNOLOGICAL ADVANCEMENTS

• The Plan Document includes salients for compliance with broader policy directives on the PM Gati Shakti project, disaster resilience, and the transition to net zero, among other things.

• It is in line with the government's aim for the development of sustainable infrastructure. technological advancement as well.

SIGNIFICANCE OF THE MARITIME SECTOR FOR INDIA:

➢ **Strategic importance:** India has strategic interests and security concerns in the Indian Ocean region, which is also where its maritime interests extend.

➢ **Blue economy:** The term "blue economy" refers to the ethical and responsible use of ocean and marine resources for economic development and marine ecosystem preservation.

➢ **Tourism and coastal development:** With its beaches, coastal cities, and historical landmarks, India's coastline is a well-liked vacation spot. The maritime industry makes a contribution to tourism by creating income and job possibilities.

➢ **Connectivity:** Bulk freight and containers can be transported effectively and economically across the sea. It links inland and coastal areas, enhancing accessibility for businesses and residents.

CHALLENGES FACED BY THE MARITIME SECTOR IN INDIA:

➢ **Maritime security:** The key concerns in the marine realm have evolved to include terrorism (26/11 attack), arms smuggling, piracy, drug trafficking, illegal immigration, and natural disasters.

➢ **Coastal pollution:** Significant obstacles include environmental issues in regard to shipbreaking practices, coastal pollution, and the disposal of dangerous chemicals from ships.

➢ **Funding for infrastructure:** For public-sector projects in particular, securing funding for the development of port and maritime infrastructure is a persistent struggle.

  • The expansion of infrastructure depends on attracting corporate investment and public-private partnerships.

➢ **Logistic problems**: Increased shipping costs are a result of ineffective transportation and logistics networks, which has an effect on how competitively priced Indian exports are.

➢ **Need for modernization of the infrastructure**: The outdated infrastructure at many Indian ports can cause congestion, delays, and higher logistics costs.

  • Modernising and expanding ports to accommodate larger vessels is still a major concern.

INITIATIVES FOR THE DEVELOPMENT OF MARITIME SECTOR IN INDIA:

Initiative	Objective
Sagarmala Programme	Promote port-led development, reduce logistics costs, and enhance port and coastal infrastructure.
National Maritime Development Programme (NMDP)	Improve the overall competitiveness of the maritime sector and foster sustainable development of ports.
Green Port Initiatives	Implement eco-friendly practices in port operations to reduce the environmental impact of maritime activities.
Maritime India Vision 2030	Provide a long-term roadmap for the maritime sector's growth, modernization, and development.
Maritime Connectivity Promotion Scheme (MCPS)	Enhance coastal shipping and inland waterway transportation to reduce logistics costs and fuel consumption.
International Shipbreaking Code (ISC)	Regulate shipbreaking activities to ensure worker safety, environmental protection, and responsible recycling.
Maritime Cluster Development Program (MCDP)	Promote the establishment of maritime clusters to enhance competitiveness and innovation in the sector.

INTERNATIONAL TREATIES AND CONVENTIONS

TREATY	OBJECTIVE
United Nations Convention on the Law of the Sea (UNCLOS)	Governs the use and management of the world's oceans and marine resources.
International Convention for the Safety of Life at Sea (SOLAS)	Sets safety standards for the construction, equipment, and operation of ships.
International Maritime Organization (IMO) Conventions	Covers various conventions related to shipping, maritime security, and seafarer training standards.
International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)	Regulates the dumping of wastes at sea.
Hongkong convention	The convention intends to address the safety and environmental issues with ship recycling, especially the risky and damaging practices in shipbreaking yards.

WAY FORWARD:

➢ **Sustainable practices:** Promote environmentally friendly port operations, emission reductions, and the use of clean energy sources in shipping.
➢ **Encourage PPPs:** Encourage collaborations between the public and commercial sectors for port development and management.
➢ **International collaboration:** To harmonize maritime regulations and advance trade, work with neighbouring nations and international organizations.

DEFENCE MINISTER INAUGURATES 90 BORDER INFRASTRUCTURE PROJECTS

SOURCE: THE HINDU

WHY IN NEWS?

➢ Defence Minister Rajnath Singh inaugurated **90 border infrastructure projects across 11 states and Union Territories on Tuesday.**

➢ These projects include the **Nechiphu tunnel, which will ensure year-round connectivity to the strategically important Tawang region in Arunachal Pradesh, and the laying of the foundation stone for a significant military airfield in Nyoma, eastern Ladakh.**

➢ Among the 90 projects undertaken by the Border Roads Organisation, a significant **majority of 64 projects are located in the states of Arunachal Pradesh, Ladakh, and Sikkim.**

IMPORTANCE OF BORDER INFRASTRUCTURE IN INDIA:

➢ **Maintaining the integrity of the nation:**

Enhanced border infrastructure can facilitate regional integration and cooperation with neighbouring countries, promoting joint development initiatives, and regional stability.

➢ **Maintaining connectivity:**

Border infrastructure contributes to better connectivity between remote border regions and the rest of the country.

It can help in improving the quality of life for residents in these areas by providing access to essential services, education, and healthcare.

➢ **Economic development:**

Border infrastructure, such as roads, bridges, and tunnels, facilitates trade and connectivity with neighbouring countries.

It opens up opportunities for cross-border trade, which can boost economic growth and regional development.

➢ **Defence and strategic purposes:**

Border infrastructure is vital for safeguarding national security.

It enables the Indian armed forces to maintain a strong presence along the borders.

We can respond quickly to security threats, and ensure the integrity of the nation's territorial boundaries.

CHALLENGES IN CREATING BORDER INFRASTRUCTURE IN INDIA:

➢ **BORDER DISPUTES:**

Border areas are susceptible to security threats, and construction work can be disrupted by insurgency, terrorism, or border disputes, leading to delays and increased costs.

➢ **GEOGRAPHICAL DIFFICULTIES:**

India's border regions often feature rugged terrain, extreme weather conditions, and high altitudes, making the construction and maintenance of infrastructure difficult and costly.

➢ **ENVIRONMENTAL IMPACT:**

Infrastructure development in sensitive border ecosystems can have adverse environmental consequences, necessitating rigorous environmental assessments and mitigation measures.

➢ **PROBLEMS WITH FUNDING:**

Infrastructure projects, especially those in remote border areas, can have long gestation periods, which can lead to budget overruns and delays.

GOVERNMENT INITIATIVES:

Program	Objectives
Border Roads Organization (BRO)	Develop and maintain roads, bridges, tunnels, and airfields in border regions.
Bharatmala Pariyojana	Improve road connectivity in border areas, focusing on strategic regions.
Sagarmala Project	Develop coastal and inland waterways infrastructure to enhance connectivity in border regions and facilitate trade.
Atal Tunnel	Provide year-round connectivity to Ladakh, reduce travel time, and ensure security and logistics support.
Defence Industrial Corridor	Promote defense production and support the development of critical infrastructure in border areas.
Strategic Border Roads	Construct strategic border roads along the India-China border to enhance military mobility and deployment.
Border Area Development Program (BADP)	Meet developmental needs in border areas, including healthcare, education, and communication infrastructure.
Integrated Check Posts (ICPs)	Facilitate cross-border trade and improve infrastructure at key border crossings.
Dedicated Freight Corridors	Improve transportation of goods, indirectly benefiting border regions by enhancing connectivity and economic development.

WAY FORWARD:

➢ **SUSTAINABLE INFRASTRUCTURE MANAGEMENT:**

Prioritize environmentally sustainable design and construction methods, conducting thorough environmental impact assessments for all projects.

Explore innovative solutions like green infrastructure and renewable energy integration to minimize the ecological footprint.

➢ **CONTINUOUS MONITORING AND UPGRADATION:**

Establish a robust maintenance and upgradation schedule to ensure the longevity and functionality of border infrastructure.

Use data-driven analytics for predictive maintenance.

➢ **COMMUNITY ENGAGEMENT:**

Involve local communities in the planning and decision-making processes, addressing their concerns, and ensuring they benefit from infrastructure development.

Implement inclusive development projects that promote social and economic well-being.

➢ **BILATERAL ENGAGEMENTS:**

Engage in diplomatic negotiations and reach bilateral agreements with neighboring countries to facilitate smooth border infrastructure development, ensuring it does not trigger disputes or conflicts.

LORD OF DANCE: HISTORY AND SYMBOLISM OF SHIV'S NATARAJA FORM

SOURCE: THE INDIAN EXPRESS

WHY IN NEWS?

➢ This weekend, a majestic 27-foot Nataraja, the tallest statue of Lord Shiva's dancing form in the world, will welcome G20 leaders in front of Bharat Mandapam in New Delhi's Pragati Maidan.

➢ The statue was created by sculptors from Swamimalai in the Thanjavur region of Tamil Nadu as an ashtadhatu (eight-metal alloy) work of art. It was transported across the nation on a 36-wheel trailer and weighed around 18 tonnes.

➢ **Design Inspiration:** The sculpture draws inspiration from three revered Nataraja idols at the Thillai Nataraja Temple in Chidambaram, the Uma Maheswarar Temple in Konerirajapuram, and the Brihadeeswara Temple in Thanjavur.

HISTORY OF NATARAJA

➢ One of the most recognisable and revered images of Lord Shiva in Hinduism is the Nataraja idol, which represents his function as the Lord of Dance.

➢ A stunning example of Indian sculpture and workmanship is the Nataraja idol from the Chola period.

➢ A strong and prominent dynasty that ruled across South India, the Chola dynasty reached its height during the ninth and thirteenth centuries CE.

➢ The Chola emperors were generous supporters of religion, culture, and the arts.

➢ **The Nataraja idol was probably made during the rule of Rajaraja I (985–1014 CE) or Rajendra Chola (1014–1044 CE), who was Rajaraja I's son.**

➢ The **lost wax (cire perdue) casting** method was used to create the majority of the bronze Nataraja statues from the Chola era.

SYMBOLISM OF THE NATARAJA IDOL

➢ **TANDAVA DANCE:** It reflects the dynamic and rhythmic cycles of creation, preservation, and destruction in the cosmos as represented by Shiva's cosmic dance, known as the Tandava.

➢ **APASMARA:** Apasmara, a demon that represents ignorance, is generally crushed under Shiva's foot while he stands on one leg, representing the victory of knowledge over ignorance.

➢ **FOUR ARMS**: Shiva's four arms are holding a variety of symbolic items, such as a drum, fire, which represents destruction, and a raised hand that is blessing his followers.

His hair symbolizes Ganges River falling from heaven to earth.

The ring of fire represents the divinity of creation, the births and deaths of the world.

Drum: beating of the creation rhythm.

The crown and the moon are constant attributes of Shiva

Snake: the cosmic energy

Flame means the destruction of the world in order to build again from new.

Lotus flower: symbolizes the heart of the devouts.

Clothing made from the skin of the defeated leopard

Demon dwarf symbolizes the man's ego and ignorance, defeated by Shiva, reaching the true wisdom.

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SOURCE- A GLIMPSE OF HISTORY

PANCHAKRITYA - THE FIVE KEY ACTS OF THE NATARAJA:

1. **Srishti (Creation):** The Nataraja's rear left arm wields the damaru drum, symbolizing the vibrations that create the universe, often paralleled with the Big Bang theory.

2. **Samhara (Destruction):** The raised rear right hand holds the fire of transformation, not destruction, signifying constant change and echoing the idea of "There's no being, only becoming."

3. **Sthithi (Maintenance/Protection):** The open palm of the forehand assures that cosmic changes are normal, and Nataraja is here to protect, maintaining the balance of the universe.

4. **Tirobhava (Concealment):** The hidden lower-left palm points downwards, signifying Nataraja's role as the creator of illusion or maya, the veil of ignorance.

5. **Anugraha (Blessing/Liberation):** The raised left foot and closed hand offer seekers the choice of moksha, liberation from ignorance, and freedom from the cycle of birth and death.

BHARATANATYAM

SOURCE: TH

WHY IN NEWZ?

Classical dancer Saroja Vaidyanathan, known for her expertise in Bharatanatyam, has passed away. She received the Padma Shri award in 2002 and was honored with the Padma Bhushan in 2013.

ABOUT BHARATANATYAM:

❖ Bharatanatyam, a **classical dance from southern India**, originated from temple dancers and was previously known as **Sadir or Dasi Attam.**

❖ Bharatanatyam holds the distinction of being the **first Indian traditional dance to transform into a theatrical art form** and gain recognition both nationally and internationally.

❖ The foundations of Bharatanatyam are rooted in the principles of performance and aesthetics outlined in ancient texts like **Bharata's Natyashastra.**

❖ This dance form boasts an extensive repertoire of songs in Telugu, Tamil, and Sanskrit.

❖ **Bharatanatyam incorporates a refined language of Nritta** (abstract dance) and **Nritya** (narrative dance).

❖ The themes explored in Bharatanatyam performances encompass a **wide spectrum, including human and divine love, primarily categorized as shringara (romantic love) and Bhakti (devotion).**

❖ The musical accompaniment for Bharatanatyam aligns with the **Carnatic music system** prevalent in southern India.

❖ Common **musical instruments** accompanying a Bharatanatyam performance include the **Mridangam, Veena, Flute, Violin, Talam, Ghatam, Kanjeera, Tambura, Nadaswaram, and Harmonium.**

ELEMENTS OF BHARATANATYAM:

Aspect	Description
Bhava (Expressions)	Bharatanatyam performers must master **various facial expressions (joy, surprise, anger, grief, love, etc.)** to effectively convey the message during their performance. Expressions play a vital role in communication.
Hastha Mudra (Hand gestures)	Hand gestures and intricate finger movements are integral to Bharatanatyam, allowing dancers to create different shapes and convey meaning through gestures.
Thala	Bharatanatyam performances are synchronized with soulful Carnatic music, incorporating **rhythmic intervals known as "thalas"** that **contribute to the overall rhythm and tempo of the dance.**
Dance	Bharatanatyam dances are choreographed meticulously, utilizing the entire stage space. Dancers execute intricate body maneuvers, dance steps, facial expressions, and hand gestures, harmoniously synchronized with music.
Nataraja Statue	**Most Bharatanatyam performances take place in front of a Nataraja statue**. Each performance **commences with a prayer** and **initial steps as a mark of reverence to Lord Nataraja.**
Dress	**Female Bharatanatyam performers don silk sarees,** complemented by suitable ornaments, jewelry, and metallic bells (gejje) on their wrists and ankles. Male performers attire themselves in **silk dhotis**, shalyas, and minimal jewelry.
Performers	Bharatanatyam is performed by both male and female artists, although a majority are female practitioners.
Solo/Group	Bharatanatyam can be performed either solo or in small groups, providing flexibility in presentation and interpretation of the dance form.

OTHER CLASSICAL DANCE FORMS OF INDIA:

Dance Form	Origin	Key Features
Kathak	Northern India	- Emphasizes fast footwork (Tatkar) and spins (Chakkar). - Storytelling through expressive gestures and movements. - North Indian classical music accompanies the dance. - Incorporates Persian and Mughal influences. - Ghungroos (bells) worn by dancers produce rhythmic sounds.
Kathakali	Kerala	- Elaborate makeup and costumes. - Focus on facial expressions (Navarasas). - Distinctive hand gestures (Mudras). - Epic stories from Hindu mythology are performed. - High-energy and dramatic performances. - Requires extensive training and physical conditioning.
Odissi	Odisha	- Graceful and lyrical dance style. - Emphasis on sculpturesque poses (Tribhangi). - Use of hand gestures (Mudras) and eye movements (Drishti Bheda). - Narratives often inspired by temple sculptures and mythology. - Accompanied by Odissi music and percussion instruments.
Mohiniyattam	Kerala	- Translates to "Dance of the Enchantress." - Fluid and graceful movements. - Storytelling through expressions and gestures. - Feminine and sensuous style. - White and gold costume, with minimal jewelry. - Typically accompanied by classical Carnatic music.
Kuchipudi	Andhra Pradesh	- Blend of dance and theater. - Narratives from Hindu epics and mythological stories. - Expressive facial expressions (Abhinaya). - Dynamic footwork. - Dancers often enact multiple roles in a single performance. - Colorful costumes and makeup. - Music from Andhra Pradesh accompanies the dance.
Manipuri	Manipur	- Known for its lyrical and graceful movements. - Unique use of curved movements and circular patterns. - Themes often revolve around Radha-Krishna love stories. - Dancers wear traditional cylindrical skirts (Raslila) or white costumes (Tala Rasak). - Accompanied by Manipuri music and drums.
Sattriya	Assam	- Developed in Assam's monasteries (Sattras). - Spiritual and devotional themes. - Simple and elegant footwork. - Hand gestures (Mudras) represent stories. - Dancers wear traditional attire. - Sattriya music and percussion instruments accompany the dance.

ADI SHANKARACHARYA STATUE AT OMKARESHWAR

SOURCE: IE, shankaracharya.org

WHY IN NEWZ?

➢ Madhya Pradesh Chief Minister inaugurated the **'Statue of Oneness' of Adi Shankaracharya in Omkareshwar, standing at a height of 108 feet.**

➢ The statue **portrays Adi Shankaracharya as a 12-year-old child**, symbolizing his visit to Omkareshwar during his early years.

➢ Omkareshwar is **situated on Mandhata island** in the Khandwa district.

➢ This development is poised to create a significant tourism circuit, in conjunction with religious towns like Ujjain, Maheshwar, and Mandu.

ABOUT ADI SHANKARACHARYA:

❖ **Early Life and Birthplace:**
   a. Adi Shankara, believed to have lived between **788 and 820 AD**, was **born in Kaladi, Kerala, located on the banks of the Periyar River**.
   b. At a young age, he embraced a life of renunciation (sanyasin) and departed from his Brahmin family.
   c. He is said to have journeyed to Omkareshwar, where he received **teachings from his guru, Govinda Bhagavatpada.**

❖ **Advaita Vedanta Proponent:**
   a. Adi Shankaracharya emerged as a **proponent of Advaita Vedanta, challenging established philosophical traditions such as Buddhism and Jainism**.
   b. Advaita Vedanta, a school of Hindu philosophy, espouses non-duality, emphasizing the unity between the subject and object.

❖ **Notable Literary Contributions:**
   a. Adi Shankaracharya's literary contributions include **approximately 116 works**.
   b. Among these, his **commentaries (Bhashyas) on foundational texts like the Brahma Sutras (Vedanta Sutras), major Upanishads (such as Isa Upanishad, Katha Upanishad, Chandogya Upanishad), and the Bhagavad Gita hold prominence.**
   c. He also authored Prakarana Granthas, including "**Vivekachudamani,**" exploring discrimination between the eternal and non-eternal, "**Upadeshasahasri,**" consisting of a thousand verses offering teachings on Advaita Vedanta, and "**Atma Bodha,**" a concise treatise on self-realization.

❖ **Devotional Hymns (Stotras):**
   a. Adi Shankaracharya composed devotional hymns, including the "**Nirvana Shatakam**" (also known as "Atma Shatakam"), which delineates the realization of the self as distinct from the body and mind, and "**Bhaja Govindam**," a devotional composition emphasizing the importance of devotion and spiritual practice.

❖ **Commentaries on Sanatana Dharma:** His contributions extend to commentaries on aspects of Sanatana Dharma (eternal religion). The "**Dakshinamurti Stotra**," a hymn to Lord Dakshinamurti, elucidates the significance of the guru in one's spiritual journey.

❖ **Travel and Monastic Centers:** Adi Shankaracharya is renowned for his extensive travels across India, where he engaged in philosophical debates and established monastic centres known as mathas. These mathas continue to propagate the teachings of Advaita Vedanta to this day.

ORTHODOX SCHOOLS OF INDIAN PHILOSOPHY:		
Orthodox School	**Key Philosopher**	**Main Philosophical Concepts**
Nyaya	Gautama (Nyaya Sutras)	▪ Logic and epistemology ▪ Focus on valid knowledge (pramana) ▪ Four means of attaining valid knowledge: perception (pratyaksha), inference (anumana), comparison (upamana), and verbal testimony (shabda) ▪ Emphasis on logical reasoning and debate ▪ Belief in a dualistic worldview: self (atman) and matter (prakriti)
Vaisheshika	Kanada (Vaisheshika Sutras)	▪ Atomism: All objects in the physical universe are reducible to finite atoms ▪ Realism and objective philosophy ▪ Six categories of reality: substance (dravya), attribute (guna), action (karma), genus (samanya), distinct quality (vishesha), and inherence (samavaya) ▪ Belief in God as the guiding principle
Samkhya	Kapila (Samkhya Sutras)	▪ Dualistic philosophy ▪ Distinction between purusha (consciousness) and prakriti (matter) ▪ Purusha is unmodifiable, while prakriti undergoes change - Liberation (moksha) achieved through knowledge and discernment ▪ Enumeration of 25 principles (tattvas) in the universe
Yoga	Patanjali (Yoga Sutras)	▪ Union of individual self (atman) with the universal self (Brahman) ▪ Eightfold path (Ashtanga Yoga) to achieve spiritual realization ▪ Ethical and practical guidelines for self-discipline (yama and niyama), physical postures (asana), breath control (pranayama), and meditation (dhyana)

Mimamsa	Jaimini (Mimamsa Sutras)	▪ Focus on ritual interpretation and Vedic duties ▪ Emphasis on the importance of Vedas ▪ Belief in the eternal nature of Vedas and their role in guiding human action ▪ Dharma as the essence of Vedas ▪ Concerned with the correct performance of Vedic rituals and ceremonies
Vedanta	Various (Vedanta Sutras)	▪ Diverse interpretations of Upanishads ▪ Focus on the nature of reality (Brahman) and the self (Atman) ▪ Different sub-schools, including Advaita (non-dualism), Visishtadvaita (qualified non-dualism), and Dvaita (dualism) - Liberation (moksha) through knowledge of the self and realization of oneness with Brahman

MAJOR CULTURAL AND HERITAGE SITES IN MADHYA PRADESH:

Site	Description
Khajuraho Group of Monuments	▪ UNESCO World Heritage Site ▪ Famous for its exquisite temples with intricate erotic sculptures ▪ Built by the Chandela dynasty between the 9th and 11th centuries ▪ Representative of Nagara-style architecture
Sanchi Stupa	▪ UNESCO World Heritage Site ▪ A Buddhist complex with several stupas, monasteries, and temples ▪ The Great Stupa is the most prominent structure ▪ Dates back to the 3rd century BCE and expanded during the Mauryan period
Bhimbetka Rock Shelters	▪ UNESCO World Heritage Site ▪ Ancient rock shelters with prehistoric cave paintings ▪ Depict scenes of daily life, hunting, and rituals ▪ Some paintings date back to over 30,000 years ago
Orchha	▪ Historic town with well-preserved palaces and temples ▪ Highlights include Jahangir Mahal, Raj Mahal, and Chaturbhuj Temple ▪ Offers a glimpse into medieval Indian architecture and culture

Mandu (Mandavgarh)	- Ancient fortress town with historic palaces, mosques, and tombs - Notable structures include Jahaz Mahal, Hindola Mahal, and Jami Masjid - Known for its Afghan architecture and scenic beauty
Ujjain	- One of the seven sacred cities in Hinduism - Home to the Mahakaleshwar Jyotirlinga Temple - Known for the Kumbh Mela, a major religious festival. Rich in cultural and religious heritage
Chanderi	- Historic town known for its fort, palaces, and stepwells - Houses the Chanderi Fort, Koshak Mahal, and Badal Mahal - Famous for its silk sarees and craftsmanship
Omkareshwar	- A sacred island in the Narmada River - Known for the Omkareshwar Jyotirlinga Temple - Pilgrimage site with a serene atmosphere - Offers religious and cultural significance

KOKBOROK, TRIPURA'S LANGUAGE WITHOUT A SCRIPT

SOURCE: THE INDIAN EXPRESS , TRIPUA TRIBAL AREA AUTONOMOUS DISTRICT COUNCIL

WHY IN NEWS?

➢ During a 12-hour nationwide strike planned by the Tripura Students' Federation (TSF) to demand the adoption of the Roman script for Kokborok, the state's indigenous tongue, as well as other demands, more than 260 individuals were jailed in Tripura.

ABOUT KOKBOROK LANGUAGE:

➢ Kokborok (also known as Tripuri) is a **Tibeto-Burman language** spoken in Bangladesh's border regions and in the Indian state of Tripura.

➢ The Sino-Tibetan language Kokborok **belongs to the Bodo-Garo branch.**

➢ It has connections to the **Bodo and Dimasa languages** of the nearby Assam region.

➢ The **state of Meghalaya and Bangladesh** is home to **speakers** of the related **Garo language**.

CONTROVERSY OVER SCRIPT OF THE LANGAUGE:

➢ It has a lengthy history and was designated as **Tripura's official state tongue in 1979**.

➢ It is **presently taught at Tripura Central University in addition to the state's 22 degree-granting institutions.**

➢ There is **debate** about whether Kokborok should be **written in Bengali script or Roman script**, while the **language does not have its own script**.

➢ Two commissions were established by the former Left government to look into the matter.

➢ Both panels concluded that the **majority of the state's indigenous peoples preferred the Roman script.**