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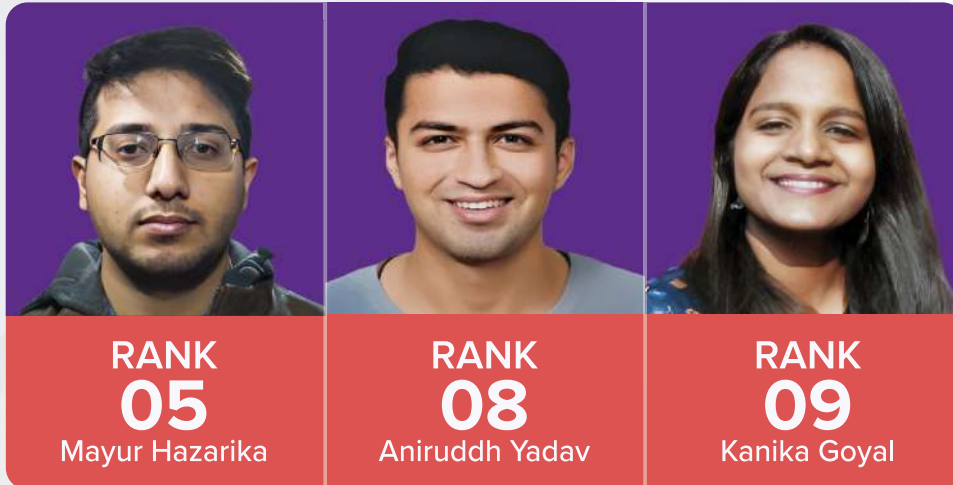
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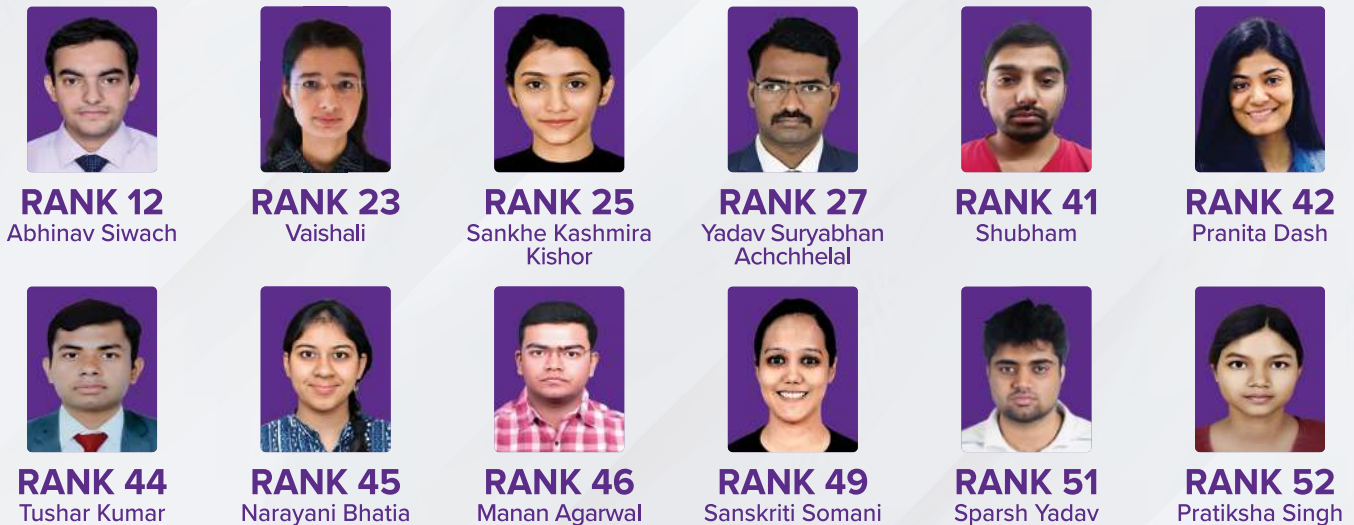
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# Congratulations

To Our Top Performers in UPSC CSE 2022



## Our Top Performers



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**03** Ranks in Top 10

**06** Ranks in Top 25

**30** Ranks in Top 100

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# Outstanding performance by BYJU'S students in IAS 2021

Congratulations to our toppers

03

Ranks in  
Top 10

12

Ranks in  
Top 25

25

Ranks in  
Top 50



**RANK 01**

Shruti Sharma



**RANK 5**

Utkarsh Dwivedi



**RANK 6**

Yaksh Chaudhary



**RANK 12**

Yasharth Shekhar



**RANK 13**

Priyamvada  
Mhaddalkar



**RANK 14**

Abhinav Jain



**RANK 15**

Challapalle  
Yaswanthkumarreddy



**RANK 16**

Anshu Priya



**RANK 19**

Diksha Joshi



**RANK 20**

Arpit Chauhan



**RANK 21**

Dilip Kainikkara



**RANK 25**

Shruti Rajiakshmi



**RANK 29**

Bhavishya



**RANK 31**

Avinash V



**RANK 33**

Jaspinder Singh



**RANK 35**

Kartikeya Jaiswal



**RANK 37**

V Sanjana Simha



**RANK 40**

Kushal Jain



**RANK 44**

Anjali Shrotriya



**RANK 47**

Naman Kumar  
Singla



**RANK 50**

Abhijit Ray

# Outstanding performance by BYJU'S students in IAS 2020

Congratulations to our toppers

**02**

Ranks in  
Top 10

**18**

Ranks in  
Top 50

**36**

Ranks in  
Top 100



**RANK 02**

Jagrati Awasthi



**RANK 8**

Kartik Jivani



**RANK 13**

Gaurav Budania



**RANK 14**

Karishma Nair



**RANK 17**

Sarthak Agarwal



**RANK 25**

Vaibhav Rawat



**RANK 26**

Pulkit Singh



**RANK 28**

Divya Mishra



**RANK 30**

Divyanshu  
Choudhary



**RANK 31**

Megha Swaroop



**RANK 32**

Rallapalli Jagat Sai



**RANK 35**

Aparna Ramesh



**RANK 37**

Narwade Vinayak



**RANK 38**

Varuna Agarwal



**RANK 41**

Aswathy Jiji



**RANK 42**

Pooja Gupta



**RANK 46**

Jubin Mohapatra



**RANK 50**

Abhishek Shukla



# Incredible Results

## CSE 2019

4 Ranks  
in top 10

13 Ranks  
in top 50

22 Ranks  
in top 100



Rank 3  
Pratibha Verma



Rank 6  
Vishakha Yadav



Rank 8  
Abhishek Saraf



Rank 10  
Sanjita Mohapatra

## CSE 2018

11 Ranks  
in top 50

28 Ranks  
in top 100

183 Ranks  
in the final list



Rank 11  
Pujya Priyadarshni



Rank 16  
Dhodmise Trupti Ankush



Rank 21  
Rahul Jain



Rank 24  
Anuraj Jain



Rank 31  
Mainak Ghosh

## CSE 2017

5 Ranks  
in top 50

34 Ranks  
in top 100

236 Ranks  
in the final list



Rank 3  
Sachin Gupta



Rank 6  
Koya Sree Harsha



Rank 8  
Anubhav Singh



Rank 9  
Soumya Sharma



Rank 10  
Abhishek Surana

## CSE 2016

8 Ranks  
in top 50

18 Ranks  
in top 100

215 Ranks  
in the final list



Rank 2  
Anmol Sher Singh Bedi



Rank 5  
Abhilash Mishra



Rank 12  
Tejaswi Rana



Rank 30  
Prabhash Kumar



Rank 32  
Avdhesh Meena

## CSE 2015

5 Ranks  
in top 50

14 Ranks  
in top 100

162 Ranks  
in the final list



Rank 20  
Vipin Garg



Rank 24  
Khumanthem Diana Devi



Rank 25  
Chandra Mohan Garg



Rank 27  
Pulkit Garg



Rank 47  
Anshul Agarwal

## CSE 2014

6 Ranks  
in top 50

12 Ranks  
in top 100

83 Ranks  
overall selections



Rank 4  
Vandana Rao



Rank 5  
Suharsha Bhagat



Rank 16  
Ananya Das



Rank 23  
Anil Dhameliya



Rank 28  
Kushaal Yadav



Rank 39  
Vivekanand T.S

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## YEAR LONG TIMETABLE

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## Learn From Home

## YEAR LONG TIMETABLE

(Evening Batch)

**Monday to Friday | 5:00 PM to 8:30 PM**

[illegible]

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## YEAR LONG TIMETABLE

(Weekend Batch)

Saturday - 12:00 PM to 8:00 PM

Sunday - 10:00 AM to 8:00 PM

Slots	Batch 1	Batch 2	Batch 3	Batch 4	Batch 5
February (05, 06, 12, 13, 19, 20, 26 & 27) + March (05, 06 & 12)	Polity				
March (13, 19, 20, 26 & 27) + April (02, 03, 09, 10, 16 & 17)	Economics	Economics			
April (23, 24 & 30) + May (01, 07, 08, 14, 15, 21, 22 & 28)	Modern History + Post Independent	Modern History + Post Independent	Modern History + Post Independent		
May (29) + June (04, 05, 11, 12, 18, 19, 25 & 26) + July (02 & 03)	Geography	Geography	Geography	Geography	
July (10, 16, 17, 23, 24, 30 & 31) + August (06, 07, 13 & 14)	Ancient India + Medieval India + Art & Culture	Polity	Polity	Polity	Polity
August (20, 21, 27 & 28) + September (03, 04, 10, 11, 17, 18 & 24)	International Relations + World History	International Relations + World History	Economics	Economics	Economics
September (25) + October (01, 02, 08, 09, 15, 16, 22, 23, 29 & 30)	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management	Modern History + Post Independent	Modern History + Post Independent
November (05, 06, 12, 13, 19, 20, 26, 27) + December (03, 04 & 10)	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Social Issues & Social Justice + Essay + Compulsory Language Paper	Geography
December (11, 17, 18, 24 & 31) + January '23 (07, 08, 14, 15, 21 & 22)	Ethics + Governance	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT
January '23 (28 & 29) + February '23 (04, 05, 11, 12, 18, 19, 25 & 26) + March '23 (04)	Internal Security + CSAT	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture
March '23 (05, 11, 12, 18, 19, 25 & 26) + April '23 (01, 02, 08 & 09)	Focus Prelims	Focus Prelims	International Relations + World History	International Relations + World History	International Relations + World History
April '23 (15,16,23,29 & 30) + May '23 (06,07,13,14,20 & 21)		Focus Prelims	Focus Prelims	Environment & Ecology + Science & Technology + Disaster Management	Environment & Ecology + Science & Technology + Disaster Management
May '23 (27 & 28) + June '23 (17, 18, 24 & 25) + July (01, 02, 08, 09 & 15)		Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance
31st May to 11th June, 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023	PRELIMS 2023
July '23 (16, 22, 23, 29 & 30) + Aug '23 (05, 06, 12, 13, 19 & 20)					Social Issues & Social Justice + Essay + Compulsory Language Paper
1st September to 30th September, 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023	MAIN 2023



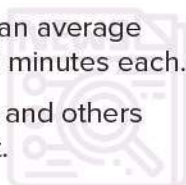


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# POLITY

## 1. What is the contention between Coal India and CCI?

**Syllabus:** GS-2, Polity

**Mains:** Contention between Coal India and CCI

**Context:** On June 15, the Supreme Court held that there was “no merit” in Coal India Ltd (CIL), a public sector undertaking, being excluded from the purview of the Competition Act. The Court was hearing the PSU’s appeal against the Competition Appellate Tribunal’s order which alleged the former of abusing its position.

### The Core Case

- The chain of events goes back to March 2017 when the Competition Commission of India (CCI) had imposed a penalty of ₹591.01 crore on CIL for “imposing unfair/discriminatory conditions in fuel supply agreements (FSAs) with the power producers for supply of non-coking coal.”
- In other words, CIL was found to be supplying lower quality of the essential resource at higher prices and placing opaque conditions in the contract about supply parameters and quality.
- The regulator contended that Coal India and its subsidiaries operated independently of market forces and enjoyed market dominance in the relevant market with respect to production and supply of non-coking coal in India.

### The PSU’s Argument

- Coal India argued that it operated with the principles of ‘common good’ and ensuring equitable distribution of the essential natural resource.
- With this objective, it was secured as a ‘monopoly’ under the Nationalisation Act, 1973 (more specifically, the Coal Mines (Nationalisation) Act, 1973).
- The PSU stated that it did not operate in the commercial sphere. It specifically pointed to 345 out of its 462 mines having suffered cumulative losses totalling ₹9,878 crore in 2012-13.

### How did the CCI respond?

- The Raghavan Committee (2020) report, put up for perusal by the respondents, had observed that state monopolies were not conducive to the best interests of the nation. They could not be allowed to operate in a state of inefficiency and should instead, operate amid competition.
- Furthermore, coal ceased to be an ‘essential commodity’ in February 2007 and the Nationalisation Act too was removed from the Ninth Schedule (laws that cannot be challenged in court) in 2017.
- Moreover, it was stated that the CIL directed 80% of its supplies to power companies. The latter would then pass power generated using coal to discoms (distribution companies), who, in turn, would supply power to the final consumer.
- The continual supply of coal, adherence to the contract, reasonableness in the rates and quality of coal also serve a common good, the respondents contended. Coal constitutes about 60 to 70% of the costs for power generation companies.
- Thus, irregular prices and supply will have a significant bearing indirectly on consumers.

### Implications of the Judgement

- According to Anshuman Sakle, partner at law-firm Khaitan & Co, the judgment reinforced the principle of “competitive neutrality” — entailing that the Competition Act equally applies to public and private sector enterprises.
- The court said there was “no merit” in the argument that the Competition Act would not apply to CIL because they are governed by the Nationalisation Act, and it cannot be reconciled with the Competition Act.

## 2. National Research Foundation

**Syllabus:** GS-2, Polity

**Mains:** National Research Foundation (NRF) Bill

**Context:** The Union Cabinet has approved the introduction of the National Research Foundation (NRF) Bill in Parliament.

### What is the NRF?

- Setting up the NRF was one of the key recommendations of the National Education Policy 2020.
- The NRF intends to act as a coordinating agency between researchers, various government bodies and industry, thus bringing industry into the mainstream of research.
- In addition to providing research grants to individuals, the NRF plans to seed, grow and facilitate research in India’s universities, especially State universities, by funding research infrastructure and researchers.

**How will it be funded?**

The NRF will operate with a budget of 1,50,000 crore for five years. of which 28%(314,000 crore) will be the government's share, and the remaining 72% (336,000 crore) will come from the private sector. The NRF draft proposes the government's share to increase eventually to 320,000 crore per year. Out of the government's share, 14,000 crore will be used from the existing Science and Engineering Research Board's budget, which will be subsumed under the NRF. Therefore, the government has earmarked an additional 310,000 crore over the next five years for the NRF.

However, this increase in the nation's gross domestic expenditure on research and development (GERD) seems too meagre, (less than 2% of GERD) especially if one compares the GDP and the comparative spending in other big economies, such as the U.S. and China. As per the last available statistics (201748), India's GERD was 11,13,825 crore. While India's GDP was 7.6 and 5.1 times smaller than that of the U.S. and China respectively, India's GERD was nearly 24 times less than both these countries during the same period. And in the last five years, that gap has further widened.

**3. The Governor's move is dangerous, unconstitutional**

**Syllabus:** GS-2, Functions and Responsibilities of the Union and the States, Issues and Challenges Pertaining to the Federal Structure, Devolution of Powers and Finances up to Local Levels and Challenges Therein.

**Mains:** Center – State relations and Role of Governor

**Context:**

- The Governor of Tamil Nadu, R.N. Ravi dismissed V. Senthil Balaji, a Minister in the Council of Ministers of Tamil Nadu, without the recommendation of the Chief Minister of the State. (This has now been kept in abeyance).
- The reasons for the dismissal were mentioned as follows: continuation of the Minister in the Council will adversely impact the due process of law, including a fair investigation that may eventually lead to the breakdown of the constitutional machinery in the State.

**What does the Constitution say on these matters?**

- The Governor's action was unconstitutional because the Governor does not have the power to dismiss a Minister without the advice of the Chief Minister.
- Article 164 of the Constitution states that the individual Ministers are appointed by the Governor only on the advice of the Chief Minister. Consequently, a minister can be removed from office only on the advice of the Chief Minister.
- Comparison of Article 164 with the Government of India Act, 1935, provides clarity on the selection and dismissal of Ministers by the Governor.
  - Section 51(1) of the Act states that the Governor has the authority to choose and summon Ministers, who hold office at the Governor's pleasure.
  - Section 51(5) further states that the Governor exercises discretion in the functions related to the selection, summoning, dismissal, and determination of salaries of Ministers.
- This discretionary power of the Governor in selecting and dismissing Ministers reflects the "hire and fire" approach that was prevalent during the colonial rule under the Government of India Act, 1935.
- However, this discretion is not applicable in the current constitutional framework where Ministers are chosen and dismissed based on the advice of the Chief Minister, as per the provisions of the Constitution.
- In the Constituent Assembly, Dr. BR Ambedkar highlighted that there is no executive work which a Governor can perform independently under the Constitution.
- The Constitution of India has incorporated the pleasure doctrine from the Government of India Act, 1935. However, it is important to note that the meaning of "pleasure" in Article 164 pertains to the formal act of issuing the order of dismissal, which can only be done by the Governor upon the advice of the Chief Minister.
- Also, the words "chosen", "dismissal" and "discretion" were omitted from Article 164 to ensure that the Constitution did not confer any discretion on the Governor to either choose or dismiss an individual Minister.

**What did the Supreme Court say in this matter?**

- In the case of Shamsher Singh and Anr vs State Of Punjab (1974), the Supreme Court ruled that the Governor's powers are limited and that he/she cannot exercise the formal constitutional powers without the advice of his Ministers.
- This was further affirmed in the case of Nabam Rebia vs Deputy Speaker where the court held that discretionary powers of the Governor are limited to those in Article 163(1).

**Conclusion:**

Critics point out that the Governor's action of dismissing the Minister without the recommendation of the Chief Minister was unconstitutional and has set a dangerous precedent. It has the potential to destabilize State governments and undermine the federal system.

**Nut Graf:** Constitutional framework has envisioned a limited role for the Governor in the parliamentary process at the State. Deviating from this could place the federal system in jeopardy as has been highlighted by the Supreme Court.

#### 4. The legality of the Delhi Ordinance

**Syllabus:** GS-2, Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein.

**Mains:** GNCTD Act and Validity of the Ordinance

##### Background:

- The President's Ordinance amending the Government of National Capital Territory of Delhi Act of 1991 (GNCTD Act) removed some services from the Delhi government's purview.
- The Supreme Court had already restored the services to the Delhi government in a landmark decision. The Ordinance invalidates the Supreme Court's decision.
- The Court had determined that the paralysis of government that would result from a lack of authority over an administration's personnel could not have been the objective of the Constitution's framers when they incorporated Article 239AA.

##### Validity of the Ordinance

- The Delhi Ordinance that overturned the court's ruling poses severe legal and constitutional concerns.
- The first concern is whether the Court's ruling can be overturned by a President-issued Ordinance or a Bill approved by Parliament.
- The Supreme Court has ruled in numerous cases that because Parliament lacks judicial authority, it cannot overturn the court's ruling without altering the decision's foundation.
- The Ordinance does not provide any justification for overturning the court's ruling.
- The Supreme Court relied on Article 239AA of the Constitution in making its decision to place the services under the control of the Delhi Assembly and the government.
- The Executive and Legislative have equal authority, hence the Government of NCTD has complete control over the provision of services.
- No one may be told by a higher authority that a court order is invalid or should not be followed.
- The Ordinance is no longer tenable in court since it offers no new justification for overturning the ruling.

##### Overriding the Chief Minister

- The National Capital Civil Services Authority, which consists of a chairman and two members, is granted authority under the Ordinance over posting, transfer, and disciplinary actions.
- The Chief Secretary and the Home Secretary are added as members, with the Chief Minister serving as chairman.
- The two officers will make all decisions about posting, transfer, disciplinary actions, etc., and the Chief Minister's opinion won't matter.
- The Delhi Lieutenant-Governor will then receive these decisions, and his or her choice will be final.

##### Other key provisions

- Another peculiar feature of this Ordinance is that if the secretary to the council of ministers believes that a cabinet decision is not in compliance with the law or the rules of procedure, he may bring it to the Lieutenant Governor's attention for his decision.
- The secretary effectively has the authority to reverse a cabinet decision. The secretary just needs to have an opinion, that's all.
- In response, he can take action by recommending the Lieutenant Governor, who has the authority to revoke the cabinet decision.
- Another clause establishes a new process for calling a special Assembly session and proroguing it.
- The government makes the choice to call a session of the legislature under the current constitutional framework. The governor then receives it and signs the summons.
- According to this new procedure, the Lieutenant Governor and the Chief Minister must first be consulted for their "opinion" before the summons to the Assembly is issued.

##### Conclusion

Supplementing the provisions does not imply creating contradictory provisions. The latest amendment does not grant the Parliament any authority to pass legislation giving the Lieutenant Governor complete authority over the management of Delhi's territory. It also does not give the President the authority to pass legislation giving officials the authority to review cabinet decisions or to remove the Chief Minister in cases involving posting, transfer, and disciplinary measures.

**Nut Graf:** The President's Promulgated Ordinance removed services from the Delhi government's purview. However, the Supreme Court has ruled in a significant number of cases that because Parliament lacks judicial authority, its judgment cannot be overturned.

## 5. Striking a blow against affirmative action in America

**Syllabus:** GS-2, Comparison of the Indian Constitutional Scheme with that of Other Countries.

**Mains:** Compare India's and USA's affirmative action

**Context:** The US Supreme Court deemed race-conscious admission policies at Harvard and UNC unconstitutional, impacting affirmative action. Its possible implication on affirmative action in India is discussed.

### USA Supreme Court Ruling: Unconstitutionality of Race-Conscious Admissions Policies

- The US Supreme Court ruled that race-conscious admission policies at Harvard and UNC are unconstitutional.
- The ruling was made on June 29, 2023, in the case of Students for Fair Admissions vs Harvard.
- Chief Justice John Roberts emphasized the need to eliminate all forms of racial discrimination.
- The Court stated that race-based affirmative action violates the Equal Protection Clause of the Fourteenth Amendment.
- According to the Court, any violation of equal protection can only be justified if the state has a compelling goal and affirmative action is necessary to achieve it.
- Harvard and UNC's objectives, such as "training future leaders," were considered commendable but vague by the Court.
- The Court reiterated the requirement for affirmative action policies to have a sunset clause, which both Harvard and UNC lacked.
- Racial stereotypes and any form of disadvantage based on race were identified as problematic by the Court.
- The ruling has significant implications for affirmative action programs across the US, making them nearly impossible to implement.
- Affirmative action programs in Texas, Michigan, and other states that consider race as a factor in college admissions are likely to be affected.

### How affirmative action in USA and India are different?

Aspect	Affirmative Action in USA	Affirmative Action in India
<b>Constitutional Basis</b>	Not explicitly mentioned in the US Constitution	Expressly allowed in the Indian Constitution
<b>Purpose</b>	Foster diversity and address historical discrimination	Address historical discrimination and promote equality
<b>Scope</b>	Primarily focused on college admissions	Extends to education and job reservations
<b>Approach to Equality</b>	Emphasizes formal equality, treating all races equally	Emphasizes substantive equality, addressing past bias
<b>Constitutionality Test</b>	Strict scrutiny: Must serve a compelling state interest	Focus on social and educational backwardness
<b>Identifying Beneficiary Classes</b>	No specific guidelines, broader interpretation	Specific categories: Scheduled Castes, Tribes, Backward Classes

### Implications for India: Contrasting Constitutional Approaches

- Indian and US Constitutions differ in their treatment of affirmative action.
- The US Constitution is silent on affirmative action, focusing on the denial of "equal protection."
- In contrast, the Indian Constitution expressly allows affirmative action in education (Article 15) and jobs (Article 16) for backward classes.
- India's courts do not debate the fundamental permissibility of affirmative action due to clear provisions in the Constitution.

**Conclusion:** The Supreme Court ruling on affirmative action in the US contrasts with India's constitutional provisions, highlighting different approaches to equality. India's substantive equality framework is unlikely to align with the US decision.

**Nut Graf:** The US Supreme Court's ruling against race-conscious admissions policies contrasts with India's constitutional provisions, highlighting differing approaches to affirmative action and equality.

## 6. India Needs a Uniform Civil Code

**Syllabus:** Indian Constitution—Historical Underpinnings, Evolution, Features, Amendments, Significant Provisions and Basic Structure.

**Mains:** Need of UCC, Its potential benefits and challenges

### About Uniform Civil Code (UCC):

- The Uniform Civil Code refers to a single set of laws that govern personal matters such as marriage, divorce, adoption, inheritance, and succession for all citizens of a country, regardless of their religious affiliation.
- The Constitutional Mandate for a Uniform Civil Code (UCC) is established under Article 44, which directs the state to strive for a common set of laws governing personal matters for all citizens, regardless of their religious affiliation. It is the responsibility of the state to enact laws in accordance with this mandate.

### Constituent Assembly debate on UCC:

- **Babasaheb Ambedkar's support:** Babasaheb Ambedkar, the chief architect of the Indian Constitution, strongly advocated for the enactment of a UCC during the Constituent Assembly debates. He emphasized the need for a UCC to ensure gender equality and eradicate social evils.
- **Alladi Krishnaswamy Ayyar's perspective:** Alladi Krishnaswamy Ayyar, a distinguished member of the Constituent Assembly, supported the UCC as a means to promote amity and arrive at a common measure of agreement on personal matters.
- **K.M. Munshi's viewpoint:** K.M. Munshi, another member of the Constituent Assembly, called for a UCC to unify the way of life in the country, transcending religious boundaries and promoting secularism.
- **Opposition and challenges:** Some members of the Constituent Assembly opposed the idea of a UCC, raising concerns about encroaching on religious jurisdiction. However, Ambedkar countered this by highlighting the need to reform the social system and eliminate inequities and discrimination.
- **Inclusion in Article 44:** Due to the lack of consensus, the Constituent Assembly included the provision for a UCC under Article 44 of the Directive Principles of State Policy. This article became the constitutional mandate for the state to enact a UCC applicable to all citizens, irrespective of their faiths, practices, and personal laws.

### The argument in favour of UCC:

- **Equality and Justice:** A UCC ensures equality and justice for all citizens by providing a common set of laws that are applicable irrespective of their religious background. It eliminates discriminatory practices and promotes a sense of fairness and equal treatment.
- **Gender Equality:** A UCC plays a crucial role in empowering women and ensuring gender equality. It eradicates discriminatory practices prevalent in personal laws, particularly in areas of marriage, divorce, inheritance, and adoption, and provides women with equal rights and opportunities.
- **National Integration:** A UCC helps in fostering national integration by promoting a shared legal framework and a sense of belonging among citizens. It reduces the divisions created by diverse personal laws and strengthens the unity and integrity of the nation.
- **Administrative Efficiency:** A UCC brings about administrative efficiency by streamlining legal processes and reducing the burden on the judicial system. It simplifies legal procedures related to marriage, divorce, and inheritance, making them more accessible and less time-consuming.

### Challenges in the path of implementing UCC:

- **Religious and Cultural Sensitivities:** One of the major challenges in implementing a UCC is navigating the religious and cultural sensitivities associated with personal laws. Different religious communities may oppose any attempts to modify or replace their existing laws, fearing a loss of identity and infringement on their religious practices.
- **Lack of Consensus:** Achieving a consensus among various stakeholders, including religious leaders, community organizations, and political parties, is a significant challenge. There are divergent opinions and interests regarding the adoption of a UCC, making it difficult to garner widespread support for its implementation.
- **Complexities of Pluralistic Society:** India's pluralistic society, with its diverse religious and cultural traditions, poses a challenge in formulating a unified code that accommodates the varied beliefs and practices of its citizens. Striking a balance between uniformity and respecting the diversity of personal laws is a complex task.

**Supreme Court Judgment on UCC:** In the Shah Bano case, the Supreme Court expressed regret that Article 44 (UCC mandate) remained unimplemented. In the **Indian Young Lawyers Association case**, the court emphasized exercising religious freedom in line with the vision of fundamental rights.

**Nut Graf:** India's diverse nation calls for the implementation of a Uniform Civil Code (UCC) in accordance with Article 44 of the Constitution. This would address inequalities, promote social harmony, ensure gender justice, and provide a unified legal framework for all citizens.



## 7. A common civil code spelling equality for every Indian

**Syllabus:** GS-2, Constitution of India —historical underpinnings, evolution, features, amendments, significant provisions and basic structure.

**Mains:** LGBT Community and Need for Uniform Civil Code in India

### Background

- Recently, India's Prime Minister expressed his strong support for the Uniform Civil Code (UCC), giving the impression that the government could give the issue priority before the 2024 Lok Sabha elections.
- This comes after the 22nd Law Commission recently decided to revisit the issue and began gathering feedback and suggestions on UCC from members of the public and recognised religious organisations.

### About UCC

- A Uniform Civil Code is envisioned as a body of rules that apply equally to all people, regardless of religion, and that regulate personal concerns such as marriage, divorce, adoption, inheritance, and succession.
- It seeks to displace the various personal laws already in force, which differ according to one's religious identity.

### Need for Uniform Civil Code in India

- **Personal Laws and Patriarchal Mindset**
  - Personal laws in India are categorically patriarchal in that they are framed in terms of the citizen's religion or social background. Therefore, a Hindu Undivided Family's "karta," or head, can only be a man.
  - Women are not afforded equal protection under the law under the current, universally patriarchal approach to personal law.
  - It is argued for skirting the current personal laws despite their unequal rights for men and women by referencing India's ancient customs and ethnic variety.
- **Matter of Diversity**
  - Reform opponents don't appear to realise they are praising diversity based on religion when they do so. It is important to remember that India was not intended to be a "federation of religions" when it was conceived, as noted by political scientist Pratap Bhanu Mehta.
  - The democratic ideals of liberty, equality, and dignity must be reflected in India's civil code.
  - It is entirely feasible to create a civil code that upholds these principles without making any mention of religious customs.
  - This would benefit from being secular, in line with the constitution of India's fundamental principles.
- **Religious Freedom**
  - Self-appointed leaders of religious organisations have rejected calls for a single civil code by claiming that it infringes on their right to practise their religion.
  - They fail to understand that religious freedom entails the right to practise any religion one chooses.
  - Indian courts have ruled that religious speech should adhere to constitutional values.
  - The practice of preventing women from entering the Sabarimala shrine was overturned by the Supreme Court of India.
- **Efficiency of Legislation**
  - The exercise of one's freedom of religion is limited to their choice of religion, not to extra-constitutional expressions of it like men's control over women's liberty.
  - This brings up the issue of whether or not laws actually advance rights.
  - A request to eliminate the acceptance of polygamy among Muslims is hardly rendered ineffective by the response to the discovery of bigamy among Hindus.
  - The appropriate approach would be to charge any Hindus who break the law.
- **Gender Discrimination**
  - It would be sufficient to seek a balance between their rights and their obligations in order to alter their personal laws in order to abolish gender discrimination.
  - They are liberated from arbitrary rule of law by democracy, which ensures their equality and liberty in all aspects of life.

### LGBT Community and UCC

- The problem of the rights of India's LGBT minority is obscured by the fixation with parity among males across the country's religion-based personal norms.
- No amount of reforming the Hindu, Muslim, or Christian personal rules will be able to reach them since these colonial-era structures have made them invisible.
- The LGBT community may be accommodated within it if there were to be a common civil code that applied to all Indians regardless of faith, gender, or sexual orientation.
- The LGBT community must be represented in the current discussion of personal law for it to be genuine because issues like civil partnerships, inheritance, and adoption affect them just as much as other Indians.

### Conclusion

If a UCC were to be put into effect, it would be able to reform the marriage age requirement, do away with bigamy, and address concerns with interfaith unions. The benefit of having a single civil code that applies to all Indians is highlighted by the combination of universally gender-unjust personal laws and an underrepresented LGBT group.

**Nut Graf:** The 22nd Law Commission has requested comments on a draft for an Indian Uniform Civil Code. This has sparked a debate that has occasionally been heated. Unaffected by gender, sexual orientation, or place of belief, there must exist a universal civil code.

### 8. Words like fake, false, misleading in IT Rules problematic

**Syllabus:** Government policies and interventions for the development of various sectors; Issues arising out of design and implementation of government intervention

**Prelims:** Information Technology Act, 2000, Fundamental Rights

**Mains:** Information Technology Amendment Rules, 2023

#### Context:

- Constitutional validity of the IT (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023 is being questioned in the Bombay High Court.

#### What are the Information Technology Amendment Rules, 2023?

- Online gaming intermediaries must make efforts to not give a platform or advertise any online game that can cause the user harm or that has not been verified as a permissible online game by an online gaming self-regulatory body.
- Online gaming intermediaries in relation to online games involving real money must display a mark of verification by the self-regulatory body on such games.
- The government can choose to **designate multiple self-regulating bodies** for the online gaming industry. These bodies will represent the industry, but they will operate independently from the members of the industry.
- **The new rules require online platforms to not post, share, or host any information that is fake, false, or misleading about the Central Government's work.**
- **This fake, false, or misleading information will be identified by the notified Fact Check Unit of the Central Government.**
- Failure to comply with the guidelines of the **Fact-Checking Unit** might result in losing the safe harbour protection which safeguards the intermediaries from litigation.

#### What is the criticism?

- The Bombay High Court has expressed concern about the authority conferred on the fact-checking unit (FCU) under the new Information Technology Rules.
- **Subjective:** The court said that the words “fake”, “false”, and “misleading” are too subjective to be used as criteria for flagging content as false.
- **Fear of excessive censorship:** The court said that it is unclear what constitutes “Government Business” and that this could lead to the censorship of legitimate content.
- The Editors Guild of India said that the government should not be the only one to decide what is fake news and highlighted its chilling effect on freedom of speech and expression. The court also expressed concern over the authority conferred on FCU.

**Way Forward:** As suggested by the Court, the Government has to clarify the terms of the new rules and provide more safeguards against the abuse of power by the FCU.

**Nut Graf:** Information Technology Amendment Rules, 2023 has significant implications on freedom of speech and the need for constructive criticism of Government policies. High Courts have highlighted the need to reduce the subjectivity in the rules for fair application.

## 9. Deliberations on to increase rate of permanent intake through Agnipath scheme

**Syllabus:** Indian Polity and Governance

**Prelims:** Agnipath Scheme, Agniveer

**Mains:** Significance of Agnipath Scheme, Government Policies

### Context:

- The government is considering increasing the intake size per batch under the Agniveer scheme.
- This is being done to make up for the shortage in personnel that has accumulated over the last three years primarily due to the pandemic (COVID -19).

### What is the Agnipath Scheme?

- The Union Cabinet had approved a new recruitment scheme for the Indian Armed Forces called the Agnipath Scheme. The youth selected under the scheme will be known as Agniveers.
- Under the scheme, young people between the ages of 17.5 and 21 (For the year 2022, the upper age limit was lowered to 23 due to the protests) were to be recruited for a four-year term.
- After four years of service, Agniveers will receive a "Seva Nidhi" package of Rs. 11.71 lakh, which will be tax-free.
- They will also be given a non-contributory life insurance cover of Rs. 48 lakh.
- Up to 25% of Agniveers will be offered the opportunity to continue in the Armed Forces on a regular basis after four years.
- The scheme is expected to bring in a younger and more technically adept workforce into the Armed Forces. The government has said that the Agnipath scheme would bring down the average age of the armed forces from 32 to 26 years over the next few years.

### Issues with the Agnipath Scheme

- The government is also considering imposing some criteria for trainees who leave during training.
- Currently, there are no restrictions or criteria, and several trainees have left midway as they received better opportunities.

*Nut graf: The Central Government is considering increasing the intake of Agniveers under the Agnipath scheme to address the shortage of armed personnel which has been developing over the last few years.*

## 10. Weakening autonomy of ED & CBI

**Syllabus:** GS-2, Statutory, Regulatory and various Quasi-judicial Bodies, Issues and Challenges Pertaining to the Federal Structure,

**Mains:** Impact on Independence of investigative agencies of service tenure extension of ED and CBI head

**Context:** Supreme Court verdict raises concerns about the institutional independence of investigative agencies in India, specifically regarding the service tenure of the head of the Enforcement Directorate (ED).

### Introduction:

- The recent verdict by the Supreme Court upholding statutory amendments made in 2021 regarding the extension of service to heads of investigative agencies has raised concerns about the protection of their institutional independence.
- While the judgment's cancellation of the two one-year extensions given to the Director of Enforcement, S.K. Mishra, is a positive development, the rest of the verdict poses a threat to the autonomy of these agencies.

### ED (Enforcement Directorate)

- The Enforcement Directorate is a specialized financial investigation agency under the Department of Revenue, Ministry of Finance, Government of India.
- It is responsible for enforcing economic laws and fighting economic crimes in India.
- The agency primarily deals with cases related to money laundering, foreign exchange violations, and economic fraud.
- The ED has the power to investigate and enforce provisions of the Prevention of Money Laundering Act (PMLA) and the Foreign Exchange Management Act (FEMA), among others.
- It works in close coordination with other law enforcement agencies, such as the Central Bureau of Investigation (CBI) and the Income Tax Department, to combat financial crimes.

**CBI (Central Bureau of Investigation):**

- The Central Bureau of Investigation is the premier investigative agency of India, established in 1941.
- It operates under the jurisdiction of the Ministry of Personnel, Public Grievances, and Pensions.
- The CBI is responsible for investigating major crimes, corruption cases, economic offences, and cases of national and international importance.
- The agency has the authority to conduct investigations and file charges against individuals and organizations involved in criminal activities.
- The CBI works closely with state police forces and other investigative agencies to maintain law and order and ensure a fair and impartial investigation process.

**Setback to Institutional Independence:**

- The Supreme Court's decision to allow multiple extensions of service undermines the cause of protecting the institutional independence of investigative agencies.
- The verdict provides a free pass to the government to weaken the autonomy of these agencies, with potential consequences for impartial investigations.

**Quashing of Extensions for S.K. Mishra:**

- The Court has ordered the Director of Enforcement, S.K. Mishra, to step down on July 31, 2023, and nullified the two one-year extensions granted to him.
- The government's decision to grant extensions beyond the age of superannuation was questioned by the Court, emphasizing the need for such extensions to be rare and exceptional.

**Endorsement of Changes Allowing Annual Extensions:**

- The judgment endorses amendments enabling annual extensions for the heads of the Central Bureau of Investigation (CBI) and the Enforcement Directorate (ED) until they complete five years in office.
- This means that an officer may receive up to three annual extensions, extending their term from two to five years.

**Implications for Independence and Accountability:**

- Critics argue that piecemeal extensions undermine the independence of the office and create a carrot-and-stick policy, potentially influencing directors to align with the government's agenda.
- The Court's rejection of the contention that the amendments go against earlier judgments mandating fixed tenures raises concerns about the insulation of directors from extraneous pressures.

**Violation of Fundamental Rights:**

- The verdict's finding that the amendments do not violate any fundamental rights is surprising, as it allows the government to control investigations based on political instructions.
- This undermines the citizens' right to equal treatment and impartial investigation, especially considering the potential misuse of government agencies against political opponents.

**Conclusion:**

- The Supreme Court's decision upholding the statutory amendments allowing multiple extensions to heads of investigative agencies presents challenges to their institutional independence.
- While the cancellation of extensions for S.K. Mishra is a positive step, the overall judgment endorses a system that compromises the autonomy of these agencies.
- It is crucial to uphold the principles of fixed tenures and insulate investigative agencies from political influence to ensure the rule of law and protect citizens' rights.

**Nut Graf:** *The recent verdict by the Supreme Court, which supports amendments permitting multiple extensions to heads of investigative agencies, poses a threat to their institutional independence and undermines the principles of the rule of law.*

**11. On ED's power to arrest and seek custody**

**Syllabus:** Statutory, regulatory and various quasi-judicial bodies.

**Mains:** Power of Enforcement Directorate (ED) to arrest and seek judicial custody

**Background**

- The Tamil Nadu Minister suffered a serious setback when the Madras High Court affirmed the legality of the Enforcement Directorate's (ED) arrest and his subsequent remand in judicial prison in a money-laundering case.
- According to a decision by the High Court, the ED is authorised to interrogate suspects in cases filed under the PMLA (Prevention of Money Laundering Act) of 2002 while they are being held at a facility.
- Even after 15 days have passed since the Minister's arrest, he can still be brought into custody.

### High Court Ruling on the Issue

- The primary issue in the case was whether the ED has the authority to request custody of someone who has been detained.
- According to the statute established by the Supreme Court in *Vijay Madanlal Choudhary* against Union of India (2022), it was contended that ED employees are not police officers.
- However, in accordance with Section 167 of the Code of Criminal Procedure (CrPC), the sessions judge remanded the Minister to judicial custody.

### Different Provisions of CrPc and PMLA

- According to Section 65 of the PMLA, the rules of the CrPC must not conflict with those of the PMLA in order for them to be applicable.
- That the word “police” must be interpreted as the Investigating Agency or the Enforcement Directorate and that Section 167 CrPC shall be applied mutatis mutandis (making necessary adjustments without changing the essence).
- Additionally, it was noted that the Court excluded ED officials from the definition of police officers solely because statements made to the former in a criminal case would be admissible in evidence before the trial court under the PMLA, whereas statements made to the latter would not.
- The judge said, “However, this observation could not be taken so far as to deny the ED the opportunity to subject the accused to custodial interrogation for obtaining vital information regarding the alleged crime.”

### SC Judgements on PMLA

- **Vijay Madanlal Choudhary versus Union of India 2022:**
  - The Supreme Court upheld a number of PMLA clauses that deal with the arrest, attachment, search, and seizure powers granted to the ED.
  - The court held that all of the PMLA's provisions had a legitimate connection to the goals that the Act aims to accomplish in order to successfully prevent money laundering.
  - The court also stated that the 2002 Act's goals and objectives included steps to prevent money laundering in addition to punishing those who violate it.
- **P. Chidambaram versus Directorate of Enforcement 2019:**
  - The Supreme Court granted custody to the ED after rejecting a request for anticipatory bail related to a money-laundering allegation.
  - The court argued that granting pre-arrest bail would thwart the need for a “systematic and analysed” inquiry into a money-laundering case.
  - The court also cautioned that it must only use its inherent powers under Section 482 of the CrPC to intervene in an investigation into a cognisable offence if it is convinced that the investigating officer's power is being abused or there is an abuse of power and non-compliance with the provisions of the CrPC.

### Conclusion

The Supreme Court granted custody to the ED after rejecting a request for anticipatory bail related to a money laundering charge. The courts also ruled that as long as the investigation does not break any laws, it is not the role of the court to supervise the process. The investigation's direction must be left up to the investigating agency's choice. On matters of “justice, fair play, good conscience, and the fundamental principles of criminal jurisprudence,” the accused and the complainant reached an agreement.

**Nut Graf:** The Madras High Court decided that the central agency has the right to request the custody of the Tamil Nadu Minister in the money laundering case involving the alleged cash-for-jobs scheme, resolving disagreements surrounding the Enforcement Directorate's authority to do so.

## 12. An unacceptable verdict in the constitutional sense

**Syllabus:** Organization and Functioning of the Executive and the Judiciary

**Mains:** Issue of live-in relationship and protection of liberty

### Context:

- The Allahabad High Court recently issued a judgment denying protection to an inter-faith couple in a live-in relationship.
- The verdict disregards constitutional principles of individual autonomy and personal liberty, favouring conventional social morality instead.

### Supreme Court Verdicts on Fundamental Rights:

- Supreme Court judgments on fundamental rights are binding on all courts in the country.
- The top court's role is to engage in constitutional adjudication, not to encourage or discourage social practices or individual conduct.



**Upholding Personal Liberty:**

- Previous Supreme Court judgments, cited in the Allahabad verdict, upheld personal liberty.
- These judgments recognized individuals' right to choose their partners and engage in consensual relationships.

**Neglecting Constitutional Morality:**

- The High Court focused on conventional social morality rather than upholding constitutional principles.
- It failed to recognize the Supreme Court's repeated affirmations of the importance of constitutional morality in personal relations.

**Disregarding Supreme Court Precedents:**

- The High Court disregarded several Supreme Court judgments on live-in relationships, despite citing them.
- It provided untenable reasons for rejecting the precedential value of these top court verdicts.

**Irrelevant Consideration of Personal Laws on Marriage:**

- The High Court exceeded its jurisdiction by relying on personal laws on marriage, which were irrelevant to the case.
- It made an unnecessary reference to Section 125 of the Criminal Procedure Code (CrPC) concerning maintenance to wives, despite the case not involving marriage.

**Inclination towards Orthodoxy:**

- The judgment reveals a clear inclination towards social orthodoxy and religious revivalism.
- The court acted as a theological body, ignoring the principles of individual liberty and autonomy within its writ jurisdiction.

**Misinterpretation of Supreme Court Observations:**

- The Allahabad High Court wrongly claimed that Supreme Court observations were specific to the facts of the cases.
- The court should not have disregarded established propositions of law laid down by the Supreme Court on matters of fundamental rights.

**Failure to Uphold Fundamental Rights:**

- The petitioners sought protection from police harassment, asserting their right to be free from torture.
- The High Court should have focused on endorsing the couple's fundamental rights instead of conducting an irrelevant analysis of personal laws.

**Conclusion:** The Allahabad High Court's judgment represents a case of judicial indiscipline. It mistakenly prioritized the moral lessons of personal laws over constitutional tenets. The Supreme Court is expected to rectify this adjudicatory mishap promptly.

**Nut Graf:** The recent judgment by the Allahabad High Court, which denied protection to an inter-faith couple in a live-in relationship, disregards constitutional principles and Supreme Court precedents, highlighting a concerning inclination towards social orthodoxy.

### 13. Scientists need free speech

**Syllabus:** Indian Constitution-Features, Significant Provisions

**Mains:** Do Scientists have freedom of speech and Expression? Importance of Inter-disciplinary approach

**Context:**

- Last week, over 500 scientists and academics criticized the Indian Institute of Science (IISc) for prohibiting a discussion on the Unlawful Activities Prevention Act.
- The Indian Institute of Science, Education and Research (IISER) at Mohali, Punjab, responded by issuing a show cause notice to two faculty members who had signed the letter.

**Scientists' Constitutional Right to Participate in Social Discussions:**

- Scientific research institutes are part of society, and their members have the same constitutional right to engage in social discussions as others.
- These institutions rely on public support, which entails the responsibility to educate and express opinions on matters of public interest.
- Failing to stand up for justice during times of social turmoil would be an abdication of this responsibility.

**Science and its Multiple Links:**

- Restricting scientists to only science and excluding social questions is an artificial approach.
- Various scientific fields naturally intersect with broader issues, shaping the scientific focus and raising questions of inequality, justice, and ethics.
- Fields like climate change, energy policy, and artificial intelligence demonstrate the interconnectedness of science and social contexts.

**Scientific Advances, Social Progress, and Responsibility:**

- Generous public support for scientific research, such as the national quantum mission, is based on the expectation of public benefit.
- However, scientific and technological advances can either contribute to social progress or facilitate oppression and inequality.
- Scientists need to involve themselves in decisions regarding the deployment of science to prevent the complete relinquishment of this responsibility to external forces.

**Engaging with Social Issues:**

- India has a rich tradition of scientists who have engaged with social issues, including the people's science movements.
- Examples like the Kerala Sasthra Sahithya Parishad and the All India Peoples Science Network highlight the contributions of scientists to social benefit.

**Pressures and Concerns of Scientific Administrators:**

- Scientific administrators are often uncomfortable with political discussions within their institutions due to fears of government backlash.
- Some administrators invoke rules designed for government bureaucrats, such as the Central Civil Service (Conduct) Rules, to limit discussions.

**Conclusion:** Encouraging social and political discussions in scientific research institutions is vital for scientists to fulfil their responsibility to society. By recognizing the interconnectedness of science and broader issues, scientists can contribute to social progress and prevent the misuse of scientific advancements.

**Nut Graf:** Amidst criticism faced by Indian research institutes for restricting discussions, it is crucial to recognize that scientists' participation in social and political debates is not only their right but also necessary for informed decision-making and societal progress.

**14. SC collegium's quiet transparency is driving change**

**Syllabus:** Structure, organisation, and functioning of the Executive and the Judiciary.

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

**Prelims:** About Collegium and appointment of judges in High Courts and Supreme Court

**Context:**

The Supreme Court Collegium, under Chief Justice of India D.Y. Chandrachud, has implemented transparent and merit-based reforms in the appointment process of judges to constitutional courts.

**Introduction:**

- The Supreme Court Collegium, under Chief Justice of India D.Y. Chandrachud, has implemented significant reforms in the appointment process of judges to constitutional courts.
- The collegium focuses on merit and seniority while ensuring transparency and meaningful discussion.
- This approach has garnered government support and streamlined the appointment process.

**Embracing Transparency:**

- The collegium's resolutions now exhibit transparency by publicly revealing the prerequisites for candidates being considered for appointments to both the Supreme Court and High Courts.
- Recommendations made by the collegium are now promptly notified by the government.
- The change of guard in the Law Ministry has led to a decline in criticism of the collegium system's opacity.

**Quality of Judgments:**

- The collegium prioritises the quality of candidates' judgments.
- Candidates' judgments are circulated in advance among collegium members, facilitating thorough assessment.
- The Centre for Research & Planning of the court provides relevant background material to assist the collegium in its decision-making process.
- A Judgment Evaluation Committee meticulously examines candidates' judicial work, grading judgments, with outstanding judgments receiving recognition.

**Criteria for Selection to Supreme Court:**

- The collegium considers three basic criteria while recommending appointments to the Supreme Court:
  - The seniority of Chief Justices and senior puisne Judges in their respective original High Courts, as well as the cumulative seniority of High Court judges as a whole.
  - Merit, performance, and integrity of the judges under consideration.
  - Ensuring diversity and inclusion in the Supreme Court, encompassing representation from underrepresented High Courts, marginalised and backward segments of society, gender diversity, and minorities.

**Selection of Chief Justices:**

- Similar objective criteria are followed when proposing Chief Justices for various High Courts.
- Inter-se seniority of puisne Judges within their own High Courts is considered.
- The Memorandum of Procedure (MoP) governs the selection process, emphasising seniority subject to merit and integrity.
- The collegium ensures fair representation of various High Courts in the appointment of Chief Justices.

**Promoting Gender Diversity:**

- The collegium's recommendation to appoint Justice Sunita Agarwal as the Chief Justice of the High Court of Gujarat exemplifies their dedication to promoting gender diversity.
- This appointment aims to address the absence of women Chief Justices in High Courts, supporting the goal of inclusivity.

**Objective Decisions for Better Administration of Justice:**

- The collegium's decision not to entertain the request of three High Court judges against their out-of-state transfers highlights its commitment to better administration of justice.
- The collegium justified the transfers as necessary for enhanced justice administration.
- The government promptly notified the transfers, supporting the collegium's decision.

**Nut Graf:** The Supreme Court Collegium, led by Chief Justice D.Y. Chandrachud, has streamlined the appointment process, emphasising merit and seniority while promoting transparency and meaningful discussion. The collegium's focus on the quality of judgments, diversity, and objective criteria marks a significant shift in judicial appointments.

**15. On Rahul Gandhi's conviction**

**Syllabus:** Parliament and State legislatures—structure, functioning, conduct of business, powers & privileges and issues arising out of these.

**Mains:** Defamation issue and disqualification of MP

**Context:**

- The Gujarat High Court's ruling on a MP's criminal revision plea raises important issues regarding the legislation governing electoral representation, disqualification, and defamation.
- The Sessions Court's rejection to postpone the conviction order in accordance with Section 389 of the Criminal Procedure Code (CrPC) was being challenged in a case before the High Court.

**Issue of Speech and Reputation**

- Defamation was made one of the exceptions to free expression in the Indian Constitution under Article 19(2), which was subsequently recognised by Sections 499 and 500 of the Indian Penal Code (IPC).
- When an imputation is made with the intent to injure, or with reasonable grounds to think that it would harm a person's reputation, one is charged with criminal defamation.
- Actual hurt or suffering caused is not required to commit an offence in criminal defamation because intention or knowledge is sufficient.
- The Magistrate Court found the defendants guilty and sentenced them to the harshest punishment available because it believed that people with the last name Modi or who are part of the Modi community belong to an identifiable class.

**Earlier judgments on defamation**

- **Supreme Court in Sahib Singh Mehra versus State of Uttar Pradesh (1965):** The Supreme Court used the criteria of identifiability and definiteness in this case to determine whether or not there was a "collection of persons" involved.
- **Allahabad High Court in Tek Chand Gupta versus R. K. Karanjia and Ors. (1967):** According to this case, having a constitution for itself identifies it as an association or group of people that is not illimitable and unidentified.
- **Supreme Court in G. Narasimhan versus T. V. Chokkappa (1972):** According to the court's ruling, the conference was not a distinct and recognisably identifiable group that could be referred to as a "collection of persons."

**Refusal of Stay and Purity in Politics**

- The Gujarat High Court's unambiguous denial of a request for a stay of the conviction was likewise justified by the urgent necessity for political purity.
- The court ruled that the second petitioner's case fell under the category of unusual and exceptional circumstances after taking into account a variety of legal, extralegal, and other conditions as well as unique aspects coming out of this case. Not postponing the conviction would have severe consequences.
- In this case, the sentence was ten years of solitary confinement, although the sentence in the defamation case was only two years.

**Relevant Precedents**

- The parliamentary membership is undetermined due to the conflicting opinions of the Sessions Court and Gujarat High Court.
- It is crucial to note that the Supreme Court has carefully shaped the legal framework surrounding the suspension of a conviction order in a number of decisions.
- As required by Section 389(1), the Appellate Court must support its order with reasons that will be recorded in writing, therefore it is necessary to clearly draw its attention to the consequence that is likely to allow it to apply its thoughts to the matter.

**Conclusion**

Even the Representation of People Act, 1951 distinguished the different levels of criminality that resulted in disqualification by categorising several types of offences. According to reports, the disqualified MP has appealed the Gujarat High Court's decision in the revision case to the Supreme Court. It is up to the Supreme Court to use its broad authority to carry out substantive justice under Article 136 to grant indulgence to delay the conviction in this particular case of defamation and disqualification by combining the legal principles that have been stated by the Supreme Court in other judgements.

**Nut Graf:** *The implication of a six-year ban from running for office, which will have serious consequences. Defamation is only considered a crime when the maximum sentence applies, so it may warrant special consideration.*

**16. Risk of small states' heavy reliance on Union govt**

**Syllabus:** Issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein.

**Mains:** Challenges to the federal structure, devolution of powers, governance

**Prelims:** About Federal structure, fiscal policy and fiscal transfers from union government to state governments.

**Context:**

The article focuses on the fiscal challenges faced by small states in India and their heavy reliance on the Union government for revenue.

**Introduction**

- Insufficient discussion on the fiscal position of small States in India.
- Distinctive characteristics of small States limit revenue mobilisation.
- Dependence on the Union government creates vulnerabilities for both States and the Union.

**Revenue Receipts and Dependence**

- Total revenue receipts of small States have increased, primarily driven by Union transfers.
- Mizoram, Sikkim, and Tripura show slower revenue receipt growth compared to State GSDP, indicating limited fiscal space.
- Union transfers constitute a significant share of revenue receipts for small States, with the Union's share exceeding 60% in all states except Goa.

**Challenges in Revenue Mobilisation**

- The limited capacity of small States to raise their own taxes, as reflected in the OTR ((own tax revenue)-GSDP (gross state domestic product) ratio).
- Economic restrictions hinder tax revenue generation, resulting in heavy reliance on the Union government.
- Small States perform better in mobilising ONTR (own non tax revenue), with six states surpassing the all-State average.

**Vulnerabilities and Implications**

- Dependence on the Union government relies on political goodwill and can lead to sudden declines in transfers.
- Tied funds restrict fiscal freedom and flexibility in expenditure for small States.
- Lack of own revenues weakens State capacity and impacts the delivery of social and economic services, critical for states sharing international borders.

**Mitigating Vulnerabilities and Improving Revenue Generation**

- Small States need to identify new sources of tax revenue and leverage existing ones effectively.
- Examples of liquor prohibition policies and land transactions as potential revenue sources.
- Improved tax administration, collection efficiency, and revision of charges and rates for services.
- Revitalising and corporatizing state public sector enterprises to enhance revenue performance.

**Nut Graf:** *Despite distinctive characteristics limiting revenue mobilisation, small states heavily depend on the Union government, creating vulnerabilities. Improving revenue generation and reducing dependence are crucial for their financial stability.*

## 17. National Commission for Women and Manipur crisis

**Syllabus:** Statutory, Regulatory and various Quasi-judicial Bodies.

**Prelims:** National Commission for Women, Composition and Mandate

**Mains:** Role of NCW in addressing the issues of Women

### Context:

The National Commission for Women (NCW) was informed about an incident in Manipur where women were paraded naked and brutally assaulted on June 12th, more than a month before a video of the incident was shared on social media on July 19th.

### National Commission for Women:

The National Commission for Women was set up as a statutory body in January 1992 under the National Commission for Women Act, 1990.

### Members:

The National Commission for Women will be constituted by the Central Government and will consist of a Chairperson and five members. The members will be nominated by the Central Government and will have experience in various fields such as law, trade unionism, industry, social welfare, and administration, and at least one member each will be from the Scheduled Castes and Scheduled Tribes.

### Functions:

- Investigate and examine all matters relating to the safeguards provided for women under the Constitution and other laws.
- Take up cases of violation of provisions of the Constitution and other laws relating to women with appropriate authorities.
- Look into complaints and take suo moto notice of matters relating to violation of women's rights, non-implementation of laws, non-compliance of policy decisions, guidelines, or instructions, and take up the issues with appropriate authorities.
- Inspect jails, remand home, women's institutions, or other places of custody where women are kept as prisoners or otherwise and take up with the authorities concerned for remedial action if found necessary.

### Issues:

- It has no actual legislative powers. It only has the powers to suggest amendments and submit reports which are not obligatory on a state or Union Government.
- It does not have the power to choose its own members. The power of selecting members is vested with the Union Government and the nature of the country's volatile political scenario tends the commission to be politicized.
- It is reliant on financial assistance from the Union Government and this could compromise the independence of the Commission.

**Nut Graf:** The NCW has the functions of investigating and examining all matters relating to women's rights and taking up matters with appropriate authorities. However, the Commission lacks actual legislative powers, is politicized, and reliant on financial assistance from the Union Government, which may compromise its independence.

## 18. An Internet ban will not restore peace in Manipur

### Context:

- The state of Manipur has been experiencing a period of violent unrest since May 3, 2023. The issue got nationwide attention on July 19 when a video clip depicting sexual violence committed by a mob in Manipur went viral on social media.

### Role of Internet Shutdown

- Approximately 2.2 million people in Manipur are connected to the internet (Data from Telecom Regulatory Authority of India). Among this, the internet is accessed primarily through smartphones.
- The orders were issued by the Commissioner of Manipur under the **Temporary Suspension of Telecom Services Rules, 2017**. The Central government, state government and districts are authorized to issue orders under these rules in case of public emergencies.
- Critics point out that the authorities used vague language to justify the internet shutdowns without any supporting data to show that the internet shutdown has prevented violence.
- This is also in violation of the guidelines laid down by the Supreme Court in Anuradha Bhasin vs Union of India case.
- Reports have surfaced of people in Manipur facing hardships due to the shutdown, such as students running out of money and residents being unable to apply for evacuation to relief camps.



**Judicial Response**

- Petitions have been filed in the High Court of Manipur challenging the internet shutdown orders.
- The High Court of Manipur has ordered a partial restoration of internet services, but it has not ruled on the legality of the shutdown orders. This is because the court wants to first assess whether it is possible to provide limited usage of internet services to the public.
- The Supreme Court's judgment in the Anuradha Bhasin case did not result in the restoration of internet access in any case. The court only asked the government to review all internet shutdown orders. The court's directions for transparency have not been implemented yet.
- The Court's decision also carved out greater flexibility for "limited internet shutdowns." This means that the government can now restrict access to the internet to only government websites, localized/limited e-banking facilities, hospitals services, and other essential services.

**Impact of High Court's Orders**

- The High Court of Manipur has allowed provisional access to the internet for leased lines, wired lines, and mobile internet with certain restrictions. Leased lines are typically used by public departments and corporate offices while the Wired line services require signed undertakings and ban on social media, VPN etc.

**Way forward:**

- The limited access shows that the ban on complete internet access is still continuing in Manipur and the Supreme court has not yet adjudicated on the matter.
- In an internet ban, misinformation spreads instead of decreasing.
- The press report shows that false information led to sexual violence against Kuki-Zo women.
- Information flow is crucial to hold the State and central governments accountable for ensuring truth, justice, and reconciliation.
- Updating and reforming the guidelines issued in the Anuradha Basin case might be a good starting point to ensure accountability from the government.

**Nut Graf:** *The state of Manipur has been experiencing a period of violent unrest since May 3, 2023. The internet has been shut down in the state since then, and critics say that this has only served to spread misinformation and make it harder for people to access essential services. The High Court of Manipur has ordered a partial restoration of internet services, but the Supreme Court needs to step in to ensure justice and accountability.*

**The right approach**

**Syllabus:** Structure, Organization and Functioning of the Executive and the Judiciary

**Prelims:** Code of Criminal Procedure (CrPC), Bail procedure

**Mains:** Criminal Justice Reforms, Fundamental Rights

**Context:** Supreme Court grants bail to Teesta Setalvad

**Observations of the Supreme court :**

- Courts should use common sense and fairness when considering bail and should not keep someone in jail simply because the police oppose them.
- The Court found that there was no need for Ms. Setalvad to be in judicial custody, as the case depends mainly on documentary evidence that is part of the charge sheet.
- The Court observed that an order of bail should be the norm unless there is a chance of the accused escaping trial, tampering with evidence etc.
- The gravity of the offense should not be the sole consideration and is only one of the factors in considering the bail.

**Criminal Justice Data:**

- Currently in India, 77% of the incarcerated population comprises undertrials – which means they haven't been convicted of a crime.
- The period of detention of undertrials is also increasing, indicating that trials are taking longer or bail is being granted in less cases.

**The Code of Criminal Procedure (CrPC) on Bail:**

- The Code of Criminal Procedure (CrPC) does not define "bail" but categorizes offenses under the Indian Penal Code (IPC) as bailable or non-bailable.
- The CrPC empowers magistrates to grant bail for bailable offenses as a matter of right, involving release on a bail bond without or with security. Non-bailable offenses are cognizable, allowing police officers to arrest without a warrant, and a magistrate will determine if the accused is fit for release on bail.

### Supreme Court's earlier view on Bail reforms:

- The Court emphasized that arrest is a draconian measure that should be used sparingly, particularly for non-cognizable offenses (offenses for which the police have no authority to arrest without a warrant).
- **Violation of Fundamental Rights:** The Court underlined the importance of uniformity and certainty in the decisions of the court. Lack of uniformity could lead to violation of Articles 14 and 15 of the Constitution of India.
- **Need to restrict indiscriminate arrests:** The Court noted that the culture of too many arrests, especially for non-cognizable offenses, is unwarranted and emphasized that even for cognizable offenses, arrest is not mandatory.
- **Reduced insistence on bail applications:** The Court held that lower courts must consider granting bail routinely and insistence on bail applications could be reduced.
- **Separate law on Bail:** The Court also noted that a separate law for bail is necessary to address the issue of indiscriminate arrests and to ensure that the accused are not treated differently by the same or different courts. The Court emphasized that the Bail Act of the United Kingdom, 1976, provides a good model for bail reform in India.

**Case Study:** The Bail Act of the United Kingdom, 1976 grants a “general right” to bail presuming bail unless specified. To reject bail, the prosecution must show grounds for believing the defendant would not surrender, commit an offense, or obstruct justice.

**Nut Graf:** The Supreme Court has granted bail to Teesta Setalvad, emphasizing the need for fairness and justice in bail decisions. Reforms in the criminal justice system should include a uniform approach to bail decisions and reducing the insistence on bail applications. The case study of the Bail Act of the United Kingdom, 1976, provides a good model for bail reform in India.

## 20. Charting the path for the Sixteenth Finance Commission

**Syllabus:** Powers, Functions & Responsibilities of various constitutional bodies

**Mains:** Various issues associated with the distribution of tax revenue by the Finance Commission

### Context:

- Time has come to establish the 16th Finance Commission.

### Background:

- 15th FC was set up in 2017.
- Changes since then: COVID Pandemic and Geopolitical Challenges
- Combined Government debt- GDP Ratio close to 90% at the end of 2020-21.
- 14th FC raised share of states in divisible pool of taxes to 42% (revised to 41% when states reduced to 28).
- There may not be a strong case for recommending any further increase in the States' share of central taxes in view of the Centre's large fiscal imbalances. But need to re-examine shares of surcharges and cesses.
- During 2020-21 to 2023-24 (BE), the effective share of States in the Centre's gross tax revenues (GTR) averaged close to 31%. (corresponding share of nearly 35% during 2015-16 to 2019-20.)
- Inordinate increase in the share of cesses and surcharges to 18.5% of the Centre's GTR during 2020-21 to 2023-24 (BE) from 12.8% during 2015-16 to 2019-20. This requires scrutiny by 16th FC.

### About the Divisible Pool

- The share of individual States in the Centre's divisible pool of taxes is determined by a set of indicators that includes population, per capita income, area, and incentive-related factors such as forest cover and demographic change.
- For per capita income, the indicator with 45% weight, it is the distance of a State's per capita income from a benchmark, usually kept at the average per capita income of the top three States.
- Why we need to transfer higher funds to lower-income states: Many of them are expected to provide a relatively larger share of the 'demographic dividend' to India in future provided attention is paid to the educational and health needs of their populations.
- Article recommends: It may be useful to freeze the weight to distance criterion at the current level or even reduce it to 40%, but some upward adjustment in the resources transferred to the poorer States may be done through grants.

### Other Recommendations?

- The debt-GDP ratio for the combined account of central and State governments had peaked at 89.8% in 2020-21, of which the Centre's debt-GDP ratio excluding any on-lending to the States amounted to 58.7%, and that of States was 31%.
- Still considerably above the corresponding Fiscal Responsibility and Budget Management (FRBM) norms of 40% and 20%, as in the 2018 amendment.
- In 2020-21, the Centre's fiscal deficit had shot up to 9.2% of GDP and that of States to 4.1%.
- In view of the large departures of the debt and fiscal deficit to GDP ratios from their corresponding norms and the reduction of the States' debt-GDP target to 20%, the 2018 amendment to the Centre's FRBM needs to be re-examined.

- A few State governments appear to have relatively larger debt and fiscal deficit numbers relative to their GSDPs. In this context, two concerns appear: these relate to the proliferation of subsidies and the re-introduction of the old pension scheme in the States without a clear identification of the sources of financing and the resultant fiscal burdens. Often, such subsidies are sought to be financed by raising the fiscal deficit.
- Sixteenth Finance Commission should examine the subject of non-merit subsidies in detail.
- Setting up of a LOAN COUNCIL (recommended by 12th FC) to oversee the loan magnitudes and profiles of the central and State governments.
- The Finance Commission should be strict about States maintaining fiscal deficit within limits. Carrot and Stick Policy.

**About Finance Commission:**

- Set up under Article 280 every 5 years.
- To make recommendations on the distribution of financial resources between the Union and the states.
- Vertical and Horizontal Devolution; Grant-in-aids by Centre to States.
- Recommendations are advisory and not binding.
- Union government notifies acceptance of recommendations via Presidential order.
- They also need to table in the Parliament an explanatory memorandum regarding actions taken and deviations made from the recommendations.

**Nut Graf:** The upcoming Finance Commission will determine the distribution of tax revenue between the central government and states, facing challenges such as population figures, deficit grants, and wealth disparities. Guidelines for cesses, surcharges, and freebie spending should be established for fiscal balance and cooperation.

# ECONOMY

## 1. Why are tomato prices rising?

**Syllabus:** GS 3-Economy, Inflation

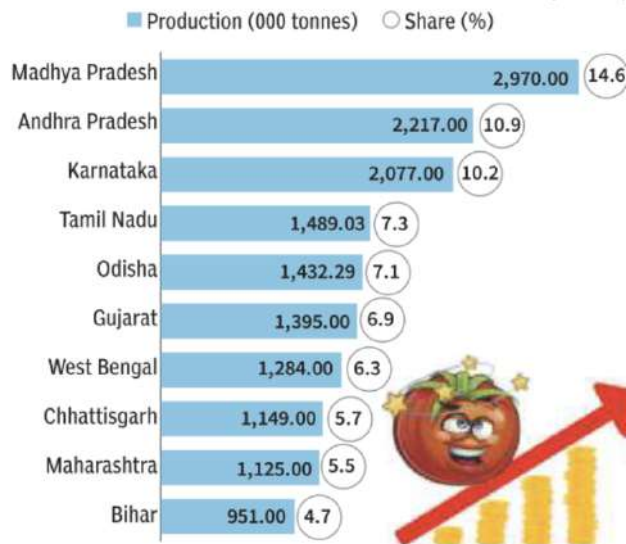
**Prelims:** Inflation

**Context:** The price of tomatoes doubled from ₹20 to ₹40 per kg in June, ruling at ₹100 kg in July

### Lack of processing infrastructure

#### Top 10 tomato-producing States

(2021-22)



Source: Business Line

#### Basics

- Tomato is grown during kharif and rabi season
- The rabi crop
  - It is mainly grown mainly in the parts of Maharashtra, Karnataka and Andhra Pradesh
  - This crop comes to the market between March and August.
  - Around 5 lakh hectares
- Kharif crop
  - After the month of august, the market is supplied by the kharif crop in Uttar Pradesh, Maharashtra, and from other states
  - 8 to 9 lakh hectares

#### Causes

- There is a delayed monsoon and higher than normal temperature for the last two months in key producing states (Karnataka, Maharashtra) have pushed up the prices of tomato sharply
- Now some of these regions are under heavy rainfall which has disrupted the supply
- In South India, which saw excessive heat, the crop was devastated by the leaf curl virus. In Maharashtra, the absence of winter and excessive heat in March-April saw attacks of the cucumber virus
- Farmers who had standing crops abandoned them, and those who were planning to plant a second crop in March did not do so. The present price rise is the result of this double whammy

#### Impact

- Will affect the common man
- Will lead to a rise in the inflation and this will create problems for the central banker
- Will also affect the hospitality industry

#### Measures

- Govt is selling tomato at discounted prices
- Tomato Grand Challenge Hackathon
- Need to promote more processing

## 2. Open Market Sale Scheme (OMSS)

**Syllabus:** GS 3-Economy, Agriculture, Inflation

**Prelims:** Open Market Sale Scheme (OMSS)

**Context:** Govt to sell wheat and rice in open market to control prices

### Objectives

- To enhance the supply of food grains during the lean season and deficit regions
- To moderate the open market prices
- To offload the excess stocks
- To reduce the carrying cost of food grains

### Recent Measures taken

- Each of the bidder is allowed to bid for 10 to 100 tonnes (earlier it was kept at 3000 tonnes per bid)
- Centre has prohibited participation of states in the OMSS
- Govt has decided to offload the 1.5 mt of wheat under OMSS

### Why such measures have been taken?

- The food grain production has been recently been affected due to untimely rains, rise in temperature in the March
- Food grain production has been affected
- The stocks available with FCI should be used judiciously so that overall stock position is maintained at a comfortable level
- Hence the states have been excluded from the OMSS (D) as per the revised policy
- Smaller buyers will also help in breaking the monopoly of bulk buyers

## 3. Govt reduces the subsidy on the FAME Scheme

**Syllabus:** GS 3-Economy, Industries

**Prelims:** FAME scheme

**Context:** The Ministry of Heavy Industries (MHI) has reduced the number of eligible two-wheelers under the Faster Adoption and Manufacturing of Electric (and hybrid) vehicles in India phase-II (FAME-II) scheme from approximately 989,000 to just under 564,000.

- Additionally, starting June 1st, the government will substantially decrease the subsidy provided to customers purchasing electric two-wheelers under the FAME-II scheme

### Details:

- Centre has decided to cut the subsidy on electric 2Ws from ₹ 15000/kWh to ₹ 10000/kWh under FAME-II
- Since the launch around 975000 E2Ws have been sold and of these, around 65% have been sold in this fiscal
- The existing maximum subsidy cap of 40% of the ex-factory price of the vehicle has also been reduced to 10%

**SUBSIDY AT PRESENT**

**₹15,000 per kWh** with a maximum cap of **40 per cent** of the ex-factory price of the vehicle

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**₹60,000:** Maximum subsidy that can be claimed

**SUBSIDY AFTER REVISION**

**₹10,000 per kWh** with a maximum cap of **15 per cent** of the ex-factory price of the vehicle

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**₹22,500:** Maximum subsidy that can be claimed

Note: \*Maximum ex-factory price is ₹1.5 lakh

### Why it has been done?

- The govt has allocated ₹ 2000 Cr and more than 80% has been used up
- The scheme has a deadline of FY24 so the manufacturers and consumers must get used to higher prices



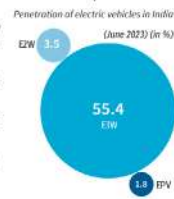
## Electric 2-wheelers hit a speed bump

The electric vehicle market in India has been booming over the last few years, but the 2-wheeler market penetration slowed down in June 2023 due to pre-buying ahead of price hikes post the FAME 2 subsidy cut. Meanwhile, electric 3-wheelers and 4-wheelers' penetration declined marginally. Here is an overview of the State-wise penetration and market leaders among electric 2-, 3- and 4-wheeler companies.

### Electric 2-wheeler penetration drops in June 2023

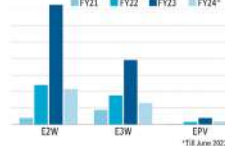


### Electric 3-wheelers have the maximum penetration



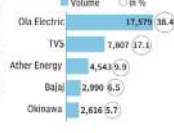
### More takers for E2Ws

Sales volume of electric vehicles



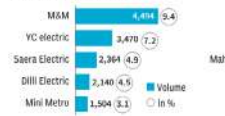
### Ola Electric has the highest market share in E2W segment

E2W market share in June 2023



### M&M has the highest market share in E3W category

E3W market share in June 2023



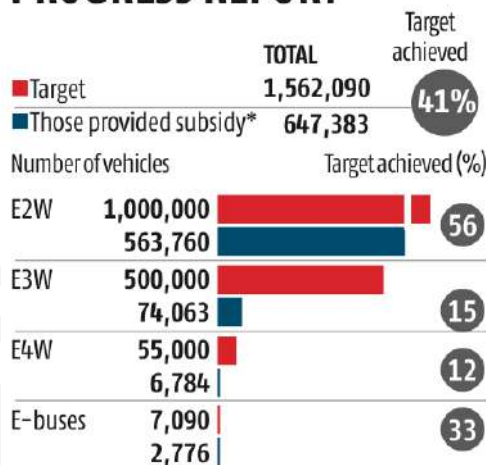
### Tata Motors leads in EPVs

EPV market share in June 2023



Source: BNP Paribas. Note: E2W: Electric 2-wheelers, E3W: Electric 3-wheelers, EPV: Electric passenger vehicles

## FAME II SCHEME PROGRESS REPORT



Note: \*Include claims under process; data as of April 30  
 E2W: Electric two-wheelers; E3W: Electric three-wheelers; E4W: Electric four-wheelers  
 Source: Ministry of Heavy Industries

### In favour of subsidies

- Make the products cheaper
- Achieve the net zero emission target
- Reduce the dependence on imported fuels

### Against the subsidies

- Dependence on the assistance will be high, which might make companies more complacent
- Subsidy burden on the govt
- Traditional two wheelers are threatened by the subsidies to EVs

#### 4. Greedflation

**Syllabus:** GS 3-Economy, Inflation

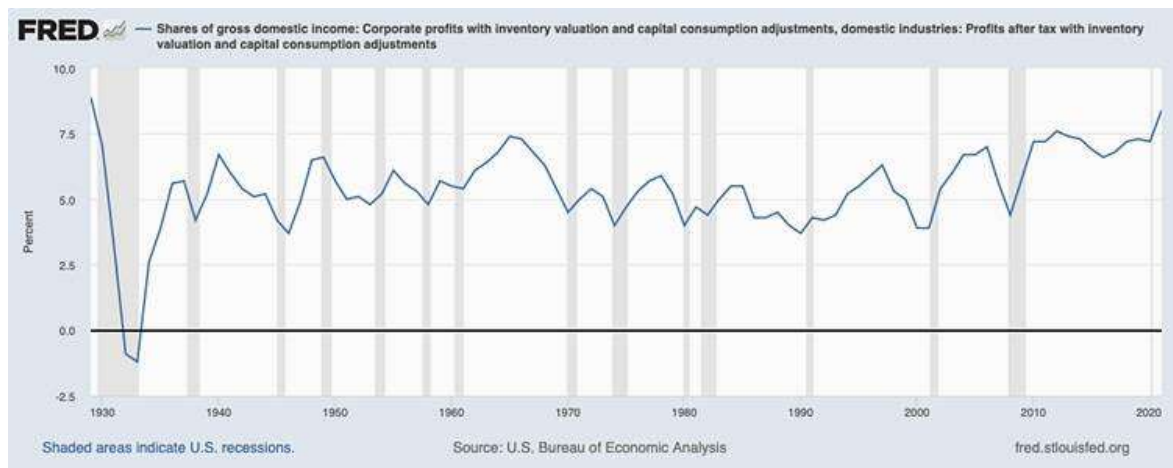
**Prelims:** Greedflation

**Context:** According to various studies, post pandemic price rise is driven by this phenomena.

##### What is Greedflation?

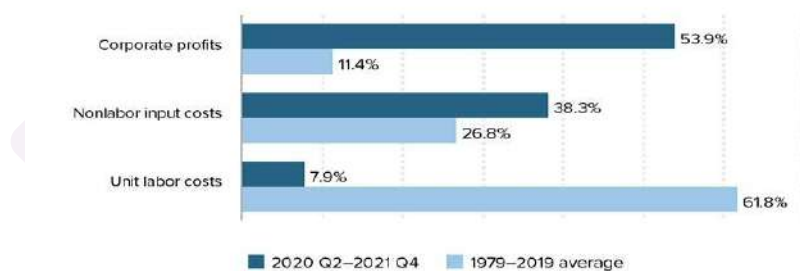
- Inflation is caused due to: demand-pull or Cost-push.
- Greedflation: Rise in price as a result of Profit maximization efforts of corporates (corporate greed).
- The Selling Price or the mark-up price of products is put way above the price require to cover the increased price of inputs and raw materials.
- $\text{Selling Price} = \text{Labour Cost} + \text{Non-labour costs} + \text{markup profits}$

##### What is the Proof?



- In the USA, corporate profits (as a proportion of the national income) have risen to the highest level in the past 100 years.

##### Normal and recent contributions to growth in unit prices in the nonfinancial corporate sector



Source: Author's analysis of data from Table 1.15 from the National Income and Product Accounts (NIPA) of the Bureau of Economic Analysis (BEA).

Economic Policy Institute

**Source: Author's analysis of data from table 1.15 from the National Income and Product Accounts (NIPA) of the Bureau of Economic Analysis (BEA)**

- Inflation in Europe is mainly due to rise in fuel price, with very little contribution on higher wages. But profit maximization is one of the reasons for the inflation.
- IMF Study in Europe: Contribution (in inflation) of profits is higher than rising import prices.

## Status of India

**Arguments Against?**

- **For US:** Money supply rose by 40% since pandemic due to US Federal Reserves expansionary monetary policy.
- **General:** Profits of the corporates saw an increase due to the shutting down of small businesses during pandemic.

**Challenges?**

- Adjusting interest rates is not a solution as the inflation isn't due to higher demand or supply constraints.
- Taxation on profits can make corporates rethink this. But this will affect even the innocent companies.
- Difficult to determine that price rise has been due to profit, or increased labour or other input costs.

**5. The Finance Commission and the Road Ahead**

**Syllabus:** GS 3-Economy, Finance commission

**Prelims:** Finance commission

**Context:** The government will appoint a Finance Commission in the next few months to determine how much of the Centre's tax revenue should be given away to States (the vertical share) and how to distribute that among States (the horizontal sharing formula).

**The Importance**

- In the pre-reform period, the Finance Commission recommendations were not that critical because the Centre had other ways to compensate States, or indeed to play favourites, through plan financing and public sector undertaking (PSU) investments.
- Post-reforms, fresh PSU investments have thinned out and the Planning Commission was abolished in 2014 with the result that the Finance Commission remains virtually the sole architect of India's fiscal federalism.
- Currently, the Centre gives away 41% of its tax pool to the States. For sure, States will demand that this proportion be raised, but there isn't much room for stretching this further given the Centre's expenditure needs and the constraints on its borrowing limit. Therefore, much of the debate will centre on the horizontal distribution formula

**The Debate**

- When the previous Finance Commission was appointed in 2017, its terms of reference became quite contentious because it was asked to take into account the 2011 population figures in determining the expenditure needs of a State. States which had done well in stabilising population growth rates, typically the southern States, protested against this change in the base year, calling it a 'penalty for good performance'
- A similar conflict arises with regard to revenue deficit grants that the Finance Commission awards to States which remain in deficit on the current account even after tax devolution. In theory, revenue deficit grants have a neat rationale — that every State in a country should be able to provide a minimum level of service to its residents even if it involves an element of cross-subsidisation.
- The worry is that this too has become a perverse incentive. Why bother raising revenues on your own when the Finance Commission will compensate you?

### The Core Issue

- Historically, Finance Commissions have struggled to determine how much a State's deficit is due to its fiscal incapacity and how much is due to fiscal irresponsibility.
- They have tried to tweak the distribution formula to support deficit States without penalising responsible States, a mathematically impossible task since you cannot give more to a State without giving less to another.
- The net result is that every horizontal distribution formula has been criticised as being inefficient or unfair or both.

### Issue of Cess and Surcharge

- The first is the egregious practice by the Centre of increasingly resorting to a levy of cesses and surcharges rather than raising taxes. A white paper released by the Tamil Nadu government a couple of years ago pointed out that the proportion of cesses and surcharges in the Centre's total tax revenue had nearly doubled from 10.4% in 2011-12 to 20.2% in 2019-20.
- The straightforward option for raising revenues is to raise taxes, but if the Centre does that, it has to part with 41 paise to States. On the other hand, if it raises the additional rupee by way of a surcharge, it gets to keep all of it.
- The next Finance Commission should lay down guidelines for when cesses and surcharges might be levied, and also suggest a formula to cap the amount that can be raised.

## 6. May core sector growth pace brakes to 4.3%, from 19.3%

**Syllabus:** Economic and Social Development – Sustainable Development, Poverty, Inclusion, Demographics, Social Sector Initiatives, etc.

**Prelims:** Growth and Sustainable Development

- The growth of eight key infrastructure sectors in India slowed down to 4.3% in May 2023.
- The decline was driven by a fall in the production of crude oil, natural gas, and electricity.
- The Index of Core Industries (ICI) measures the combined and individual performance of eight core industries: **coal, crude oil, natural gas, refinery products, fertilizers, steel, cement, and electricity**. These eight industries account for 40.27% of the weight of items included in the Index of Industrial Production (IIP).
- The compilation and release of the index are done by the Office of the Economic Adviser (OEA), Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry.
- Index of Eight Core Industries uses 2011 – 12 as the base year.

## 7. A macro view of the fiscal health of States

**Syllabus:** GS-3, Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment

**Mains:** Issues with the fiscal health of States and the way forward

### Background:

- In India, the States account for 60% of all government spending and raise collectively more than a third of the country's total revenue. And, around 40% of all government borrowing is done by the states.
- To make informed deductions about the country's fiscal status given the size of the fiscal operations of States, it is essential to have a current understanding of their finances.

### Consolidation of Fiscal Health of States

- Significant post-pandemic fiscal adjustments have been made at the Union and State levels.
- This significant decrease in the budget deficit implies that we should not take an impressionistic picture of the country's finances, particularly the finances of the States.

### Significance of Fiscal Consolidation:

The financial problems that result from state budgets are typical of Indian state finances. The analysis demonstrates that these States have all worked cooperatively to keep their fiscal imbalances under control.

- First off, even during the height of COVID-19, States as a whole were able to maintain sound financial practices.
- Second, it was difficult and required fiscal coordination between the Union and the States to make emergency provisions for living expenses and health care during the COVID-19 pandemic.
- Third, States were able to quickly reduce the fiscal imbalance by reallocating spending.
- Fourth, the decrease in the budget deficit is the result of changes made on the expenditure side, better Goods and Services Tax (GST) collection, and increased tax devolution because of booming central revenues.
- Fifth, following the epidemic, non-GST revenues are also beginning to recover in the majority of States.

### Fiscal Issues

- **No reduction in revenue deficit:** Out of 17 main States, 13 have a revenue account deficit, the same as in 2023–24 (BE). Seven of the 13 states have budgetary deficits, with revenue deficits being the main cause in those seven states. Additionally, their debt-to-GDP ratios are high.
- **Increased number of fiscally stressed States:** Three States—Kerala, Punjab, and West Bengal—were deemed to be fiscally stressed States in a review of subsequent finance commissions since the Twelfth Finance Commission. The number of states facing fiscal difficulties has risen to seven.

### Measures for Fiscal Consolidation

- **Managing Revenue Deficit:** The recent resurgence of the revenue deficit should refocus attention on managing the revenue deficit by developing an incentive-friendly framework. Consider the following actions. A more extensive and careful examination of the rise in state revenue deficits is also required. In this regard, numerous approaches proposed by previous Finance Commissions to determine the framework of the incentive structure can be explored.
- **Interest-free Loans:** The Union Government's interest-free loans to the States will serve to reduce the likelihood that the States' own capital expenditures will be substituted, as well as the risk that borrowed funds will be used to cover revenue expenditures.
- **Prioritise Capital Planning:** If states prioritise capital planning, the first place to make cuts in order to reach budgetary targets, increased allocations for areas like health, education, infrastructure, and green energy transition can assist expand productive capacities.
- **Establish a Capex Buffer Fund:** States must establish a capex buffer fund during good times when revenue flows are strong in order to smoothen and maintain spending quality and flow across the economic cycle.
- **Attract Private Investments:** The State governments may keep concentrating on building a supportive environment for the private sector to flourish in order to attract private investment. To fully reap the benefits of the spillover effects of State capital expenditures across the nation, states must likewise promote and facilitate increased interstate trade and business.

### Conclusion

In conclusion, we must refocus on the management of the revenue deficit. A macro perspective is required for this. The fiscal stability of state finances is crucial to ensuring stronger state-specific growth.

**Nut Graf:** *To improve the fiscal health of States, a comprehensive framework for revenue deficit reduction is necessary. Long-term fiscal consequences of the growing revenue deficit that is driving the fiscal imbalance need correcting the revenue account imbalance.*

## 8. Lessons from the fracas over foodgrains

**Syllabus:** Government Budgeting, Inclusive growth and Economic policies

**Mains:** Issues relating to public distribution and food security

**Prelims:** Government policies ensuring food security

### Context:

The Karnataka government's decision to convert the Anna Bhagya scheme to direct benefit transfer has raised concerns about the limits of state government's policy intervention in ensuring food security.

### Introduction:

- The Karnataka government's decision to temporarily convert the Anna Bhagya scheme to direct benefit transfer has shed light on the challenges faced by state governments in implementing policies related to food security.
- The abrupt discontinuation of rice and wheat supply under the Open Market Sale Scheme Domestic (OMSSD) by the Union Food Ministry has created obstacles for Karnataka's implementation of the scheme, which aimed to provide free rice to millions of beneficiaries.

### The Anna Bhagya Scheme and Beneficiaries:

- The objective of Anna Bhagya was to distribute five kilograms of rice per person per month to a staggering 4.42 crore beneficiaries.
- Beneficiaries included Antyodaya Anna Yojana (AAY) cardholders (45 lakh), Priority Household (PHH) cardholders (3.58 crore), and Karnataka's own PHH cardholders (39 lakh).
- This entitlement was in addition to the regular provisions under the National Food Security Act (NFSA).

### Discontinuation of OMSSD and Implementation Challenges:

- The Union Food Ministry's decision to discontinue OMSSD for all state governments, except under certain exceptions, posed a serious problem for implementing Anna Bhagya.
- Karnataka had planned to utilise OMSSD for the scheme's implementation, but the sudden discontinuation caused disruption.
- OMSS is now restricted to accommodate small and marginal buyers and traders, affecting rice-deficit states that relied on it to supplement their allocation.



**Need for Effective Communication and Broad-based Consultation:**

- The controversy could have been avoided if there had been effective communication and broad-based consultation between the Union Food and Public Distribution Department and the Food Corporation of India (FCI).
- Broad-based consultation is necessary to prevent such issues, considering the Centre's restrictions on foodgrain availability under OMSSD.

**Sustainability and Macro Picture:**

- Anna Bhagya's sustainability was in question due to reliance on OMSSD alone, as it would not have been sufficient to meet the required quantity of rice.
- States must consider the macro picture and the practicality of their schemes, considering the overall availability of food grains.

**Importance of Discipline and Objective Appraisal:**

- The Centre has concerns if every state promises schemes without considering the emerging reality and relying solely on the Centre's assistance.
- Political players should exercise moderation in making electoral promises related to food security and view foodgrains as a tool of objective appraisal rather than political instruments.

**Cost and Outgo:**

- The cost of obtaining the required quantity of grains for Anna Bhagya at ₹36.6 per kg would have amounted to a monthly outgo of approximately ₹840 crore.
- The availability and cost of food grains need to be carefully considered in implementing such schemes.

**Nut Graf:** The discontinuation of rice and wheat supply under the Open Market Sale Scheme-Domestic (OMSS-D) by the Union Food Ministry has posed challenges for Karnataka's implementation of the Anna Bhagya scheme, which aimed to provide free rice to millions of beneficiaries. This highlights the need for effective communication, broad-based consultation, and careful consideration of the macro picture in food security initiatives.

**9. A global rupee may raise volatility**

**Syllabus:** GS 3-Economy

**Prelims:** Internationalisation of the Indian rupee

**Introduction**

- The Government of India aims to internationalise the Indian Rupee (INR).
- An Inter-Departmental Group (IDG) of Reserve Bank of India (RBI) officials issued a cautionary report.
- The IDG warned that initial internationalisation may lead to increased volatility in the rupee's exchange rate.

**Monetary Implications and Concerns**

- The IDG highlighted the Triffin dilemma, where the obligation to supply currency for global demand conflicts with domestic monetary policies.
- Internationalisation may amplify external shocks due to the open flow of funds and currency exchange.
- Increased exchange rate volatility could have monetary implications and challenges.

**Overall Benefits Outweigh Concerns**

- The IDG stated that the advantages of internationalisation outweigh the concerns.
- Benefits include limited exchange rate risk, lower capital costs, improved access to international financial markets, seigniorage benefits, and reduced foreign exchange reserve requirements.

**Recommended Roadmap**

- The IDG recommended a roadmap to achieve rupee internationalisation.
- It suggested designing a template and adopting a standardised approach for examining proposals on bilateral and multilateral trade agreements.
- There should be endeavours to facilitate the inclusion of INR as an additional settlement currency within established multilateral mechanisms such as the Asian Clearing Union.

**RBI's Clarification**

- The report and its recommendations reflect the views of the IDG, not the official position of the Reserve Bank of India.
- The RBI clarified that the report does not represent its official stance.

## 10. Internationalising the rupee without the 'coin tossing'

**Syllabus:** Indian Economy and issues relating to Planning, Mobilization of Resources, Effects of Liberalization on the Economy

**Mains:** Need for Internationalising the rupee, issues and reform

**Prelims:** Implications of Internationalising the Rupee

**Context:** Challenges and potential strategies for internationalizing the Indian rupee, drawing lessons from China's experience and emphasizing necessary reforms.

### Limited International Demand for Rupee:

- **Historical context:** In the past, the Indian rupee had significant international acceptance in countries like UAE, Kuwait, Bahrain, Oman, and Qatar.
- **Limited international demand:** Currently, the rupee's share in the global foreign exchange market and India's share of global goods trade are relatively low.
- **Confidence concerns:** Events like demonetization in 2016 and the recent withdrawal of the ₹2,000 note have impacted confidence in the Indian rupee.
- **Present international exchange:** The daily average share of the rupee in the global foreign exchange market is around -1.6%, indicating limited international demand for trading in the Indian rupee.

### Hindrances to the Internationalisation of the Indian Rupee:

- **Capital account convertibility restrictions:** India imposes significant constraints on the exchange of its currency with others due to concerns about capital flight and exchange rate volatility.
- **Limited use in international transactions:** Despite some measures taken to promote the internationalization of the rupee, transactions conducted in rupees remain limited, and oil purchases from Russia are still primarily settled in dollars.
- **Confidence and stability issues:** Factors such as past experiences of capital outflows, deficits, and exchange rate volatility have affected confidence in the stability of the Indian rupee.
- **Lack of awareness and acceptance:** There is a lack of awareness among traders about local currency facilities and a general lack of acceptance and demand for trading in the Indian rupee internationally.
- **Underdeveloped bond market:** The underdeveloped nature of the rupee bond market hinders the internationalization of the Indian rupee. A deeper and more liquid bond market is needed to attract foreign investors and provide investment options in rupees.
- **Limited investment options:** The lack of a robust bond market restricts foreign investors and Indian trade partners from having sufficient investment options in rupees, making it less attractive for international transactions and investments.

### China's Case Study:

- **Phased approach:** China's internationalization of the Renminbi (RMB) involved gradually allowing its use for trade finance, investment, and eventually as a reserve currency.
- **Currency swap agreements:** China signed currency swap agreements with various countries, enabling the exchange of equivalent amounts in different currencies and facilitating international trade.
- **Offshore markets:** China established offshore markets and allowed non-resident trading, contributing to the internationalization of the RMB.

### Way forward:

- **Full capital account convertibility:** India should work towards making the rupee more freely convertible, allowing financial investments to move freely between India and abroad, which would enhance liquidity and attractiveness for foreign investors.
- **Deeper rupee bond market:** Developing a deeper and more liquid rupee bond market would provide investment options for foreign investors and Indian trade partners, facilitating the international use of the rupee.
- **Encouraging rupee invoicing:** Indian exporters and importers should be encouraged to invoice their transactions in rupees, optimizing trade settlement formalities and reducing reliance on reserve currencies like the dollar.
- **Currency swap agreements:** Increasing currency swap agreements, such as with Sri Lanka, would enable trade and investment transactions to be settled in rupees, reducing dependence on other currencies.
- **Currency management stability:** Ensuring consistent and predictable issuance/retrieval of notes and coins, and maintaining a stable exchange rate regime would enhance confidence in the rupee.
- **Tarapore Committee recommendations:** Implementing the recommendations of the Tarapore Committee, including reducing fiscal deficits, inflation rates, and banking non-performing assets, would contribute to the stability of the rupee.

**Nut Graf:** The challenges hindering the internationalization of the Indian rupee include limited demand, capital account restrictions, confidence issues, and an underdeveloped bond market, drawing insights from China's experience.

## 11. FinMin pushes for reforms to spur FDI

**Syllabus:** GS 3- Economy

**Prelims:** Factors impacting Foreign Direct Investment

### Introduction:

- The Finance Ministry emphasised the importance of measures to boost Foreign Direct Investment (FDI) flows.
- FDI inflows declined in the past year and are expected to remain subdued in the coming months.
- The Ministry calls for attention to resolve challenges faced by global investors, such as last-mile infrastructure issues and difficulties in setting up large-scale factories.
- Gross FDI flows decreased by 16% in the previous year compared to the record high of \$84.8 billion in FY22. Net FDI inflows to emerging market economies declined by 36% in 2022.

### Factors Impacting FDI Inflows:

- Dip in FDI inflows in FY23 attributed to inflationary pressures and tighter monetary policies.
- Political distance has become more influential than geographical distance in determining FDI flows.

### Challenges for India's Growth Outlook:

- External sector identified as a potential challenge for India's growth in FY24.
- Geopolitical stress, volatility in global financial systems, price correction in global stock markets, El-Nino impact, and modest trade activity may constrain growth.
- Continuous monitoring of FDI data and implementing measures to facilitate FDI inflows recommended.

### Fragmentation in FDI Flows:

- "Friend-shoring" of FDI, where investments are increased in geopolitically aligned countries, leads to fragmented FDI flows globally.
- Research from the International Monetary Fund (IMF) supports this observation.

### Impending Downside Risk to India's Exports:

- The introduction of the European Union's Carbon Border Adjustment Mechanism (CBAM) poses a potential risk to India's exports.
- Mandatory carbon content reporting from October 1st may impact India's export prospects.

### Rising Inclusivity in the Indian Economy:

- The Ministry counters criticism of an uneven recovery and highlights the role of job creation in boosting demand.
- Job creation contributes to the increasing inclusivity of India's economic growth.
- Employment levels are expected to remain robust due to digitalization, technological advancements, and the implementation of the Production-Linked Incentive (PLI) scheme.

## 12. Government to share PM Gati Shakti data

**Syllabus:** Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

**Prelims:** Economic and Social Development – PM Gati Shakti Scheme

**Mains:** National Infrastructure Pipeline, Logistics Development, Government Policies & Interventions

- The PM Gati Shakti platform is a digital platform that integrates infrastructure schemes of various ministries and state governments.
- **The six pillars of the PM Gati Shakti plan are:**
  - **Comprehensiveness:** The plan will include all the existing and planned infrastructure projects from different government ministries and departments.
  - **Prioritization:** The plan will help to prioritize projects by identifying the most critical gaps in infrastructure. This will ensure that resources are allocated to the most important projects first.
  - **Optimization:** The plan will help to optimize the transportation of goods by identifying the most efficient routes. This will reduce the time and cost of transporting goods, which will make businesses more competitive.
  - **Synchronization:** The plan will help to synchronize the activities of different government departments and agencies. This will ensure that projects are implemented in a timely and efficient manner.
  - **Analytics:** The plan will use data and analytics to provide insights into the effectiveness of infrastructure projects. This information can be used to improve future projects.
  - **Dynamic:** The plan will be dynamic and adaptable to changing needs. This will ensure that the plan remains relevant and effective over time.
- The platform has multiple layers of geospatial data from across the country, which can be used to evaluate and facilitate infrastructure projects.
- The government is working to share the data with industry and potential investors about multi-modal connectivity and other physical and social infrastructure captured on the PM Gati Shakti platform.

- The **Network Planning Group (NPG)** under the platform has so far evaluated and facilitated 85 large central infrastructure projects worth nearly ₹5.4 lakh crore.
- The government is working with the Ministry of Science and the Ministry of Electronics and IT to share geospatial data in a way that is compatible with data protection and privacy regulations.

### 13. Centre adding more services to Ayushman Bharat-Health and Wellness Centres

**Syllabus:** Economic and Social Development – Sustainable Development, Poverty, Inclusion, Demographics, Social Sector initiatives,

**Prelims:** Ayushman Bharat, Social Sector Schemes

**Mains:** Sustainable Development Goals, Development and Management of Services relating to Health, Poverty Alleviation, Impact of Ayushman Bharat

**Context:** India's Ayushman Bharat-Health and Wellness Centers (AB-HWCs) programme is being expanded for additional delivery of health care services.

#### About Ayushman Bharat Scheme:

- Ayushman Bharat is a flagship scheme of Government of India launched to achieve the vision of Universal Health Coverage (UHC).
- It aims to undertake interventions to holistically address the healthcare system at primary, secondary and tertiary level.
- **It comprises of two inter-related components:**
  - **Health and Wellness Centres (HWCs)** – To deliver Comprehensive Primary Health Care (CPHC) bringing healthcare closer to the homes of people.
  - **Pradhan Mantri Jan Arogya Yojana (PM-JAY)** – To provide health cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization. The scheme covers over 12 crores poor and vulnerable families (approximately 55 crore beneficiaries) that form the bottom 40% of the Indian population.
- The cost of implementation is shared between the Central and State Governments.

#### What are the new services being offered under the scheme?

- The expansion includes services such as screening, prevention, control & management of non-communicable diseases, care for common ophthalmic & ENT problems, basic oral health care, elderly and palliative health care services, emergency medical services, and screening and management of mental health ailments.
- Additionally, the essential list of medicines and diagnostics has been expanded at the Primary and Secondary Health Care centers. (PWC and SWC respectively)
- A new cadre of Community Health Officers has been introduced to act as clinicians as well as public health managers at the Secondary Health Care Centers.
- The facilities are being encouraged to undergo the National Quality Assurance Standards (NQAS) assessment and certification to ensure consistent and quality delivery of health care services.
- Ayushman Bharat-Health and Wellness Centres (AB-HWCs), started in 2018, is aimed at providing Comprehensive Primary Health Care (CPHC).
- The goal is to provide free essential drugs and diagnostic services, maternal care, treatments for non communicable diseases etc through AB-HWCs.
- These centers also provide wellness activities including yoga, zumba, meditation, counseling for healthy diet and lifestyle to provide comprehensive primary health care.
- According to Central government data, more than 122.02 crore cumulative screenings for non-communicable diseases such as hypertension, diabetes and various forms of cancer have been conducted in the Ayushman Bharat-Health and Wellness Centres.

**Nutgraf:** The ambit of services under the Ayushman Bharat Health and Wellness Centres is being increased to take a step towards comprehensive primary healthcare. Emphasis is also being placed on the Quality of the services provided under the scheme.

#### 14. 50th GST Council meeting

**Syllabus:** Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

**Mains:** GST council meeting outcomes, Impact on the online gaming Industry of recent GST tax rate change

**Context:** The Goods and Services Tax (GST) Council's 50th meeting addressed crucial issues, including the constitution of Appellate Tribunals and tax treatment for the online gaming industry.

**Appellate Tribunals:**

- Appointment norms for tribunal members have been cleared.
- The first set of tribunals is to be operational in 4-6 months.
- States proposed 50 tribunal benches, phased implementation in State capitals and cities with High Court benches.

**Tax Treatment for Online Gaming Industry:**

- Finalized 28% GST levy on the face value of bets in online games, casinos, and horse racing. However, the industry expressed concerns, terming it detrimental to the sector and jobs.
- The Ministry of Electronics and IT is formulating a policy for online gaming, and the possibility of further review.

**Tax Exemptions, Rate Reductions, and Clarifications:**

- Lower 5% GST on food and beverages in cinema halls, unfried snack pellets, fish soluble paste, and imitation zari yarn.
- Rectification of past tax payment incongruencies and exemptions for drugs imported for cancer and rare diseases.

**Conclusion:** The 50th GST Council meeting addressed important concerns, such as Appellate Tribunals and tax treatment for online gaming. It granted tax exemptions and clarified rates, but concerns persist regarding delayed rate adjustments and the lack of focus on comprehensive reforms.

**Nut Graf:** The 50th GST Council meeting resolved issues related to Appellate Tribunals and online gaming taxes. While providing relief through exemptions and rate adjustments, concerns remain regarding delayed reforms and their potential impact on the gaming industry.

#### 15. Uneven monsoon could fuel food inflation

**Syllabus:** GS 3- Economy

**Prelims:** Impact of below-normal monsoon on agriculture and inflation

**Wetter July Fails to Improve Monsoon in Some Regions**

- Despite overall rainfall above long period average, Southern peninsula, Deccan Plateau, and eastern region experience below-normal monsoon

**Kharif Sowing Remains Lower Than Last Year**

- Overall sown area of kharif crops down by 2% compared to 2022
- Major crops facing shortfalls: maize (5.6%), rice (6.1%), and pulses (13.3%)

**Significant Drop in Sowing of Arhar**

- Arhar sown area down by more than 38% compared to last year
- Risk of scarcity in Arhar production

**Uneven Rainfall Distribution**

- Some parts of West and North India experience excessive rainfall
- Deficiency in States like Bihar and Jharkhand

**Impact on Reservoir Levels**

- Western and southern regions' reservoir levels lower than last year
- Uneven rainfall distribution affects water availability

**IMD's Forecast for Low Rainfall in Some States**

- Parts of Uttar Pradesh, Karnataka, Assam, Bihar, Punjab and Tamil Nadu may see less than normal rainfall
- Further risk to paddy and pulses sowing

**Food Inflation on the Rise**

- Deficient rainfall leads to lower sowing of rice and pulses
- Pushes food prices higher



**Crucial Period for Kharif Crops**

- July is critical for sowing kharif crops
- Approximately 32% of monsoon precipitation occurs during this month

**16. Centre bans export of non-basmati white rice to control price rise in India**

**Syllabus:** GS 3- Economy

**Prelims:** Indian Economy and issues relating to planning, mobilisation of resources, growth, development, and employment.

**Ban on Non-Basmati White Rice Export**

- The Union government imposed a ban on the export of non-basmati white rice.
- The Directorate General of Foreign Trade, under the Union Commerce Ministry, issues a notification to enforce the ban immediately.
- Exemptions are considered only for shipments that commenced loading before the notification or where shipping bills were filed, and vessels had already berthed or arrived at Indian ports.

**Reason for the Ban**

- The ban is introduced to ensure sufficient availability of non-basmati white rice in the domestic market.
- The measure aims to curb the recent price rise of non-basmati white rice.
- Non-basmati rice was previously exported under the 'Free with export duty of 20%' category.

**Previous Efforts to Control Exports**

- To regulate prices and availability, a 20% export duty on non-basmati white rice was imposed last year.
- Despite the export duty, the export of this rice variety increased, raising concerns about adequate domestic supply.

**Export Surge and Contributing Factors**

- Exports of non-basmati white rice surged from 33.66 lakh tonnes (September-March 2021-22) to 42.12 lt (September-March 2022-23).
- In 2023-24, about 15.54 lt of this rice variety was exported, compared to 11.55 lt during 2022-23.
- The significant increase in exports can be attributed to high international prices influenced by geopolitical scenarios, El Nino effects, and extreme climatic conditions in other rice-producing countries.

**Government's Concern and Intended Impact**

- The Union Food Ministry expressed concern over rising retail prices of non-basmati white rice.
- The ban is expected to stabilise prices in the domestic market and ensure a sufficient supply of this rice variety.

**Future Implications**

- The ban on non-basmati white rice exports may have an impact on the global rice market.
- The measure aims to prioritise domestic consumption and food security.

**17. Full reserve banking: where banks act solely as custodians of customers' money**

**Syllabus:** GS 3 – Economy

**Prelims:** Concepts of full reserve banking and its implications for the banking system.

**Full-Reserve Banking System**

- Under full-reserve banking, banks cannot lend out money received as demand deposits.
- Banks act as custodians and hold all demand deposits in their vaults at all times.

**Lending in a Full-Reserve System**

- Banks can only lend money received as time deposits, allowing time to repay depositors with interest.
- This contrasts with fractional-reserve banking, where banks create electronic loans exceeding actual cash reserves.

**Reduced Risk of Bank Runs**

- Full-reserve banking prevents excessive loans and reduces the risk of bank runs.
- Demand for cash remains minimal due to non-cash transactions and central banks provide emergency cash if needed.

**Economic Growth Debate**

- Supporters of fractional-reserve banking believe it spurs investment and economic growth.
- Proponents of full-reserve banking argue it prevents crises and restricts banks' influence on the money supply.

**Advantages of Full-Reserve Banking:**

- Full-reserve banking prevents bank runs as banks must back loans with actual cash reserves.
- Restricted money supply in full-reserve banking prevents artificial economic booms and busts.

**18. Shedding more light on the debt dilemma**

**Syllabus:** Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment.

**Mains:** How the high level of debt is a burden on future generations and what steps need to be taken for course correction?

**Prelims:** What is fiscal deficit, Data related to fiscal deficit and public debt

**Context:** India's high fiscal deficit & public debt, worsened by the pandemic, require policy changes for sustainable economic recovery.

**Current status of Debt:**

- India's fiscal deficit and public debt levels have been a concern even before the COVID-19 pandemic, ranking among the highest among developing economies.
- Due to the pandemic, the fiscal deficit in 2020-21 increased to 13.3% of GDP, and aggregate public debt rose to 89.6%. As the economy recovered, the deficit and debt ratios reduced to 8.9% and 85.7%, respectively.
- Projections indicate that debt levels are unlikely to return to pre-pandemic levels in the medium term.
- Elections in 2023 and 2024 could exacerbate the debt situation due to electoral budget cycles.

**Fiscal Repression:** Fiscal repression is a government strategy to keep interest rates on its borrowing low, often through central bank interventions and mandatory requirements for financial institutions to hold government securities. This helps reduce borrowing costs but can distort financial markets and hinder economic growth.

**Consequences of Fiscal Repression:**

- The Reserve Bank of India (RBI) enforces the statutory liquidity ratio (SLR), requiring banks to hold 18% of their liabilities in government securities.
- RBI intervenes in the market through open market operations to suppress interest rates during government borrowing.
- High deficits and debt lead to heavy interest payments, constituting over 5% of GDP and 25% of revenue receipts, crowding out essential expenditures on infrastructure and human development.
- Large debt levels make it challenging to implement counter-cyclical fiscal policies and respond to economic shocks.
- The debt market in India is primarily captive, limiting lending resources for the manufacturing sector and increasing borrowing costs.
- High deficits and debt also result in lower sovereign ratings, increasing the cost of external commercial borrowing and burdening future generations with the debt.

**Sign of Hope:**

- Despite the challenges, there is hope for fiscal consolidation with the stabilization of the Goods and Services Tax (GST) and its potential for high growth.
- Improved tax administration and compliance, including cross-matching GST and income tax returns, can contribute to an increased tax-GDP ratio by 1.5 to 2 percentage points in the medium term.

**Way Forward:**

- Rethinking the role of the state and reducing activities that can be handled by the market is crucial.
- The government should accelerate disinvestment efforts and avoid competing with the private sector in areas like telecom.
- Ensuring responsible fiscal policies at both the central and state levels is essential. States should be subject to hard budget constraints and enforce Fiscal Responsibility and Budget Management rules.
- Redistribution through cash transfers is preferable to subsidies on commodities and services to avoid unintended resource distortions.
- The Union government should lead in macroeconomic stabilization and follow and enforce the rules it sets for fiscal responsibility effectively.

**Nut Graf:** India grapples with a concerning debt dilemma due to a high fiscal deficit and public debt, worsened by the pandemic. Financial repression and interest payments hinder economic growth and development. Targeted interventions, responsible fiscal policies, and disinvestment efforts are essential to ensure sustainable recovery and alleviate the burden on future generations.

## 19. Resilient, but just

**Syllabus:** Growth, Development

**Mains:** Challenges the Global Economy faces in the wake of ongoing Geopolitical conflict and slowdown in major Economies

**Context:** IMF predicts global economic growth, but challenges persist with US and China slowdowns, euro area troubles, and debt vulnerabilities.

### World Economic Outlook Forecast:

- The International Monetary Fund (IMF) released its latest update on the world economic outlook.
- The global economy has shown resilience by weathering recent challenges, including bank collapses in the U.S. and Switzerland.
- The IMF projects a potential expansion of 3% in 2023, indicating positive growth prospects.

### Emerging Challenges in the Recovery of the Global Economy:

- The IMF's cautious upgrade of 20 basis points from its April projections does little to assure that the world economy is completely out of the woods.
- Many challenges continue to loom on the horizon, and risks, both known and unforeseen, abound.
- The two largest economies, the United States and China are facing slowdowns and increased uncertainty due to various global and domestic factors.
- The U.S. has seen a depletion of surpluses from pandemic-era cash transfers meant to support families during COVID-19 and the subsequent cost-of-living crisis.
- China's post-reopening rebound has faltered due to a contraction in the real estate sector, weakening consumption, and declining overseas demand for exports.
- The euro area, another crucial engine of the global economy, is still impacted by the spike in gas prices resulting from the Ukraine war, with momentum decelerating in major regional economies like Germany and France.
- Eurozone business output has experienced a sharp decline, and forward-looking indicators suggest a potential deepening of the region's downturn.
- Inflation, especially core inflation, remains high above central banks' targets, leading to the possibility of demand-retarding monetary tightening.
- Russia's termination of the Black Sea grain deal may result in a 15% increase in grain prices, affecting low-income economies in Africa.
- Frontier economies are facing heightened debt vulnerabilities, and urgent action is needed to prevent debt distress through a global debt resolution initiative.

### Way Forward:

- Economic leaders must recognize the risks of lopsided growth that neglect vulnerable nations, as this could weigh down the larger global economic structure in an interconnected world.
- Policymakers should continue efforts to address inflation while being mindful of potential impacts on demand and economic growth.
- The IMF's chief economist emphasizes the need for a concerted global debt resolution initiative to support highly indebted countries and prevent further economic instability.
- International cooperation and support are essential to ensure a sustainable and inclusive recovery for the world economy.

**Nut Graf:** The International Monetary Fund's latest world economic outlook suggests global resilience amid past challenges, but uncertainties persist. Slowdowns in major economies like the US and China, euro area struggles, inflation concerns, and debt vulnerabilities pose risks. A concerted effort is needed to ensure an inclusive and stable global economic recovery.

## 20. Govt may extend PLI scheme to chemicals, petrochemicals

**Syllabus:** GS 3- Economy

**Prelims:** Government policies and interventions aimed at development of various sectors of the economy.

### Introduction

Finance Minister Nirmala Sitharaman indicated India's keenness to establish joint ventures with international investors in the chemicals and petrochemicals sectors. She also suggested the potential introduction of a production-linked incentive (PLI) scheme to incentivize investments in these industries, emphasising the importance of sustainability and the adoption of advanced technologies.

**Global Investors Eager for Joint Ventures**

- Prominent global investors such as BASF, Adnoc, Rosneft, and Aramco are actively pursuing joint venture opportunities to invest in India's chemicals sector.
- The move signals potential opportunities for collaboration and foreign investments in the country's chemical industry.

**Production-Linked Incentive (PLI) Scheme for Chemical Sector**

- The Indian government is open to introducing a PLI scheme to attract investments in the chemicals and petrochemicals sectors.
- PLI has been an effective tool for encouraging domestic manufacturing and industrial growth in various sectors.

**Urging Reduction of Imports and Embracing Newer Technologies**

- Finance Minister Sitharaman urged the industry to reduce reliance on imports of chemicals that can be produced domestically.
- Emphasised the importance of adopting newer technologies, with a focus on sustainability and circularity, to derive benefits from potential partnerships with global players.

**Sustainability and Global Commitments**

- Ms. Sitharaman stressed the significance of maintaining global standards of sustainability and adhering to India's nationally determined commitments (NDC) for any successful joint ventures with global investors.
- Ensuring alignment with sustainability goals will enhance India's position as a reliable partner for foreign investments.

**India's Aspiration to be a Manufacturing Hub**

- The government aims to make India a manufacturing hub, and hence, it is considering the PLI scheme for the chemical and petrochemical sectors.
- Attracting foreign investments in these sectors will contribute to India's industrial growth and economic development.

**21. G20: 39 MNCs come together for circular economy coalition**

**Syllabus:** GS 3- Economy

**Prelims:** Circular economy model.

**Introduction**

- The Resource Efficiency Circular Economy Industry Coalition (RECEIC) launched at the fourth G-20 Environment and Climate Sustainability Working Group (ECSWG) and Ministers' meeting in Chennai promotes sustainability and regenerative practices in industries.
- Union Minister Bhupender Yadav stresses the need to shift from the linear "take-make-waste" model to a circular economy approach.

**Circular Economy Model for a Sustainable Future:**

- The circular economy model focuses on breaking away from the conventional linear approach, where resources are extracted, used, and discarded as waste.
- Instead, the circular economy aims to adopt a more sustainable and regenerative approach by reducing waste and maximising resource efficiency.
- By reusing, recycling, and regenerating materials and products, the circular economy seeks to minimise environmental impact and create a closed-loop system.

**Pledging for Resource Efficiency:**

- As many as 39 multinational corporations (MNCs) from diverse sectors, including steel, FMCG, and electronics, have come together to commit to resource efficiency and circular economy principles.
- These MNCs recognize the importance of addressing environmental challenges arising from waste, such as plastics, microplastics, e-waste, and chemical waste.

**Coalition Launch and Global Participation:**

- The launch of RECEIC involved the signing of the foundational charter and the unveiling of the logo.
- Ministers from seven countries, including Mauritius, Denmark, Italy, Canada, the UAE, France, and the European Union, participated in the event, demonstrating global collaboration.

**Industry-Led Coalition with Government Support:**

- The coalition will be led by industries, and the government will play a supportive role in facilitating sustainable practices.
- This collaborative approach aims to harness the expertise and resources of both the private sector and the government in promoting a circular economy.

### India's Efforts in Mitigating Plastic Waste:

- In 2021-22, the country generated approximately 41 lakh tonnes of plastic waste.
- Of this waste, around 30 lakh tonnes were allocated to registered recyclers and plastic waste processing units.

### Extended Producers' Responsibility (EPR) Guidelines:

- To manage plastic waste, India has established EPR guidelines through the Plastic Waste Management (Amendment) Rules, 2022.
- Under these guidelines, plastic waste processors generated 2.6 million tonnes worth of EPR certificates, and PIBOs purchased approximately 1.51 million tonnes of these certificates to fulfil their obligations for 2022-23.

## 22. Turbulence hits UDAN scheme, 50% routes grounded

**Syllabus:** Infrastructure- Airports

**Prelims:** RCS (Regional Connectivity Scheme)

**Mains:** Concerns and challenges of UDAN scheme

### Context:

- Government claims the biggest success in aviation is construction of 74 airports in 7 years but there are certain concerns regarding this claim.

### Details:

- Out of 74 airports constructed in past 7 years, only 11 built from scratch (greenfield); 15 already fallen into disuse.
- There has been a collapse of almost half of the Routes launched under the Regional Connectivity Scheme(RCS).
- Airport development has primarily been undertaken under the RCS, which was launched in 2017 to improve air connectivity for smaller cities and to redevelop under-utilised airports
- Involved the revival of old airstrips that were either lying unused or were used sparsely.
- The government launched 479 routes to revive these airports, out of which 225 have since ceased operations
- Of the 74 New airports, 9 are heliports while 2 are waterdromes.
- These two waterdromes, built for seaplanes between Gujarat's Gandhinagar and the Statue of Unity in Kevadia, closed down soon after the Prime Minister launched them in October 2020, as SpiceJet discontinued its flights after a "change in technical requirements"

### About UDAN Scheme

- **It was launched as a Regional Connectivity Scheme (RCS) under the Ministry of Civil Aviation in 2016, to provide affordable,** economically viable and profitable air travel on regional routes to the common man even in small towns
- UDAN (Ude Desh ka Aam Nagarik), Launched with the aim of taking flying to the masses by improving air connectivity for Tier-2 and -3 cities
- Done by subsidizing the routes.
- Routes are awarded after a bidding process, and the winning airlines are given certain incentives, along with viability gap funding (or a subsidy) equivalent to 50% of the seating capacity on their aircraft. In return, the airlines sell 50% of their seats at a flat rate of ₹2,500 per hour of flight, in order to make air travel affordable.
- The scheme also set aside a sum of ₹4,500 crore to revive old airports by recarpeting runways and erecting terminal buildings. Of these, 46 airports have been redeveloped by the Airports Authority of India (AAI), and the remaining by State governments and public sector units (PSUs).
- **Phases of RCS**
  - **Phase 1:** 2017, to connect unserved and underserved airports
  - **Phase 2:** 2018, expanding air connectivity to more remote and inaccessible parts.
  - **Phase 3:** Nov 2018, Hilly and remote regions.
  - **Phase 4:** Dec 2019, islands and other remote areas.
  - **Phase 5:** April 2023
  - Category 2 (20-80 seater) and Category 3 (>80 seats) aircrafts
- No predetermined routes would be offered
- Exclusivity of operation given to an airline will be withdrawn if the average quarterly Passenger Load Factor (PLF) is higher than 75% for four consecutive quarters

### Concerns:

- Cost of the subsidy is borne by Indian airlines flying on non-RCS routes, who pay an RCS levy of ₹15,000 per departure (As per April 2023).
- The airlines further pass the levy on their passengers on non-RCS flights (CROSS-SUBSIDIZATION).
- Of the 225 routes that have ceased operations, 128 routes shut down even before completing the mandatory three-year period under the scheme.
- Airlines found 70 of these routes to be commercially unviable despite the subsidy, while the remaining 58 have been cancelled due to "non-compliance" by the airline operator or the airline surrendering routes, or the airline companies shutting down.



- 97 routes shut down after completing the three-year period during which the government provides support.
- The objective of the scheme was that after the three-year period, airlines would be able to sustain operations on their own without government support, but out of the 155 routes that have completed three years, only 58 have survived.

**BIGGEST PROBLEMS:**

- The airlines are not finding adequate footfall.
- Aviation Sector is already stressed.
- Fast trains like Vande Bharat are a big competition.

**Conclusion:** Airlines should undertake marketing initiatives so that more and more people can take advantage of the UDAN scheme.

**Nut Graf:** More infrastructure is required for the successful implementation of the scheme across the country. Stakeholders should work towards making the UDAN scheme sustainable on its own and improve its efficiency.

**23. Mapping India's chip design ecosystem**

**Syllabus:** Manufacturing and Indigenisation of technology

**Mains:** Importance and Challenges in Indian Chip Designing Sector

**Context:**

- As part of the second phase of the design-linked incentive (DLI) scheme for the domestic semiconductor industry, the Indian government is considering a proposal to pick an equity stake in domestic chip design-making companies.
- This is to ensure a stable ecosystem alongside building a few "fabless companies".

**Industry Challenge**

- Highly capital-intensive sector: involves sizeable costs in setting up fabrication units, upscaling manufacturing capabilities and equipment (such as thermal stimulators, sensors), and pushing research.
- Also, returns are not immediate as setting up design and fabrication units involves long gestation periods.
- We are continuously trying to reduce size of chips: requires extensive research.
- Supply chain disruptions can dampen investor confidence.
- Thus, any policy for the sector needs to be long-term and well thought.

**Indian Chip Designing Sector**

- Highly-skilled talent pool of semiconductor design engineers, who make up about 20% of the world's workforce.
- About 2,000 integrated circuits and chips are designed in India every year.
- Global players operating R&D in the country include Intel, Micron and Qualcomm.
- But very low proportion of IP related to their design is owned by India.

**How DLI scheme wants to change this?**

- Introduced in December 2021 Under Semicon India Program (SemiconIndia futureDESIGN initiative)
- It wants to indigenise innovations.
- It aspires to grow at least 20 companies in India scaling a turnover of more than ₹1,500 crore in the next five years.
- For product design, the scheme will reimburse up to 50% of the eligible expenditure to a ceiling of ₹15 crore per application.
- Already, 30 semiconductor design startups have been established in India following the initiative.

**Challenges and Opportunities**

- Lack of venture capitalists in the private sector focused on semiconductors in India.
- Higher gestation periods imply design firms are not able to attract potential investors and venture capitalists as software companies have.
- Expert Opinion: government's attempt to become a venture capital firm for chip design companies is likely to be "ineffective and inefficient" as companies are naturally going to pick foreign buyers because it gives them higher valuation and also connects them to a global ecosystem of customers and investors
- Others say: But the government's participation would help with regulatory support. Also, added trust.
- Government equity would prevent companies from selling their majority stake to large global players to scale up the business.
- Will be encouraging for local, small, and medium-sized firms who face multiple hurdles to be part of the ecosystem.

**Conclusion:**

The 'Semicon India 2023' highlights investment opportunities in India's semiconductor sector. Our PM said the fourth industrial revolution currently underway was being driven by India's aspirations and the recent proposal will give a boost to this.

**Nut Graf:** The Indian government's proposal to pick an equity stake in domestic chip design-making companies is an opportunity for the sector however there are also some concerns regarding this decision.

## 24. What is Sam Altman's biometric project?

**Syllabus:** GS 3- Economy

**Prelims:** crypto currency, Worldcoin and zero knowledge proofs

### What is Worldcoin?

- Worldcoin is an initiative to create a digital network where everyone can claim a stake and participate in the global digital economy.
- The project aims to provide a World ID, a unique identifier, to individuals by scanning their iris patterns through a device called "Orb."
- Worldcoin is designed to be an open network accessible to people worldwide.

### How does Worldcoin work?

- Worldcoin users can participate by either having their irises scanned or becoming "Orb operators", who scan others' irises.
- Orb operators are volunteers who receive basic training and a biometric device to scan irises. They may even rent out the Orb to others for scanning.
- Those who receive a World ID through the scanning process are eligible to claim WLD crypto, a token based on the Ethereum blockchain.
- Users can use WLD for transactions or hold it as an investment. Additionally, WLD can be bought or sold without going through the scanning process.
- Orb operators receive WLD as incentives for signing up more people to the Worldcoin network.

### Why does Worldcoin scan irises?

- Worldcoin aims to include everyone in its network, and biometric information, such as iris scans, is seen as a valid way to prevent duplication and ensure uniqueness.
- Worldcoin highlights India's Aadhaar system as an example of how biometrics have been effectively used to prevent duplicate entries.
- The company claims to use zero-knowledge proofs (ZKPs) to maintain user privacy and states compliance with Europe's General Data Protection Regulation (GDPR).
- Worldcoin emphasises that individuals seeking a World ID are not required to share personal information like name, phone number, email address, or home address. Images collected for iris scanning are immediately deleted after generating a unique iris code, unless the user opts for Data Custody.

### Was Worldcoin criticised?

- Worldcoin faced criticism even before its re-launch. NSA whistleblower Edward Snowden pointed out that despite deleting biometric scans for privacy reasons, the unique identifier of the scan could still be used to match future scans of the same person's eyes.

### Has Worldcoin come to India?

- According to the company website, Worldcoin has expanded its operations to India.
- Worldcoin lists 18 locations, primarily in Delhi, Noida, and Bangalore, where Orb operators are scanning people's eyes.
- Some of these locations include popular malls and metro stations in the mentioned cities.

# INTERNATIONAL RELATIONS

## 1. Why are India-Russia trade payments in crisis?

**Syllabus:** Effect of policies and politics of developed and developing countries on India's interests

**Prelims:** De-dollarization, Crude Oil Trade, Trade deficit

**Mains:** De-dollarization of International Trade, Implications of Ukraine conflict on India, India – Russia relations

### Context

- The amount of oil imported from Russia increased by nearly 13 times, from less than \$2.5 billion in 2021-22 to over \$31 billion in 2022-23. This makes Russia the largest supplier of oil to India, replacing traditional suppliers such as Iraq, Saudi Arabia, and the UAE.
- With the possibility of breaching the sanctions imposed by the West and increased use of Chinese currency for payments, continuing to pay for Russian oil imports might be difficult for India

### What are the difficulties in oil trade with Russia?

- To weaken Russia's economy, western countries have targeted its energy exports. They have jointly agreed on an oil ban from Russia and decided to cap the maximum price of Russian oil at \$60 per barrel, which is significantly lower than the market price. This will make it more difficult for Russia to earn money from its oil exports. This was in response to the ongoing conflict in Ukraine.
- India has been paying for the oil in dollars all this while, but Russia has lowered its discounts due to high demand from China and lower-grade oil now being in short supply. This has led to fear of India's import of Russian oil breaching the oil cap.
- Due to the threat of western sanctions, financial institutions like banks are avoiding the transactions which breach the limits of this oil cap.
- As an alternative, India was in negotiations with Russia to activate the rupee-rouble trade arrangement. This has not taken off due to the following reasons:
  - India's trade deficit with Russia has touched \$43 billion in 2022-23. This has led to significant increase of Indian Rupees with Russian banks that can't directly be used by Russia in its war efforts.
  - Rupee-rouble convertibility is an issue. Experts have highlighted that the rouble's value is artificially inflated by capital controls of Russia and not determined by the market. On the other hand, Russia has expressed concerns about the volatility of the rupee.

### Is de-dollarization possible?

- The US dollar is the world's reserve currency, which means that it is the most widely used currency for international trade and investment.
- Some countries are concerned that the US can use its control over the dollar as a weapon, such as by imposing sanctions on countries it does not like.
- This has led to calls for de-dollarization, which means replacing the US dollar with other currencies as the global reserve currency.
- India is one of the countries that is looking at de-dollarization. It has recently released a roadmap for the internationalization of the Indian rupee, which would make it more widely accepted as a currency for trade and investment.
- However, it is important to note that the value and acceptability of any currency depends on its purchasing power. The Indian rupee is not as widely used as the US dollar, and its value is relatively low.
- India has also started to settle some payments for Russian oil in currencies other than the US dollar, such as the Chinese yuan and the UAE dirham.

### Way forward

- India – China relations have been tense since the escalation of border disputes. It might be difficult for India to continue to use Chinese Yuan for oil payments.
- India could work with Russia for more energy projects and investments in India and reduce the trade deficit along the way.

**Nut Graf:** India's oil imports from Russia have increased significantly in recent months. However, India faces difficulties in paying for these imports, as western countries have imposed sanctions on Russia and capped the maximum price of Russian oil. India is exploring ways to pay for Russian oil in currencies other than the US dollar, but this has been challenging.

## 2. Black Sea Grain Initiative

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Prelims:** Black Sea Grain Initiative

**Context:** Russia has said it is withdrawing from the Black Sea Grain Initiative.

### What is the Black Sea grain deal?

Ukraine is among the world's biggest exporter of foodgrains, such as wheat and corn, and a major contributor to the UN's food aid programmes. When Russia invaded the country and blockaded its ports, it sent food prices soaring and raised fears of food security in the poorer nations of the world. **Pakistan, for instance, saw wheat prices skyrocket** to crisis levels.

On July 22, 2022, the UN and Turkey got Russia to agree to the Black Sea Grain initiative, under which cargo ships would be allowed to travel from and to three Ukrainian ports of Odesa, Chornomorsk and Pivdennyi (Yuzhny), after inspection that they weren't carrying arms. The safe passage in the Black Sea was 310 nautical miles long and three nautical miles wide.





### Why has Russia not agreed to renew it?

Russia claims that the promises made to it under the deal have not been met, and it is still facing trouble exporting its own agricultural products and fertilisers because of the many sanctions the West has slapped on it.

While there is no direct restriction on Russia's agricultural products, the country says barriers on payment platforms, insurance, shipping and other logistics are hampering its exports.

"We have repeatedly shown goodwill to extend this deal," Putin told reporters July 13, as quoted by AI. "Enough is enough."

Russia has also said that it had agreed to the grain deal in order to help ensure global food security, but Ukraine has since exported mainly to high-and middle-income countries. The UN says while this is true, poorer countries have been helped by food prices cooling down.

### India's Position

- India voiced its support for the UN's endeavours to find a solution to the impasse created by Russia's decision to terminate the initiative.
- The country hopes for an early resolution to the situation, indicating its concern about the potential impact on food exports and fertilisers from Ukraine.

### Conclusion

- India's support for the UN's efforts shows its commitment to fostering international cooperation in resolving conflicts related to food and agriculture.
- The termination of the Black Sea Grain Initiative by Russia raises concerns about the continuity of food exports and fertilisers from Ukraine, and India's stance seeks to address these concerns and encourage a peaceful resolution.



### 3. Russian Crisis- Putin vs the Wagner Group

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Prelims:** Wagner Group

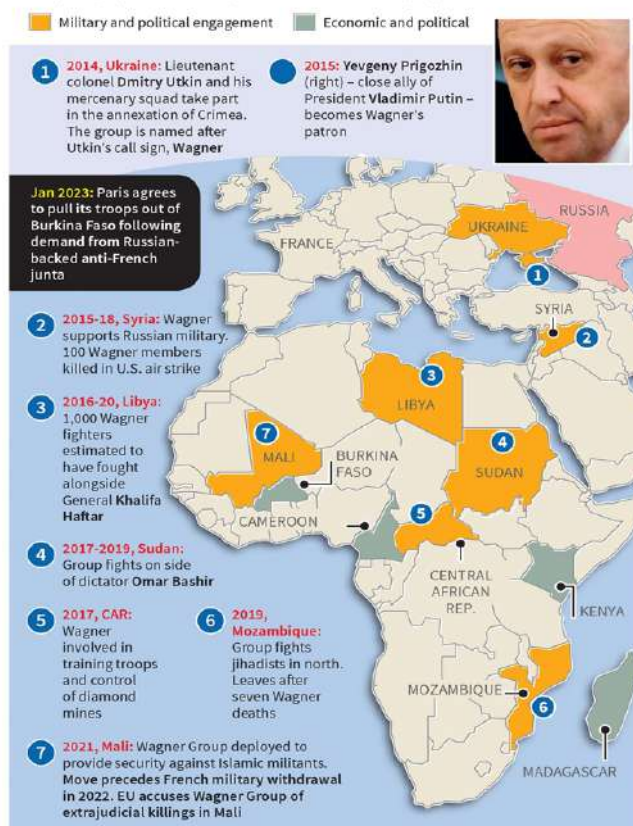
**Context:** The dramatic events that unfolded in Russia with an armed column of Wagner private military company marching towards Moscow have sent chills across the world

#### What is the Wagner Group?

- Officially known as the PMC Wagner, the mercenary organisation was first identified in 2014, during Russia's annexation of Crimea.
- It's essentially a network of contractors that supply soldiers for hire and the group got registered as a company in 2022 and opened a new headquarters in St Petersburg
- Initially, the Wagner Group remained mostly secretive and consisted of just 5,000 fighters, active particularly in Africa and West Asia. However, in the following years, it expanded to comprise "50,000 fighters" just in Ukraine

#### Mercenaries in Africa

The Wagner group, a Russian paramilitary organisation, has been involved in multiple counter-military operations in Africa. While legally, the group is not a Russia-based private military company, it works closely with the Russian security apparatus



Source: Brookings, the Grey zone

#### The Situation Unfolds and Current Status

- The "march of justice", as Wagner chief Yevgeny Prigozhin, a businessman and once President Putin's trusted associate, called his rebellion, was unprecedented in Russia's modern history but was very short-lived.
- Putin called actions that divide the country's unity "a betrayal of our people and the comrades who are currently fighting on the front lines", and compared the current situation with 1917 when, during the First World War, intrigues and disputes "behind the Army and the people turned into the greatest upheaval", resulting in the collapse of the Army, the disintegration of the state, and a civil war.

#### Reasons

- As Russian political analysts note, many of the issues raised by Mr. Prigozhin —
- Corruption
- Poor decision making resulting in high casualties on the frontline,
- The idea of invading Ukraine itself resonate with the common people.
- Russia had lost tens of thousands of troops
- Accused Defence Minister Sergei Shoigu of being the mastermind behind the invasion of Ukraine, driven by his personal ambition to enhance his own position.
- Mr. Prigozhin also claimed that Mr. Shoigu was supported by oligarchs seeking to exploit Ukrainian resources.

**Current Status**

- In his latest address to the nation, Mr. Putin offered three choices to Wagner fighters: sign a contract with the Ministry of Defense, return home or move to neighboring Belarus.
- "The overwhelming majority of the fighters and commanders of the Wagner group are Russian patriots, devoted to their people and country. They proved this with their courage on the battlefield"

**4. From American Exception-ism to Exception-ism**

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** India-US relations

**Context:** Since, 1998, the arc of the relationship between India and America has grown year-on-year, some years more than others, built by five American Presidents (Bill Clinton, George W. Bush, Barack Obama, Donald Trump, Joe Biden) and three Indian Prime Ministers (Atal Bihari Vajpayee, Manmohan Singh, Narendra Modi) over the first two decades of the 21st century.

**The Changing Relationship**

While the Clinton-Vajpayee-era gave impetus to summit-level diplomacy in the relationship, the Manmohan-Bush and Manmohan-Obama relationship highlighted nuclear diplomacy and Modi-Obama and Modi-Trump worked on trade and military diplomacy.

**Historical Overview**

- In 1998, just six months after the U.S. imposed sanctions on India mandated by the Arms Export Control Act, in November, Mr. Clinton signed a waiver to the sanctions on both India and Pakistan.
- The Bush administration's push for civil nuclear exemptions, resulted in the India-U.S. Joint Statement in 2005, a waiver under the Non-Proliferation Act, the Henry Hyde Act and the 123 Agreement with India, which also led to an India-specific exemption at the Nuclear Suppliers Group in 2008.
- The Obama visit to Delhi in 2010 saw a breakthrough in implementing all the waivers of the previous decade to make another set of exceptions for India on export controls and high technology trade and transfers under the U.S. Export Administration Regulations (EAR) and International Traffic in Arms Regulations (ITAR).
- The significance of all these exceptions was that they were made despite the fact that India never joined the Nuclear Non-Proliferation (NPT) Treaty regime; nor did it sign the Comprehensive Nuclear-Test-Ban Treaty.
- More importantly, these were "India-specific" waivers not available to other non-NPT countries such as Pakistan, and were crucial indicators of the shift in U.S. alignment in South Asia.

**The Exceptions**

- Over the past decade, the U.S.'s waivers have been on regulations dealing with Russia, such as the Countering America's Adversaries Through Sanctions Act (CAATSA) of 2017.
- The Trump administration avoided sanctioning India for the Russian S-400 missile system, but sanctioned Turkey and China for the same purchases. In 2022, the U.S. House of Representatives passed the "[Ro] Khanna amendment", which if made law, would exempt India entirely from CAATSA sanctions.
- In the wake of the Russian war in Ukraine, the U.S. has ruled out secondary sanctions against India for its considerable oil imports or defence engagement from Russia. This is indeed an exception, given that Mr. Biden ordered sanctions in 2022 on even German entities for the Nord Stream 2 pipeline.
- The more important is the shift in the U.S.'s belief in "American exceptionalism", to a more pragmatic era of "American exception-ism for India".

**But Why?**

- The first reason is obviously the promise of ties with India: the world's most populous nation, that has been an inclusive, pluralistic democracy for most of its history as a republic with a record in non-proliferation
- Second, there is India's attractiveness as an economic market and a military buyer.
- Third, there is India's geography in Asia, and its boundary problems from Beijing, that could make it a more dependable partner than European allies in providing a counter to China.
- Fourth, both Mr. Biden and Mr. Modi acknowledged the Indian-American diaspora, that has distinguished itself as a professional, law-abiding, prosperous and unproblematic community, and is the biggest votary of better India-U.S. ties.

**The Looming Challenge**

- Paradoxically, the biggest challenges to this relationship's untrammelled arc lie precisely in the mechanism used to strengthen it: the exceptions made for India, which can be reversed at any time. Former close partners of the U.S., such as Pakistan, Egypt, Turkey, Saudi Arabia and even China, today complain about the "fickleness" of American foreign policy towards them.
- Second, despite India's growth story, the relationship remains largely one-directional on issues such as investment, hardware or technology transfer, and thus require the U.S. to "give" and India to "take" more than the other way around, at a timetable decided by the U.S.

## 5. PM Modi's visit to France

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** India- France relations

**Context:** PM Modi paid a historic visit to France. Several key agreements were signed.

### Details

- This year 2023, India and France are celebrating 25 years of their strategic partnership.
- Over the past two and a half decades, India and France have developed a close and dynamic relationship based on shared values and a commitment to promoting peace, security, and sustainable development.
- This strategic partnership has been a major driving force behind their collaboration in key areas such as trade, defence, science, technology, and culture.

### Origins of French colonialism in India

The first French venture to Indian was around the 16th century when expeditions were sent to India for trade purposes. Not all of them were successful.

During the reign of Louis XIV, the king's famous minister Colbert laid the foundation of the Compagnie des Indes Orientales (French East India Company) in 1664. In which the king also took a deep interest.

First expedition to India, led by Francois Caron (French Governor), reached Surat in 1667 and established the first trading post (Surat) in the subcontinent.

Another factory was established in Masulipatam in 1669. In 1673, the township at Chandernagore near Calcutta was established. The same year, the French (Francois Martin) acquired the area of Pondicherry from the Sultan of Bijapur, thus establishing the Pondicherry colony (1674.).

In 1741, Joseph Francois Dupleix arrived in India as the governor of the French territories. Unlike his predecessors, he had a burning desire to establish a French empire in India despite the indifference of his superiors in Paris.

Colonial intrigues between the British and French. Despite Dupleix's dismissal, other French governors were more than willing to continue his work. They expanded their influence in Bengal which was a British sphere of influence.

It eventually resulted in the French egging Nawab Siraj ud-Daulah to attack Fort William in Calcutta leading to the **Battle of Plessey** in 1757. The defeat of the French and their allies resulted in the entire province of Bengal coming under direct British control. This would lead to a chain of events that would ultimately lead to the entire subcontinent coming under British control.

- Troops of the Punjab Regiment took part in both World Wars, as well as in post-independence operations.
- In the First World War, they were awarded 18 Battle and Theatre Honours.
- The Rajputana Rifles took part in some of the bloodiest battles of both the World Wars.
- Many Indians from IAF — including Welinkar, Shivdev Singh, H.C. Dewan and Jumbo Majumdar — fought over the skies of France during the two World Wars.
- A 242-member Indian military contingent marching in France's Bastille Day parade saluted chief guest Prime Minister Narendra Modi and French President Emmanuel Macron.

### Defence:

- France has emerged as a **key defence partner for India**, becoming the **second largest defence supplier in 2017-2021**.
- France has emerged as a **major strategic partner for India with crucial defence deals** and increased military to military engagement.
- **Example:**
  - **Induction of the French Scorpene** conventional submarines, being built in India under technology transfer agreement of 2005, and the Indian Air Force having received 36 Rafale fighter jets.
  - The **Tata group has also tied up with Airbus to manufacture C-295 tactical transport aircraft** in Vadodra, Gujarat.
  - **Military Dialogues and Regularly held Joint Exercises.**
- **Varuna (navy), Garuda (air force), and Shakti (army)**

### Economic Cooperation:

- France has **emerged as a key trading partner of India** with annual trade of USD 12.42 billion in 2021-22.
- It is the **11th largest foreign investor in India** with a cumulative investment of USD 10.31 billion from April 2000 to June 2022, which represents 1.70% of the total **foreign direct investment** inflows into India.

**Civil Nuclear Cooperation:**

- France was among the first countries with which India signed a **civil nuclear deal**.
- Paris also played a critical role in limiting India's isolation in the **non-proliferation order** after the 1998 nuclear tests.

**Cooperation at International Forum:**

- France supports India's bid for **permanent membership of the United Nations Security Council** as well as its entry into the Nuclear Suppliers Group.

**Climate Cooperation:**

- Both countries are concerned about **climate change**, where India has supported France in the **Paris Agreement** expressing its strong commitment to mitigating the effects of climate change.
- Both countries, as part of their joint efforts on climate change, launched the **International Solar Alliance** in 2015.

**Maritime Ties:**

- **Joint Strategic Vision of India-France Cooperation in the Indian Ocean Region** presents a blueprint for a strengthening of ties.
- French - Indian joint patrolling in the Indian Ocean signals India's intent to expand its footprint in the Indian Ocean by engaging with like-minded partners.
- Maritime security has further gained momentum as both countries have articulated their common vision for a free, fair and open Indo-Pacific.
- India and France in September 2022 agreed to set up an Indo-Pacific **Trilateral Development Cooperation Fund** that will support sustainable innovative solutions for countries in the **Indo-pacific region**.
- **India, France, UAE Trilateral Initiative** is aimed at ensuring maritime domain awareness and security from the east coast of Africa to the far Pacific.

**Space Cooperation:**

- India and France have continued to strengthen their cooperation in the field of space in recent years. Some of the recent developments in their space collaboration include:
  - **ISRO-CNES Joint Working Group:** In 2020, the Indian Space Research Organization (ISRO) and the French National Centre for Space Studies (CNES) established a Joint Working Group to further enhance their cooperation in the field of space.
  - **Joint Mars Mission:** In 2020, ISRO and CNES announced plans to collaborate on a joint Mars mission in the near future.
  - **Collaboration on Space Debris:** India and France have also been working together on addressing the issue of space debris.
  - **Joint Earth Observation Mission:** In 2021, ISRO and CNES announced plans to collaborate on a joint Earth observation mission, which will involve the development of a satellite to study the Earth's atmosphere and climate.

**PM Modi's visit**

- Narendra Modi has become the first Indian Prime Minister to be conferred the Grand Cross of the Legion of Honour, France's highest civilian and military honour.
- Defence Acquisition Council (DAC) has cleared proposals to buy 26 Rafale Marine fighter jets for the Indian Navy, along with 3 Scorpene submarines for the force.
- They have agreed to co-develop a combat aircraft engine and also an engine for the Indian multirole helicopter (IMRH) being designed and developed by Hindustan Aeronautics Limited.
- Both nations also announced cooperation on small and advanced modular nuclear reactors.
- Initiative to develop and launch Trishna satellite for earth observation, use in climate monitoring and operational applications.
- They have adopted a new Indo-Pacific Roadmap to work together to secure their economic and security interests and advance the rule of international law.
- Both agreed to work towards the establishment of an Indo-Pacific Trilateral Development Cooperation Fund that will support sustainable innovative solutions for countries in the region.
- Both countries are also working on adopting a Roadmap on Defence Industrial Cooperation. India will also set up a technical office of the DRDO at the Indian embassy in Paris.
- An agreement to roll out UPI in France and Europe.
- Indian students studying masters in France to get 5 year post study visa.





## 6. PM Modi's visit to UAE

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** India- UAE relations

**Context:** Prime Minister Narendra Modi visited the UAE and met President Sheikh Mohammed bin Zayed Al Nahyan.

### India – UAE Relations

- India's energy security: Indian imported crude oil worth US \$17.84 billion from UAE in 2022.
- Prior to Russia-Ukraine war, the UAE was India's third-biggest oil supplier after Iraq and Saudi Arabia and accounted for 10% of the country's crude oil imports.
- UAE has supported the Indian Strategic Petroleum Reserve project.
- Indian Diaspora: 3.8 million
- In Jan 2017, India-UAE elevated their ties by signing the Comprehensive Strategic Partnership Agreement.
- Intimate Security, Defence and Economic ties.



- India – UAE Relations
- Traditionally UAE was regarded as an ally of Pakistan. Now UAE is displaying a shift in policy by supporting India's stance on terrorism.



- Military exercises: Desert Eagle & Desert Flag
- India, France and UAE Maritime Partnership Exercise in June, 2023.
- India-UAE Comprehensive Economic Partnership Agreement (CEPA) signed in 2022.

India and the UAE have signed a Comprehensive Economic Partnership Agreement (CEPA) with the aim of increasing bilateral merchandise trade to \$100 billion by 2030.

#### How will the agreement boost bilateral trade?

Under the agreement, the UAE is set to eliminate duties on 80 per cent of its tariff lines which account for 90 per cent of India's exports to the UAE by value. This is Key domestic sectors that are set to benefit include, gems and jewellery, textiles, leather, footwear, sports goods, engineering goods, automobiles and pharmaceuticals.

#### PM's Visit

- India moved a step closer to increasing circulation of the rupee in the Gulf region with the signing of two memoranda of understanding (MoU) between the Reserve Bank of India and the Central Bank of the United Arab Emirates.
- It will establish a framework to "promote the use of local currencies (rupee and dirham) for cross-border transactions".
- The other MoU between the two central banks is aimed at interlinking their "payment and messaging systems".
- It will also include the mutual acceptance of domestic card schemes by interlinking national card switches.
- Integration between these systems will enhance access to payment services for the benefit of citizens and residents of the two countries.
- This comes against the backdrop of Indian entities commencing payment in yuan to Russian energy majors.
- It is likely to enhance the trend of doing business in local currencies that gained greater acceptance since the start of the Ukraine war.
- UAE holds COP-28 Presidency for 2023.
- They also signed an MoU to establish a campus of the Indian Institute of Technology (IIT) Delhi in the Gulf country.
- This agreement marks the second IIT to announce the establishment of an offshore campus, following IIT Madras in Tanzania.

### 7. India and UAE set to use rupee, dirham for trade

**Syllabus:** Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

**Mains:** India and the United Arab Emirates (UAE) Relations

#### Context:

India and the United Arab Emirates (UAE) have agreed to build a framework to promote the use of the rupee and the UAE Dirham (AED) in cross-border transactions.

#### India and MoU Agreement

- The Reserve Bank of India (RBI) and the Central Bank of the United Arab Emirates (CBE) have signed two Memoranda of Understanding (MoU) with respect to various topics.
- The first agreement will provide a framework to encourage cross-border transactions in local currencies (rupee and dirham).
- In accordance with the second MoU, the two central banks would work together to connect the Unified Payments Interface (UPI) of India with the Instant Payment Platform (IPP) of the UAE, as well as with RuPay switch and UAESWITCH.
- A messaging system that could compete with SWIFT (the Society for Worldwide Interbank Financial Telecommunication) will also be developed by both nations.

#### What is the Local Currency Settlement System (LCSS)?

- A Local Currency Settlement System (LCSS) would be implemented as part of the MoU on using national currencies to encourage the usage of the rupee and dirham.
- All permissible capital account transactions as well as current account transactions are covered under the agreement.
- Exporters and importers will be able to settle their invoices in their respective home currencies thanks to the LCSS, which will also help the INR-AED foreign exchange market grow.

#### Significance for India

- The Reserve Bank of India (RBI) and the Central Bank of the UAE made the decision to advance the development of their economic cooperation.
- Additionally, the LCSS agreement will encourage cross-border transfers of money and investments.
- Using local currencies will speed up settlement and cut down on transaction expenses, notably for Indian remittances to the UAE.
- India may utilise this system to pay for imports of goods from the UAE, its fourth-largest energy source, including oil and other commodities.
- Presently, India pays the UAE in dollars for its oil.
- Additionally, the Structured Financial Messaging System (SFMS) of India and the UAE's payments messaging system will be connected via the MoUs.

## Conclusion

As the central banks of the two countries agreed to “establish a framework to promote the use of local currencies for cross-border transactions,” India spearheaded the de-dollarization effort in the United Arab Emirates. The UPI-IPP link will allow users in either country to make cross-border financial transfers that are quick, convenient, secure, and cost-effective.

**Nut Graf:** The visit of the Prime Minister will provide an opportunity to determine how to advance the India-UAE comprehensive strategic partnership in a number of areas, including energy, education, healthcare, food security, fintech, defence, and culture.

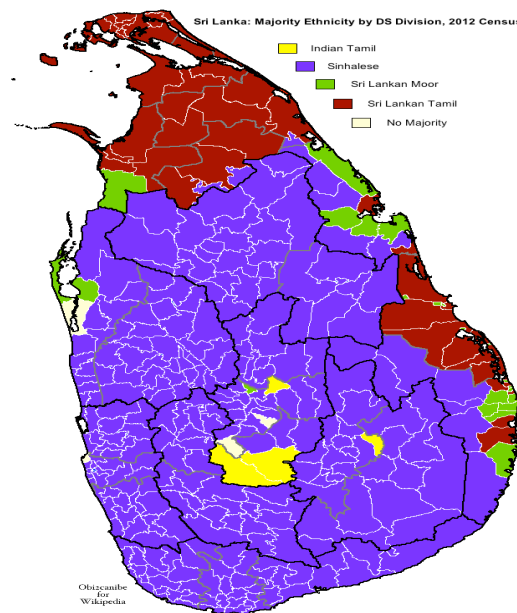
## 8. India - Sri Lanka Relations

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** India- Sri Lanka relations

### Context:

- Sri Lanka's President Ranil Wickremesinghe visited India last week.
- PM Modi expressed the hope that Wickremesinghe would be committed to implementing the 13th Amendment to Sri Lanka's constitution — which flows from the Indo-Sri Lanka Accord of 1987 — and holding provincial council elections.
- India and Sri Lanka also adopted a 'vision document' for a deeper economic partnership and announced several new initiatives.



### The Indo-Sri Lanka Accord of 1987

The 13th Amendment to Sri Lanka's constitution was made after the signing of the **Indo-Sri Lanka Accord between Prime Minister Rajiv Gandhi and President J R Jayewardene**, on July 29, 1987, in Colombo.

Under the 1978 constitution, Sri Lanka had a unitary government, with all powers in the hands of the Centre. The Tamil minority in Sri Lanka was concentrated in the Northern and Eastern provinces, and the struggle for rights and greater autonomy here had flared up into the long and bloody civil war between the **Liberation Tigers of Tamil Eelam (LTTE)** and the Sri Lankan government, with some other groups also involved. The 1987 Accord aimed at amending the constitution to transfer some powers to the governments of the country's nine provinces, thereby finding a constitutional solution to the civil war.

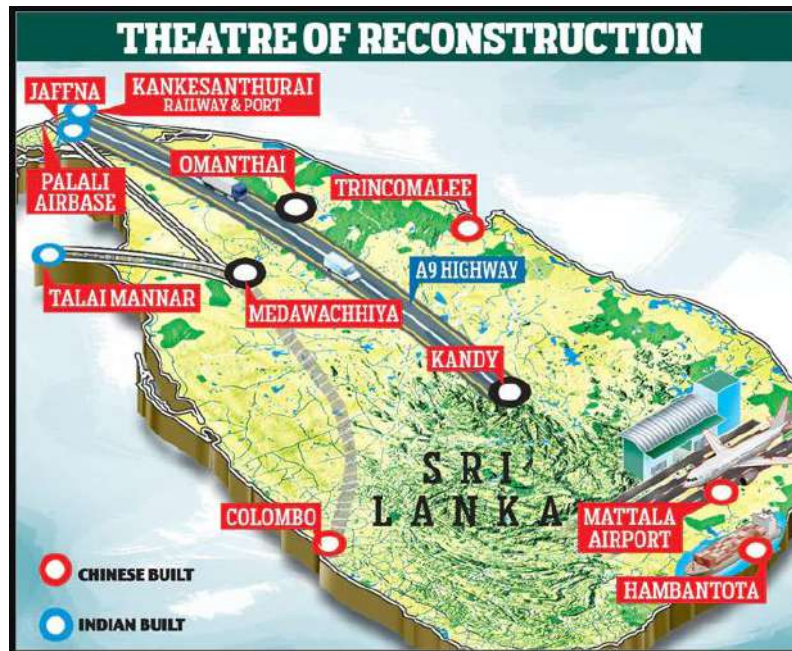
### What about the 13th Amendment's implementation?

While the armed struggle had been in the Northern and Eastern regions, provinces across Sri Lanka were given greater autonomy after the amendment. The Central government retains land and police powers, while the elected provincial councils (similar to state Assemblies in India) can legislate on subjects like agriculture, housing, road transport, education, and health, among others.

The separation of powers was never done fully, and while some are unhappy over too little devolution, the hardline nationalists raise alarms over the “weakening” of the Central government's authority. The **Sinhala nationalists** also oppose the 13th Amendment as they see it as imposed by India. Moreover, the regions that the devolution was primarily meant for never benefitted much from it.

### India – Sri Lanka Vision Document

- **Maritime Connectivity:** it outlines cooperation in development of ports and logistics at Colombo, Trincomalee and Kankesanthurai, with an aim to consolidate regional logistics and shipping.
- It also talks of resumption of passenger ferry services between Nagapattinam in India and Kankesanthurai in Sri Lanka besides working towards early resumption of ferry services between Rameswaram and Talaimannar.



- **Air Connectivity:** expansion of flights between Chennai and Colombo, besides exploring connectivity between Chennai and Trincomalee, Batticaloa and other destinations in Sri Lanka.
- **Energy and Power Connectivity:** the two sides plan to establish a high capacity power grid interconnection to enable bidirectional electricity trade between Sri Lanka and other regional countries, including those of the BBIN (Bangladesh, Bhutan, India, Nepal) initiative.
- Expediting “implementation of understanding reached” on the Sampur Solar power project and LNG infrastructure, and exploring cooperation in Green Hydrogen and Green Ammonia.
- The two countries will also be working on a multi-product petroleum pipeline from India’s South to Sri Lanka, besides undertaking a “mutually agreed” joint exploration and production of hydrocarbons in Sri Lanka’s offshore basins to develop Sri Lanka’s upstream petroleum sector.
- The two sides will also undertake discussions on the Economic and Technology Cooperation Agreement with an aim to comprehensively enhance bilateral trade and investments.
- Decision to designate Indian Rupee as currency for trade settlements between the two countries has forged stronger and mutually-beneficial commercial linkages. Both sides also agreed to operationalize “UPI-based digital payments” for further enhancing trade and transactions between businesses and common people.
- The two sides also agreed to leverage India’s Digital Public Infrastructure in accordance with Sri Lanka’s requirements and priorities towards effective and efficient delivery of citizen-centric services to the people of Sri Lanka.
- The two countries also plan “to promote awareness and popularize India’s Buddhist circuit and Ramayana trail as well as ancient places of Buddhist, Hindu and other religious worship in Sri Lanka for enhancing tourism.
- India also announced a development assistance package of ₹75 crore for the Tamils of Indian origin who are marking the 200th anniversary of their arrival in the island nation.

Tamil Nadu Chief Minister Stalin urged the Union government to initiate diplomatic efforts to revise the agreement to hand over Katchatheevu island to Sri Lanka.

## Major Issues with Sri Lanka

### ● Issue of Katchatheevu:



- The unpopular truth about the whole conflict is the allegations of Tamil fishermen entering Sri Lankan waters and the unresolved issue of the ownership of Katchatheevu Island, where Tamil fishermen have had traditional fishing rights for centuries.
- In 1974, the island was handed over to Sri Lanka after Indira Gandhi signed an agreement between the two countries without consulting the Tamil Nadu government.
- The treaty gave Indian fishermen “access to Katchatheevu to rest, dry their nests and celebrate the annual feast of St. Anthony,” but traditional fishing rights were not guaranteed.

### Distribution of Trawlers on the Indian Coast:

- Trawlers are mechanized boats with very useful fishing nets, unlike most of the poor fishermen along the Sri Lankan coast who use traditional fishing methods.
- The use of mechanized bottom trawlers was controversial among the countries' fishermen.
- The actions of Tamil Nadu fishermen have a negative impact on their fishermen in the northern province who are also struggling to make a living after the civil war.
- The island nation's recent economic crisis has only worsened its situation.

### Demarcation of the IMBL:

- Fishermen in Tamil Nadu are facing the problem of unavailability of fishing grounds due to the demarcation of the International Maritime Boundary (IMBL).
- As some fishermen from the border areas of Palki Bay in Tamil Nadu continue to violate the IMBL, incidents of many of them being arrested and their boats confiscated by the Sri Lankan authorities continue.

### Problems faced by Indian fishermen

- Indian fishermen face severely restricted access to traditional fishing grounds, increasing harassment by the Sri Lankan Navy, and arrest by the Sri Lankan Navy on criminal charges.
- Restoration of fishing rights to the traditional fishing grounds of Palki Bay has always been one of the top priorities of the Tamil Nadu government.

### Suggestions

- Regular patrolling, establishing communication channels and installing warning systems can significantly reduce harassment and arrests.
- The Tamil Nadu CM also suggested regular meetings and consultations for the joint task force set up in 2016, which he said will help build trust, facilitate effective communication and ensure smooth fishing.

## 9. STAR-C Initiative

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Prelims:** STAR-C Initiative

**Context:** India is considering expanding its Solar Technology and Application Resource Centres (STAR -C) initiative to a number of Pacific Island countries.

### About STAR-C Initiative:

- The programme aims to boost solar power ecosystems in the poorest countries.
- The initiative is run by the International Solar Alliance in partnership with the United Nations Industrial Development Organisation (UNIDO).
- The first three STAR-C centres are being set up in India, Morocco, and South Africa
- The centres are expected to be operational by 2024
- It aims to create a strong network of institutional capacities within ISA member states to enhance quality infrastructure for the uptake of solar energy products and services.
- The project is also funded by France.
- Programme's objectives: Building solar workforces, standardizing products, setting up infrastructure, and raising awareness among policymakers in developing countries.
- Through this initiative, India aims to enhance the institutional capacities of International Solar Alliance member states and contribute to the development of quality infrastructure for solar energy uptake.

### Benefits of STAR-C

- Increase the use of solar energy in member countries
- Create jobs in the solar sector
- Promote economic development
- Reduce greenhouse gas emissions

### Key Facts about International Solar Alliance

- It was conceived as a joint effort by India and France to mobilize efforts against climate change through deployment of solar energy solutions.
- It was conceptualized on the side-lines of the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris in 2015.
- With the amendment of its Framework Agreement in 2020, all member states of the United Nations are now eligible to join the ISA.
- **Headquarter:** India

## 10. India backs 2016 ruling favouring the Philippines in South China Sea

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** Challenges to Free and Open Indo-Pacific

### Context:

Mr. Manalo, Secretary of Foreign Affairs of the Philippines has arrived in India on an official visit to strengthen ties between India and the Philippines. China's assertiveness in the South China Sea was discussed in this context.

### Introduction:

- China and the ASEAN countries are negotiating for a Code of Conduct in the South China Sea.
- In this regard, India has called for adherence to the 2016 arbitration decision in favour of the Philippines.

### What was the Arbitration Decision?

In 2013, the Philippines took the matter to the Permanent Court of Arbitration to resolve their dispute with China over rights to the South China Sea. The Arbitral Tribunal, established under UNCLOS, made several key rulings in favour of the Philippines:

- China's claims to historic rights within the nine-dash line were found to be contrary to UNCLOS and beyond the geographic limits set by it.
- The Tribunal determined that China's construction and presence on artificial islands and structures did not change the legal status of these features, meaning they cannot generate an Exclusive Economic Zone (EEZ) or a continental shelf (CS).
- The Tribunal ruled that China's action violates UNCLOS in several ways, including temporarily banning fishing in the Philippines EEZ, failing to prevent Chinese vessels from fishing in the Philippines EEZ, preventing Filipino fishermen from traditional fishing at Scarborough Shoal, constructing artificial islands without the Philippines' authorization, and causing damage to the coral reef ecosystem through land reclamation and construction in the Spratly Islands.



**What are the difficulties in concluding the negotiations of the Code of Conduct?**

- China has rejected the 2016 Arbitral award and considers it null and void. This creates a significant hurdle to reaching a resolution.
- China's increased assertiveness in the South China Sea limits the likelihood of finding a mutually agreeable solution.
- ASEAN countries have differing views, and there is no unified stance on all issues. This lack of consensus among member nations makes it challenging to reach a final solution.
- The code of conduct will need to address a variety of details, such as what to do in the event of a collision at sea, how to deal with third parties, and whether the code will be legally binding. There has been no consensus on this.
- Manila's efforts to strengthen its military presence in the region, while emphasizing its desire to assert rights and protect its fishermen, are met with opposition from China. This disagreement could potentially contribute to a stalemate in the negotiations.

**Nut graf:** India aims to enhance its ties with the ASEAN nations as part of its strategy to maintain a free and open Indo-Pacific region and establish a rules-based order. This pursuit has far-reaching implications for the balance of power, as well as economic and trade relations in the region.

**11. A new chapter in India-Africa ties can be written**

**Syllabus:** GS-2, Effect of Policies and Politics of Developed and Developing Countries on India's interests, Indian Diaspora.

**Mains:** India – Africa Relations and opportunities for shared development.

**Context:**

Africa has nearly 17% of the world's population and is projected to reach 25% by 2050. India's rise as a key player in global affairs is closely tied to its partnership with Africa.

**Introduction:**

India and Africa are two continents with a lot of potential for cooperation. A recent report titled "India-Africa Partnership: Achievements, Challenges and Roadmap 2023" makes recommendations for how India can deepen and diversify its partnership with Africa.

**What is the current state of geo-politics in Africa?**

- While progress is being made towards regional integration and the pursuit of democracy, peace, and progress, countries like Ethiopia, Sudan, and the Central African Republic continue to grapple with insurgency, ethnic violence, and terrorism.
- The landscape is further shaped by the competition among various external partners, including China, Russia, the United States, and the European Union who seek to strengthen their relations with different parts of Africa for market access, energy security, and political and economic influence.
- China has emerged as Africa's prominent economic partner, investing significantly in infrastructure development, resource provision, and financing.
- In contrast, India maintains a substantive partnership with Africa and enjoys substantial goodwill. However, the report emphasizes the need for New Delhi to periodically review its Africa policy, adapt to necessary changes, and implement it with utmost focus.

**What are the recommendations to improve India – Africa relations?**

- **Political and diplomatic cooperation:** The report recommends that India and Africa hold regular summits and dialogues to discuss common challenges and opportunities. For example, apart from the India Africa Forum Summits, the report calls for an annual strategic dialogue between the chairperson of the African Union (AU) and India's External Affairs Minister. It also calls for the entry of AU into the G-20.
- **Defence and security cooperation:** The report recommends that India and Africa increase their cooperation on defence and security issues, such as counter-terrorism and maritime security. It calls for expanding the credit lines for defence exports from India.
- **Economic and development cooperation:** The report recommends that India and Africa increase their trade and investment ties, and that India provide more development assistance to Africa. India Africa trade can increase further from \$98 billion in FY 22–23 if an **Africa Growth Fund** is established. The report also calls for an increase in exports by improving the logistics infrastructure, especially in the shipping sector.
- **Socio-cultural cooperation:** The report recommends that India and Africa increase their cultural and educational exchanges, and that India make it easier for Africans to study and work in India. The scholarships provided by the Indian Technical and Economic Cooperation (ITEC) and the Indian Council for Cultural Relations (ICCR) to African students should be named in honour of renowned African figures.

**Conclusion:**

The report's recommendations are timely, as India and Africa are increasingly interconnected in the 21st century. By deepening and diversifying its partnership with Africa, India can help to promote peace, security, and prosperity on the continent.

**Nut Graf:** India – Africa relations have the potential to reach the next stage with opportunities for cooperation in Global Fora, Defence, Trade and Social Cultural domains. The report provides a timely reminder of the actions needed from New Delhi to realise this potential.

## 12. Iran to join Shanghai alliance with China, Russia next week: Lavrov

**Syllabus:** Current events of national and international importance.

**Prelims:** Shanghai Cooperation Organisation

- Iran is expected to be approved as a member of the Shanghai Cooperation Organization (SCO) in the second week of July 2023.
- The SCO is a regional intergovernmental organisation focused on regional security issues, regional terrorism, ethnic separatism and religious extremism.
- The SCO has eight member states: China, India, Kazakhstan, Kyrgyzstan, Russia, Pakistan, Tajikistan, and Uzbekistan. Four observer states—Afghanistan, Belarus, Iran, and Mongolia—are interested in acceding to full membership, and six dialogue partners—Armenia, Azerbaijan, Cambodia, Nepal, Sri Lanka, and Turkey—are also involved with the organization.
- India and Pakistan joined the SCO in 2017.
- Iran has been an observer state of the SCO since 2005, and Belarus has been an observer state since 2015.

## 13. What is China's new law on foreign relations?

**Syllabus:** Effect of policies and politics of developed and developing countries on India's interests

**Mains:** Impact of China's Policies on South Asia

**Context:**

- A new Law on Foreign Relations was adopted by the China's legislature. Experts believe this will tighten President Xi Jinping's control over the foreign policy.

**What is the new law?**

- According to China, the law aims to strengthen its sovereignty, national security, and development interests and help her to better deal with challenges to its foreign policy.
- Primary objective of the law appears to give legal recognition to the goals of President Xi, and to criminalize actions by individuals or organizations that are seen as opposing those objectives.

**What will be the impact on foreign policy?**

- President Xi's vision of foreign policy will now come with the legal authority. For example, the Belt and Road Initiative (BRI), the Global Development Initiative (GDI) and the Global Security Initiative (GSI) will now have the legal stamp. Challenging this will be equivalent to violating the Chinese Laws.
- The law also prioritizes security over development and opening up its economy. This has major strategic implications for both China and the world.
- It also mentions that China has the right to take "countermeasures" against countries that violate international law or fundamental norms governing international relations. This is in response to Western sanctions aimed at China. It makes western companies operating within China impossible to comply with the sanctions aimed at the country.
- Article 19 of the law states that Beijing will "respect the sovereignty of recipient countries" and "not interfere in their internal affairs or attach any political conditions to its aid." This is likely an attempt to address concerns that China's lending practices have led to debt crises in some countries.

**What does the new law mean for India?**

- Similar to the Border Law adopted by China in 2021 (this law also gave legal sanctity to President Xi's vision on China's borders), the emphasis on security, sovereignty and territorial integrity might bring back the focus on Line of Actual Control (LAC) in India-China relations.
- The new laws on foreign affairs and the borders coincide with Beijing's framing of territorial disputes as matters of national sovereignty, rather than issues to be negotiated by two sides. This framing could narrow the scope for resolution of these disputes.
- Important Articles of the new law which will be of interest to India's policymakers
  - **Article 31** of the law states that the implementation and application of treaties and agreements shall not undermine the sovereignty of the State, national security, and public interests. This could have a potential bearing on the signing of agreements to resolve border disputes.
  - **Article 8** of the law states that any organization or individual who commits acts that are detrimental to China's national interests in violation of this law and other applicable laws in the course of engaging in international exchanges shall be held accountable by law.
  - **Article 33** of the law states that the government has the right to take, as called for, measures to counter or take restrictive measures against acts that endanger its sovereignty, national security, and development interests in violation of international law or fundamental norms governing international relations.
  - What is deemed as "detrimental to China's national interests" is not clear, giving the Chinese authorities a wide scope in implementation.

**Conclusion:**

President Xi's control over China's internal and external affairs now has the legal sanctity with significant repercussions on both China and the World.

**Nut Graf:** China's new law on foreign relations gives President Xi Jinping more control over foreign policy. The priority of security over development will have implications for China's relations with the world in general and India in particular.

#### 14. Why has the IMF's view on the crypto market in Latin America changed?

**Syllabus:** International Relations: Important International institutions, agencies, their structure, and mandates.

**Prelims:** International Institutions

**Mains:** IMF and cryptocurrency

**Context:**

The International Monetary Fund (IMF) has issued a statement on the use of cryptocurrency in Latin America and the rising interest in central bank digital currencies (CBDCs). This comes as countries like El Salvador adopt Bitcoin as legal tender.

**Introduction**

- On June 22, the International Monetary Fund (IMF) issued a statement on the use of cryptocurrency in the Latin American and Caribbean market and the rising interest in central bank digital currencies (CBDCs).
- The IMF expressed reservations about El Salvador's adoption of Bitcoin as legal tender and warned about fiscal risks and consumer protection issues.

**Significance of Latin America's Crypto Economy**

- Argentina, Chile, and Columbia have experienced currency devaluation against the U.S. dollar, leading some residents to explore converting their funds to stablecoins.
- Brazil, Argentina, Colombia, and Ecuador are among the top 20 countries in Chainalysis' 2022 Global Crypto Adoption Index.
- Several Latin American central banks are considering CBDCs, which could increase exposure to blockchain-based infrastructure.

**El Salvador's Distinctive Crypto Economy**

- El Salvador became the first country to adopt Bitcoin as legal tender on September 7, 2021, under President Nayib Bukele's leadership.
- President Bukele is a prominent crypto supporter and has continued to buy Bitcoin despite market crashes.
- The country uses the Chivo digital wallet to regulate crypto transactions, but there have been complaints about the wallet's functionality.
- El Salvador's ambitious plans, including issuing Bitcoin bonds and building a 'Bitcoin City,' were delayed due to market volatility and a focus on tackling gang activity.
- The country's Bitcoin investment value has dropped by 26.3% as of June 29, 2023, from the time of adoption.
- Bukele's prediction of Bitcoin reaching \$100,000 by the end of 2022 did not materialize, and Bitcoin's value remains around \$30,000.

**For detailed information on the significance and concerns with respect to the adoption of Bitcoin as the official currency by El Salvador, refer to the following article:**

**IMF's Reaction to El Salvador's Bitcoin Adoption**

- The IMF opposed El Salvador's move, citing fiscal risks and consumer protection concerns.
- The IMF's executive directors urged El Salvador to remove Bitcoin's legal tender status and expressed reservations about Bitcoin-backed bonds.
- The country was warned that its Bitcoin adoption might affect its application for a loan of \$1.3 billion.

**IMF's Surprising Stance on Cryptocurrency and CBDC Use in Latin America**

- The IMF's latest blog post suggested that completely banning crypto assets may not be effective in the long run for the Latin American and Caribbean region.
- Instead, the IMF called for improving financial infrastructure and providing better support to reduce reliance on cryptocurrencies.
- The post also emphasized the need for cryptocurrency regulation and transparent recording of crypto transactions.

**Difference Between Cryptocurrency and CBDCs**

- Cryptocurrencies are privately run digital currencies, while CBDCs are controlled and tracked by a country's central bank and correspond to the fiat currency of that country.
- Cryptocurrencies like Bitcoin have volatile prices and are often seen as investment vehicles, while CBDCs are not meant for investment purposes.
- Examples include China's digital renminbi (e-RMB) and the Bahamas' Sand Dollar CBDC.

### Conclusion

- The IMF's evolving stance on cryptocurrency and CBDCs in Latin America, including its surprising support for crypto regulation rather than a ban, has raised interest in the region's financial landscape.
- El Salvador's unique adoption of Bitcoin as legal tender has faced challenges and has not met the expected outcomes, prompting caution and debate about the future of crypto economies in the region.

**Nut Graf:** The IMF's shift in stance on cryptocurrency in Latin America, and its reservations about El Salvador's Bitcoin adoption, have drawn attention to the region's crypto economy and the potential for CBDCs.

## 15. The calm after the storm for Pakistan?

**Syllabus:** Effect of policies and politics of developed and developing countries on India's interests

**Mains:** Political and Economic Crisis In Pakistan and its implications

### Recent Development

- Pakistan had a number of difficulties, including conflicts between the political parties, battles between the administration and the opposition, an economic collapse, and the devastation caused by the floods in 2022.
- The Elections (Amendment) Act 2023, just passed by the Parliament, gives the Election Commission of Pakistan (ECP) sole authority over the choice of when to hold elections.
- Pakistan has been successful in obtaining International Monetary Fund (IMF) assistance on the economic front. However, the bigger problems still exist, such as the requirement for macroeconomic reforms, the already constrained tax base, etc.
- Uncontrolled rioting broke out after a political figure was taken into custody on suspicion of corruption. The protests were started by his fans and other party members.
- Since the violence, the Establishment has used overt pressure in addition to direct action.
- The Establishment thus succeeded in creating a new narrative that the violent offenders were Pakistan's deadliest foes.

### Challenges associated with Pakistan Crisis

- **Political Instability:** Political insecurity has ended, not via conversation between political players, but by the ruthless shrinkage of one party, by an extra-political institution. Constant political turbulence is thought to make it more difficult to formulate timely and effective policy.
- **Economic Crisis:** Pakistan was in danger of going bankrupt, was experiencing extreme inflation, and had a foreign reserve that could only last a few more months. Pakistan has to reapply to the IMF with updated estimates despite various political bravos and hopes that friendly nations will assist Pakistan in overcoming the economic crisis.
- **Debt:** According to CEIC figures, the nation's external debt reached \$126.9 billion in September 2022. The danger level for Pakistan's debt-to-GDP ratio is 70 percent, and this year, 40 to 50 percent of government revenue would be used to pay interest.
- **High Pakistan inflation:** As a result of the government's cash-strapped decision to restrict imports, thousands of containers of food, raw materials, and equipment are sitting in ports, pushing up inflation to a 48-year high.
- **Significant shortage of power and energy:** Pakistan is heavily dependent on imports, especially when it comes to energy, making it particularly sensitive to increases in the price of oil and gas around the world. Due to its massive debt load and inability to fund infrastructure and power lines, Pakistan lacks the resources necessary to operate its oil and gas-powered plants.
- **Devastating floods:** As Pakistan's economy recovered from the effects of COVID-19, an overdue adjustment was taking place. However, it's possible that the recent flood's economic effects have put off the crucial economic adjustment.

**Nut Graf:** Pakistan continues to put its faith in the International Monetary Fund (IMF) for a bailout from its severe economic crisis despite increasing debts and skyrocketing inflation. However, the developing political issue might prevent that.

## 16. India should refuse America's 'NATO Plus' bait

**Syllabus:** GS-2, Effect of policies and politics of developed and developing countries on India's interests

**Mains:** NATO Plus and Critical Analysis of India's Inclusion into NATO

### Recent Developments

- Recently during the Prime Minister of India's visit to the U.S., the Senate India Caucus Co-Chair shared his plans to table a bill to bring India into the NATO Plus fold.
- The United States Permanent Representative to NATO quoted during a virtual press briefing in 2023 that the NATO alliance is open to more engagement, should India seek that.
- A recent United States congressional report stated the United States should strengthen the NATO Plus arrangement to include India.
- India's External Affairs Minister has stated that India has no intention of joining NATO, citing that the military alliance is not suitable for India.

### What is NATO?

- NATO is a transatlantic military alliance made up of 31 nations, with the majority of its members being from Europe.
- Finland has become the 31st member of the NATO alliance.
- NATO appears to be gaining much-needed ground for survival as a result of Russia's invective against it and the invasion of Ukraine.

### What is NATO Plus?

- NATO plus refers to a security partnership between NATO and the five nations that make up the United States treaty allies: Australia, New Zealand, Japan, Israel, and South Korea.
- NATO Plus is a privileged group within the alliance umbrella that includes AUKUS countries as well as Japan and South Korea.

### India's Inclusion in NATO Plus

- The inclusion of India in NATO Plus is being proposed in order to confront China and strengthen Taiwan's deterrent.
- Australia, Japan, South Korea, New Zealand, and Israel are five more NATO Plus members that are regarded as US friends.
- The US is currently inviting India to join this wider coalition that stands against enemies.

### Why did the US invite India to join NATO?

- The United States is of the opinion that India should participate in NATO in order to protect its borders from Chinese intrusion and to strengthen international security against Chinese aggression in the Indo-Pacific area.
- It aspires to improve international defense cooperation and triumph over China in the strategic rivalry.
- The US and India's close alliance would be strengthened by including India in NATO Plus security arrangements, which would prevent Chinese aggression and strengthen global security.
- The US seeks to isolate Russia, obtain India's defense contracts, and take advantage of the country's advantageous location in the Indo-Pacific.

### Gains with India being a NATO member

- India might benefit from a security umbrella, protection from prospective attacks, and deterrent if it joins NATO Plus in view of the growing regional security issues.
- The expansion of NATO is viewed as a geopolitical measure to further secure the security of countries under Chinese pressure, such as Taiwan and India.
- Greater military support for India, particularly in the Indo-Pacific, would result from joining NATO.
- Additionally, it conveys to China the importance of fortifying partnerships among its rivals.
- Additionally, India would likely have access to developments in military technology and intelligence exchange among NATO members.
- India might have access to cutting-edge military innovations, platforms for intelligence-sharing, and member-state interoperability. This might improve India's defense capability and modernization initiatives.

### Concerns about India being a NATO member

- **India's Strategic Autonomy in Danger:** The strategic autonomy India enjoys over its nuclear weapons may be impacted by NATO membership, which could result in restrictions on free trade.
- **Tussle in India – Russia Ties:** If India joins the US-led NATO alliance which is backing Ukraine in the current war with Russia, it will directly impact India's strong, established and deep ties with Russia.
- **US Military Base in India:** The US would eventually have a military facility in India if it joined NATO Plus considering the other NATO+ members, who are all currently home to US military installations. India, on the other hand, thinks it can defend itself against any Chinese assault without such an arrangement.
- **Countering Chinese Aggression:** India emphasizes China's current economic problems, which is demonstrated by decreased imports and exports, undermining the need for NATO membership to thwart Chinese aggression. India insists that it is capable of meeting any difficulties that China may present on its own.
- **India will be Dragged into American Conflicts:** India would effectively be drawn into American battles if it joined NATO. Due to China's threats, it may seem alluring to join an alliance system led by the United States, but doing so could ultimately be damaging and unproductive.
- **Limit India's Freedom of Action:** India's security will be made more difficult if it joins the U.S.'s Taiwan strategy under NATO Plus at a time when it has its own bilateral difficulties with China and an Indo-Pacific strategy.

### Way Forward

India's priority is to confront its own regional dynamics, which include a distinct set of security concerns such as border disputes, terrorism, and regional conflicts. Although NATO has some capabilities to address these problems, it's bigger geopolitical agenda, which spans from Eurasia to the Indo-Pacific, may divert resources and attention from these urgent problems, making it less helpful to India. While China still dominates its summits, India's posturing through the Quad now appears more promising than the NATO Plus bait.

**Nut Graf:** While NATO's initial focus was on the Soviet Union and is now on Russia, NATO Plus is unmistakably focused on limiting China. Some academics even predict the start of Cold War 2.0 as NATO expands. Despite the temptations to join the NATO plus grouping considering the Chinese threats, India should take the middle path and give utmost importance to strategic autonomy in matters of security and defence.



## 17. What are the takeaways from the NATO summit?

**Syllabus:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** NATO's stance in evolving Global order and its impact on Global peace

**Context:** The NATO summit in Vilnius focused on Ukraine's potential membership, expanding the alliance, U.S. support, and emerging threats from China and Russia.

### How this NATO summit was different?

- **Inclusion of Ukrainian President:** The Vilnius Summit stood out for the attendance of Ukrainian President Volodymyr Zelenskyy, highlighting the possibility of extending NATO membership to Ukraine.
- **NATO-Ukraine Council:** The summit established the NATO-Ukraine Council as a crisis consultation and decision-making forum to engage Ukraine and potentially pave the way for future membership.
- **Limited immediate gains for Ukraine:** While the summit brought promises, President Zelenskyy's priorities, such as new weapons packages, security guarantees, and an invitation to join NATO, were not immediately fulfilled.
- **Strengthening NATO's defenses:** In response to the crisis in Eastern Europe, NATO plans to maintain a force of 300,000 troops, with air and naval capabilities and endorsed a Defence Production Action Plan.

### Significance of the entry of new members:

- **Finland and Sweden joining NATO:** The approval of Finland and Sweden as NATO members demonstrated the alliance's adherence to Article 10 of the Washington Treaty, enabling member countries to invite other European countries to join NATO.
- **Fertile grounds for Ukraine's membership:** The inclusion of Finland and Sweden indicates a supportive environment for Ukraine's potential membership, potentially deterring Russia from taking aggressive actions against NATO members.
- **Turkey's changing stance:** Turkey's scaling back of opposition to Sweden's inclusion in NATO marked a significant shift, possibly aiming to improve relations with the U.S., which could benefit Turkey's economy and bilateral issues.

### US's stance at the summit:

- **President Biden's support:** U.S. President Joe Biden reaffirmed unwavering support for NATO and Ukraine, diverging from the previous administration's approach, where Donald Trump had considered withdrawing the U.S. from NATO.
- **Political legacy:** President Biden sees his support for Ukraine as a key aspect of his administration's political legacy, not only in strengthening trans-Atlantic solidarity but also gaining bipartisan consensus on Ukraine domestically.

### Other emerging threats to NATO:

- **China's ambitions and policies:** The Vilnius Summit highlighted the challenges posed by China's aggressive cyber operations, confrontational rhetoric, and disinformation targeting NATO allies, making China an emerging threat to the Alliance.
- **Relevance of the Indo-Pacific:** The summit recognized the increasing significance of developments in the Indo-Pacific for Euro-Atlantic security, with expanding space for QUAD countries, New Zealand, South Korea, and others.
- **The undeterred approach of Russia:** Despite the summit's discussions on potential NATO expansion, Russia's drone attack on Kyiv during the summit indicated an unyielding stance, suggesting that the future of Eurasian security is still contested.

**Nut Graf:** The NATO summit in Vilnius highlighted the possibility of Ukraine's membership, approved Finland and Sweden's inclusion, gained U.S. support for the alliance and Ukraine, and addressed emerging threats from China and Russia.

## 18. SCO calls for multipolar world order as Iran joins grouping

**Syllabus:** Regional and global groupings

**Mains:** Bilateral, regional and global groupings and agreements involving India and/or affecting the Indian interests

**Prelims:** Shanghai Cooperation Organisation (SCO)

### Context:

The virtual summit of the Shanghai Cooperation Organisation (SCO) chaired by Indian Prime Minister Narendra Modi discussed the need for a more representative and multipolar world order.

### Introduction:

The virtual summit of the Shanghai Cooperation Organisation (SCO), chaired by Mr Modi, addressed the importance of establishing a "more representative" and multipolar world order. The summit witnessed the induction of Iran as the ninth member of the SCO. While several agreements were signed, India's refusal to join in certain statements highlighted a lack of consensus within the group. Prime Minister Modi expressed concerns regarding cross-border terrorism and China's connectivity projects that disregard sovereign boundaries.

### Expansion and Composition of SCO:

- The SCO now consists of China, India, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan, and Uzbekistan.
- Iran's induction as the latest member reflects the SCO's commitment to broadening its representation.

### Agreements and Declarations:

- The New Delhi Declaration: Outlined areas of cooperation between SCO countries.
- Joint Statement on Countering Radicalisation: Addressed the need to combat radicalisation and promote stability.
- Joint Statement on Digital Transformation: India offered expertise on digital payment interfaces for sharing within the SCO.

### Concerns and Lack of Consensus:

- India's stance on China's Belt and Road Initiative (BRI): India abstained from supporting the BRI paragraphs in the joint statement due to its inclusion of projects in Pakistan-occupied Kashmir.
- India's absence from the SCO Economic Development Strategy 2030: India's refusal to participate in the joint statement suggests a lack of consensus within the group.

### Criticism of Terrorism and Connectivity Projects:

- Prime Minister Modi's criticism of Pakistan: He accused Pakistan of cross-border terrorism.
- Prime Minister Modi's criticism of China: He expressed concerns about China's connectivity projects that disregard sovereign boundaries.

### SCO's Stance on Sanctions and Currency Use:

- Joint criticism of non-UN sanctions: SCO members expressed opposition to sanctions on Russia and Iran, considering them incompatible with international law and negatively impacting other countries.
- Exploring the use of national currencies: SCO members agreed to explore the use of national currencies for payments within the group to bypass dollar-based international transactions.

### Statements by Pakistan PM Shehbaz Sharif and Chinese President Xi Jinping:

- Pakistan PM's statement on terrorism and minority rights: Shehbaz Sharif emphasised condemning terrorism in all its forms and manifestations, including state terrorism, and urged against demonising religious minorities.
- Chinese President's remarks on the Belt and Road Initiative and Global Security Initiative: Xi Jinping highlighted the 10-year anniversary of the BRI and proposed the Global Security Initiative (GSI) to promote political settlements in regional hotspots and prevent a new Cold War or camp-based confrontation.

### Global Challenges and Vision:

- The Delhi Declaration's focus: The declaration acknowledged global challenges such as conflicts, market turbulence, supply chain instability, climate change, and the COVID-19 pandemic.
- Commitment to a multipolar world order: The member states reaffirmed their commitment to a more representative, democratic, just, and multipolar world order based on international law, multilateralism, and equal cooperation, with the UN playing a central coordinating role.

**Nut Graf:** The SCO summit saw the induction of Iran as its ninth member, agreements on cooperation, and India's abstention from statements on China's Belt and Road Initiative (BRI), highlighting a lack of consensus.

## 19. The long road to finding true peace in Yemen

**Syllabus:** General Studies 2 – Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** Yemen Crisis, India – West Asia relations.

- In April 2023, Saudi Arabia and Houthi rebels agreed to a six-month truce and three months of talks on a potential way ahead for Yemen.
- The Houthis requested that the Saudi-led blockade of Sanaa airport and Hodeidah port be lifted, and that the Saudis pay the salaries of Yemeni government officials from Yemen's oil revenues.

### Current State of the War:

- The war in Yemen has reached a standstill, with the Houthis in control of the capital, Sanaa, and the principal port, Hodeidah. The Saudi-led coalition controls the sea, the sky, and large parts of the southern regions of Yemen.
- Yemen is undergoing a severe humanitarian crisis, with 80% of its people (over 20 million) needing assistance, and six million on the brink of starvation.
- The Saudi-Iran accord brokered by China in March paved the opportunity for the Saudi-Houthi engagement in April.
  - **Progress so far:**
    - Exchange of prisoners.
    - Easing of the blockade on Sanaa and Hodeidah.
    - Humanitarian aid has started to reach those in need.
    - Easing of the air blockade – flights have taken Yemeni pilgrims to Mecca for the Haj.

**Challenges to the peace process:**

- The Houthis insist that Saudi Arabia pay the salaries of all government officials, including armed forces personnel, for the last few years from Yemen's oil revenues.
- The Houthis want the Saudis to pay compensation for the damage that was caused to their country during the war. The Saudis are willing to help rebuild Yemen, but they don't want to pay compensation as this means Saudis have to acknowledge that they were responsible for the war.
- The Houthis are reluctant to engage the Saudi-backed government in Yemen. With the Saudis desperate to get out of the country, the Houthis understand that the PLC (Saudi-backed government) will lose the credibility and standing it currently holds.
- The Southern Transitional Council (STC), a United Arab Emirates (UAE)-backed movement based in Aden (Yemen), wants the southern provinces of Yemen to once again become an independent state. UAE benefits from this as its dominance over the Western Indian Ocean will be further improved.
- Saudi Arabia, on the other hand, is seeking a united Yemen so that it can assert influence over the south Yemeni provinces of Hadhramaut and Al-Mahra.
- Iran is likely to continue its relationship with the Houthis and strengthen its presence in the Red Sea. This will affect the interests of Saudi Arabia.

**India's Relationship with Yemen**

- India has been importing oil from Yemen for many years. However, the bilateral trade between the two countries has considerably reduced from close to \$1 billion in 2013 to just over \$200 million in 2022. This is due to the ongoing civil war in Yemen, which has disrupted the country's economy and made it difficult to export oil.
- In 2015, the Indian government launched Operation Rahat, a humanitarian mission to evacuate Indian nationals from Yemen. The mission was successful in evacuating over 4,000 Indians from the country.
- In 2017, two Indian oil companies, OIL India and IOCL, had to relinquish the oil blocks they won in 2009. This was due to the deteriorating security situation in Yemen.
- Despite the challenges, India has continued to provide humanitarian assistance to Yemen. India has also been facilitating the education of many Yemenis in Indian institutions.

**Conclusion:**

Overall, the peace process in Yemen is facing a number of challenges, including the competing interests of regional powers and the Houthis' insistence on their demands. It remains to be seen whether the two sides will be able to reach an agreement that will bring an end to the war and allow for the reconstruction of the country.

**Nut graf:** China-backed Saudi – Iran deal has created the environment for resolving the differences between Saudis and Houthis in Yemen. However, significant difficulties remain for peace and stability to return to Yemen.

**20. Why is China limiting exports of raw materials?**

**Syllabus:** Effect of policies and politics of developed and developing countries on India's interests

**Prelims:** Importance of Gallium and Germanium

**Mains:** US – China Rivalry, Implications of chip wars on India

**Context:**

- China has announced export controls on items related to gallium and germanium in order to "safeguard national security interests". Experts have commented that this is a response to the "chip war" with the USA.
- The announcement has led to a spike in the prices of essential raw materials due to the fear of supply shortages.

**Nature of Export Restrictions**

- Export operators in China will have to acquire a specific licence to export the two raw materials. To obtain the licence, operators have to list the importers, end-users and end use of these materials.
- Exporters who don't comply with the new rules, might be held criminally responsible and attract penalties.

**Why is this a cause of concern?**

- Gallium is used to make the substrate for semiconductors.
- This is a key component in the manufacture of integrated circuits, mobile and satellite communication chips, LEDs etc. It is also used in the sensors of space and defence systems.
- According to the Critical Raw Materials Alliance (CRMA), China commands 80% of the total production of gallium.
- Germanium also finds a similar application. It is used in fibre-optic cables, infrared imaging devices, optical devices and solar cells.
- China also produces 60% of the total production of germanium.
- Countries have identified these elements as "critical raw materials" for both national security and development.

### Geo-politics associated with the “chip war”?

- The US and China are engaged in a trade and technological conflict.
- Both are heavily reliant on Taiwan for their supply of chips. Taiwan is the world leader in semiconductor manufacturing, producing more than 60% of the world's chips.
- China has significant border tensions with Taiwan.
- The US is concerned that if China were to invade or blockade Taiwan, it would result in a global semiconductor shortage.
- The US is also concerned that China could use its dominance in the semiconductor industry to develop advanced military technology, such as hypersonic missiles and artificial intelligence.
- The COVID-19 pandemic had already led to a global shortage of semiconductors in 2021 and this has exacerbated tensions between the US and China.
- China is trying to become self-sufficient in semiconductor manufacturing, but it is still years behind Taiwan.
- In October 2022, the US government restricted exports of semiconductor manufacturing items to China to protect its national security. Japan and the Netherlands also restricted exports of semiconductor manufacturing items to China.
- These restrictions are seen as part of a broader effort by the US and its allies to limit China's access to advanced technology.
- China's export restrictions on these critical elements are being seen by experts as retaliation to these measures.
- China has denied that the export controls were targeted at any specific country, but a former vice-minister of commerce warned that China's response would escalate if restrictions imposed by the USA and its allies became tougher.

### Impact on India

- The Chinese export controls are expected to have a short-term impact on India and its industries due to the disruption in immediate supply chains.
- The long-term consequences for India's chip-making plans and industries will depend on several factors, including alternative supply sources, domestic semiconductor production capabilities, and strategic partnerships, especially with the US.
- The scenario also provides an opportunity for India to focus on waste recovery from zinc and alumina production. Gallium and germanium are byproducts in the processing of zinc and alumina.
- Moving attention towards available substitutes as indium and silicon could also be considered.

**Nut Graf:** *The technological rivalry between US and China has escalated with China imposing export bans on critical elements associated with semiconductor technology. This escalation is bound to have repercussions on the global supply chains and highlights the need to build resilience.*

## 21. The Global South: origins and significance

**Syllabus:** GS-2, Effect of policies and politics of developed and developing countries on India's interests

**Mains:** About Global South and Role of India in Global South

**Context:** This article talks about the term Global South, its significance in recent global scenarios and the role of India in the Global South.

### What do you mean by “Global South”?

- The term “Global South” refers to a group of countries around the world that are sometimes referred to as “developing,” “less developed,” or “underdeveloped.”
- Many of these nations are located in the Southern Hemisphere, primarily in Africa, Asia, and Latin America.
- In general, they are poorer, have higher levels of income inequality, lower life expectancy, and harsher living conditions than the “Global North” countries.
- Global South appears to have been first used in 1969 by political activist Carl Oglesby.
  - **‘First World’:** The term refers to the advanced capitalist nations.
  - **‘Second World’:** The term refers to the socialist nations led by the Soviet Union.
  - **‘Third World’:** This refers to developing nations, many at the time still under the colonial yoke.

### Geopolitical Significance of Global South

- The phrase “Global South” refers to a group of nations that share a variety of political, geographic, and economic characteristics.
- The majority of the nations in the Global South were under colonial and imperial domination.
- They are given a totally different perspective on the link between the centre and the periphery in the global political economy, as articulated by dependency theorists.
- China, India, the United States, and Indonesia are predicted to be the top four economies by 2030, with three of them coming from the Global South.
- The G-7 club's GDP has already been surpassed by that of the BRICS countries, which are dominated by the Global South and include Brazil, Russia, India, China, and South Africa.

### Challenges before Global South

The Global South faces many difficulties. In terms of global geopolitics, there is a need to critically evaluate how to provide the Global South's framework with some key teeth. When examining the geopolitical aspirations of the Global South, it is essential to consider three crucial structural components:

- The countries of the Global South are the most vulnerable as seen during the Ukraine crisis which has led to the rise in energy costs and fertiliser prices.
- The great power rivalry has an impact on global decision-making.
- The other issue is the need for multilateral decision-making mechanisms to be reformed.
- The major issue that needs to be addressed is the necessity to rethink normative idioms in global politics.

### India's Approach to Global South

Being the leader of the Global South, India provides a voice to the Global South Movement. Some of the following policy prescriptions outlined by India are in sync with the ethos which the Global South Movement consistently advocates.

- India's approach to global energy security and the energy transition is particularly pertinent to the Global South because of the many difficulties it is currently experiencing due to the energy transition.
- India's viewpoint on democracy will address the ongoing crisis that the Global South has been experiencing because of the Global North.
- From the Syrian crisis to the current Ukrainian crisis, India backed the practice of foreign powers abstaining from meddling in internal matters.
- Over the years, India's attitude to democratising international relations and reforming the United Nations has been consistent with the demands of the Global South.
- Some of the consistent demands India has made throughout the years include reforming the United Nations and expanding the permanent membership of the UN Security Council.

### Way forward

- **Need for an alternative approach to global normative order:** The dialectic approach to normative concerns like democracy, human rights, and the Responsibility to Protect is the contentious topic that the Global South is currently facing in the international arena. As can be seen in this situation, the Global North employs these normative idioms as a framework to maintain its domination over the Global South.
- **Need for equitable global energy order:** In terms of energy security, the most pressing issue confronting the Global South is ensuring a sustainable energy transition. In this aspect, the Global South is in a tough position. The urgent requirement is to guarantee a sustainable energy transition that can lead to overall socioeconomic development in the Global South.
- **Reformed multilateral institutionalism and Global South:** The need to reform the United Nations Security Council (UNSC) and other multilateral agencies to provide fair representation from the Global South is another crucial topic that requires more focus from the standpoint of the Global South.

**Nut Graf:** The phrase "Global South" has once again come to light as a result of many powerful nations' refusal to support NATO during the conflict in Ukraine. In this situation, India can offer the Global South the required leadership and a fresh perspective on world geopolitics.

## 22. South China Sea Tensions

**Syllabus:** GS-2, Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** Bilateral relations with the Philippines, India's strategy to counter China's Muscle power

**Context:** India and the Philippines held a meeting in New Delhi to enhance bilateral ties and address the South China Sea tensions through dialogue and cooperation.

### Introduction:

- The Foreign Ministers of India and the Philippines met in New Delhi at the fifth meeting of the Philippines-India Joint Commission on Bilateral Cooperation.
- The meeting aimed to strengthen the bilateral partnership between the two countries, focusing on shared maritime interests and a long history of diplomatic relations.

### The key outcomes of the meeting:

- **Strengthened Bilateral Ties:** The meeting aimed to enhance the bilateral partnership between India and the Philippines.
- **Resident Defense Attaché Office:** The decision to open a resident defence attaché office in Manila was discussed, indicating closer defence cooperation between the two countries.
- **Coast Guard Cooperation:** Both nations focused on boosting cooperation between their respective Coast Guards, fostering joint efforts in maritime security and response to disasters.
- **Capacity Building:** The meeting explored opportunities for capacity-building initiatives, training programs, and knowledge sharing between the Coast Guard of India and the Philippines.



- **Maritime Domain Awareness:** The two countries discussed measures to improve maritime domain awareness, such as sharing intelligence and information on maritime security threats.
- **Naval Asset Acquisition:** Manila expressed its intention to acquire naval assets under a concessional line of credit from Delhi, facilitating the enhancement of the Philippine naval capabilities.
- **Collaboration on Maritime Security:** The meeting highlighted the expansion of joint exercises on maritime security, emphasizing the commitment to ensuring a secure and stable maritime environment.
- **Focus on Disaster Responses:** In addition to maritime security, the meeting emphasized joint exercises and cooperation in disaster response operations, enhancing preparedness and coordination.
- **Support for International Law:** India reaffirmed its commitment to international law, including the United Nations Convention on the Law of the Sea (UNCLOS).
- **Recognition of the 2016 Arbitral Award:** India expressed its support for the 2016 Arbitral Award on the South China Sea, marking a departure from its previous position.

#### Philippines' Arbitration Case:

- The Philippines submitted a case for arbitration to the Permanent Court of Arbitration (PCA) to resolve disputes with China.
- Despite China's withdrawal from the arbitration, the proceedings continued under UNCLOS guidelines.
- The PCA released the Award on July 12, 2016, ruling in favour of the Philippines.

#### Findings of the Arbitration Award:

- The tribunal rejected China's historical rights claim in the South China Sea.
- It determined that claims within the "nine-dash line" were unfounded and that China had caused environmental damage through development and land reclamation.
- China violated the Philippines' sovereign rights in its Exclusive Economic Zone (EEZ) by interfering with fishing, constructing artificial islands, and impeding Philippine vessels.
- The tribunal concluded that China had no legal basis for asserting historic rights to resources within the disputed sea areas.

#### Way forward:

- The South China Sea is a vital maritime gateway between the Pacific and Indian Oceans, with significant geopolitical and economic implications.
- Any confrontation in the region poses a threat to regional and global security.
- India and other nations have a vested interest in safeguarding the free and stable marine commons in the area.
- Dialogue is crucial to finding a political framework for resolving the South China Sea tensions, as legal avenues have limited potential.
- Leaders of the Association of Southeast Asian Nations (ASEAN) should engage in "quiet diplomacy" to seek a peaceful resolution.
- ASEAN nations should enhance their understanding and unity to effectively convey a political message to China.

**Nut Graf:** India and the Philippines have bolstered their bilateral partnership, focusing on the South China Sea tensions. India's acknowledgement of the 2016 Arbitral Award reflects a change in stance while emphasizing the need for dialogue and ASEAN's pivotal role in resolving complex issues.

### 23. 1st GSI Survey of Siachen

**Syllabus:** India and its neighbourhood

**Mains:** Pakistan's claim to Siachen Glaciers

**Prelims:** About Geological Survey of India, Siachen Glaciers

#### Context:

The article highlights the first GSI Survey of the Siachen glacier in 1958, shedding light on its historical significance and refuting claims of Pakistani presence in the region.

#### Introduction:

- Siachen Glacier is assigned the number 5Q 131 05 084 by the Geological Survey of India (GSI).
- The first GSI Survey of Siachen took place in 1958, led by V. K. Raina, an Indian geologist.
- The survey holds significant historical and geostrategic importance.

#### The First Siachen Survey:

- V. K. Raina, an Assistant Geologist with GSI, conducted the survey in June 1958.
- Raina had previously studied the Nubra Valley and participated in the geological survey of the proposed Leh-Manali Highway.
- In 1958, the International Geophysical Year, GSI planned the study of Himalayan glacier systems.

- Raina's team surveyed Siachen, Chong Kumdan, Mamostong, Kichik Kumdan, and Aktash glaciers.
- The survey involved establishing survey and picture points, preparing a large-scale map, and conducting various studies.

#### Description of the Siachen Glacier:

- The snout of the glacier was a jumbled mass of practically inaccessible ice.
- The glacier exhibited an arc-like depression toward the center and a clear white stream two kilometers upstream.
- Two ice caves were present: one visible from the plateau downstream and the other seen by going up the eastern wall upstream.
- Cairn marks, reference stations, and photographic stations were established to fix positions and capture images.

#### Pakistan's Nonchalance:

- No mountaineering expedition or visitor encountered Raina's team during the three-month survey.
- Pakistan did not protest or show any interest in India's presence on the glacier.
- The Karachi ceasefire agreement of 1949 delineated the ceasefire line, indicating the region would fall on the Indian side.
- Explorations and scientific visits did not pose a threat or give reason for physical occupation, hence no importance was given to them.

#### No Claim to the Glacier:

- Pakistan's silence on the 1958 GSI expedition is significant as it establishes its absence from the region.
- The expedition contradicts the claim that Pakistan was present or in control of the glacier from the beginning.
- Pakistan formally staked its claim to the region 25 years later by extending the Line of Control in its protest notes of August 1983.
- India pre-emptively occupied the strategic Saltoro Heights on April 13, 1984, in response to Pakistan's claim.

**Nut Graf:** The 1958 GSI survey of Siachen glacier, led by V.K. Raina, exposes Pakistan's silence and refutes its claim, emphasizing the historical and geostrategic importance of the expedition.

## 24. EU Parliament resolution misdiagnoses the Manipur issue

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

**Mains:** EU Parliament resolution and its critical analysis

#### Context:

India has condemned a European Parliament resolution on the ethnic clashes in Manipur state, calling it an "interference" in its internal affairs.

#### Background

- Conflicts between the Kuki tribe and the dominant Meitei tribe in Manipur have alarmed members of the EU Parliament.
- The EU Parliament also demanded that internet blackouts be lifted and an impartial probe be conducted.
- India objected to the proposed discussion on Manipur in the EU Parliament, claiming it was solely a domestic concern.
- A resolution urging the Indian government to "promptly halt the ethnic and religious violence and to protect all religious minorities" was adopted by the EU Parliament.

#### Critical Analysis of Eu Resolution

- The EU Parliament's members are perfectly within the bounds of propriety in raising concerns about events in Manipur, just as Indian politicians have the right to voice their worries about issues like attacks on Hindu temples in Australia, racial prejudice in the United States, or anti-immigrant violence and government responses in Europe.
- An incorrect understanding of the dispute is present in both the resolution of the EU Parliament and the parliamentarians' formulation of the Manipur issue.
- This ignores the fact that an incorrect order to include Meiteis in the State's Scheduled Tribes list was made by a single judge bench of the Manipur High Court, which served as the catalyst for the increase in violence.
- The Kuki-Zo and Meitei communities' militants have been the only ones to engage in ethnic violence, which has been exacerbated by an ethnic polarization that civil society efforts to end have not yet been able to reverse. The Naga community and its representatives were also offended by the decision.

#### Conclusion

The EU resolution interprets this scenario incorrectly as being motivated by religious strife. At a time when reconciliation and responsibility are needed to break the stalemate that has endured for the past two months, a misdiagnosis like that would cause the emergence of new divides.

**Nut Graf:** India rejected the EU Parliament's response to the violence in Manipur, claiming it was colonial in outlook and amounted to meddling in domestic matters.

## 25. Virtual summit, virtual silence

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

**Mains:** SCO Virtual Summit and its issues

### Context:

Recently, the Prime Minister of India hosted a virtual summit of the Shanghai Cooperation Organisation (SCO).

### Background

- India's foreign minister argued that the Shanghai Cooperation Organisation (SCO) summit was an actuality.
- India focused on the political, economic, and cultural activities it had undertaken and the gatherings it had hosted while holding the SCO presidency to stress its dedication to the organisation.
- India has put so much work into the SCO that the summit should have taken place in person or through a hybrid format. That would have given it more significance.

### China Factor

- India's interests in the SCO have definitely had to be reevaluated in light of China's moves towards India in 2020 and the changing nature of the international order.
- SCO should not be afraid to criticise these countries. There shouldn't be any discrimination in such grave situations.
- While neither China nor Pakistan will reverse direction on the problem of terrorism, the Central Asian Republics continue to have serious worries about terrorist organisations using Afghanistan.
- However, India is clearly isolated inside the SCO on connectivity, a key concern for the body. India targeted China's flagship China-Pakistan Economic Corridor (CPEC), which infringes on Indian sovereignty, as part of its Belt and Road Initiative (BRI).

### BRI and the Eurasian game

- The negative effects of the BRI haven't dampened SCO members' excitement for it.
- India must therefore be aware of the threat that China, with Pakistan's active cooperation, will integrate Eurasia and exclude it from the continent.
- India must find a means to keep its tight ties to Eurasia while supporting the BRI, a tool of Chinese expansionism.
- Certainly, no matter how admirable the effort is, promoting Buddhist heritage won't help the SCO members turn towards India or stop their expanding ties to China.
- Iran's Chabahar project has not advanced as quickly as it could. Developing connectivity through Iran requires India to invest significantly more time and money, even if it is a difficult situation to manage.

### Silence on the Ukraine War

- China, Pakistan, and India all avoided mentioning it in their summit statements.
- The Russian President criticised the West and brought up Ukraine.
- The fact that Putin thanked the SCO nations for "supporting the Russian leadership in defending constitutional order" following the "armed rebellion" is equally notable.

**Nut Graf:** The Indian Prime Minister still had hope of working out a compromise with Chinese President Xi Jinping on the divisive issues dividing the two countries. As a result, he eagerly approved India's full membership, notwithstanding the SCO's historical roots and China's influence over it.

## 26. What is NATO's stand on Ukraine's entry?

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

**Mains:** Critical analysis of NATO's stand on Ukraine's entry

### Background

- The North Atlantic Treaty Organisation (NATO) sought to present a united front during its two-day summit in Lithuania, despite the fact that it is heavily involved in the Russia-Ukraine conflict.
- Turkey dropped its objections to Sweden joining the alliance just before the session started.
- Additionally, the summit established new spending targets for participants and made a long-term support promise to Ukraine.
- The promise of Ukraine's membership in the alliance, however, on which there was no clarity or time period, was the one subject that cast a shadow over the Vilnius summit.

### Outcome of the summit for Ukraine

- The NATO meeting in Bucharest in 2008 included an invitation to Ukraine and Georgia to become members.
- Prior to the Vilnius meeting, the president of Ukraine asked from NATO a more specific promise about his country's participation fifteen years later.
- Therefore, Ukraine hasn't made much progress towards joining NATO over the past 15 years.

- There has been a noticeable shift in support for Ukraine joining NATO amid Russia's ongoing invasion of that country.
- The Ukraine-NATO Council would be used to continue Ukraine's collaboration with NATO.

### Reasons why is Ukraine still not a part of NATO

- If Ukraine had been included now, NATO would have been at war with Russia.
- Since NATO's core value is collective security, if Ukraine gets accepted into NATO now, the war in Ukraine automatically becomes NATO's war.
  - The rationale behind this is the "collective security" doctrine of NATO is that any armed strike against any one of them in Europe or North America is seen to be an attack against them all.
- NATO, and the US in particular, do not want to run that danger.
- NATO seeks to undermine or defeat Russia in Ukraine without entering the conflict directly.

### Expansion of NATO

- The Czech Republic, Hungary, and Poland, all former Soviet allies, joined NATO in 1999.
- The alliance gained seven more members in 2004, including the Baltic republics of Estonia, Latvia, and Lithuania, all of which have shared borders with Russia.
- In 2009, 2017, 2020, and 2023, NATO membership was further expanded to include nations like Finland, Croatia, Montenegro, and Montenegro. The 32nd member is expected to be Sweden.

### Russia's response

- When Ukraine and Georgia were invited to the Bucharest summit in 2008, Russia saw it as a direct threat.
- The Russian government has consistently argued that the security of their country is threatened by NATO expansion.
- Six years later, after demonstrators backed by the West overthrew an elected pro-Russian government in Ukraine, Russia moved quickly to invade Crimea.
- Additionally, Russia helped the Russian-speaking insurgents in the Donbass region of Ukraine, which led to a full-scale conflict in 2022.

**Nut Graf:** NATO wants to include Ukraine in the alliance but is now refusing to do so. On the other hand, if Russia continues to view Ukraine's NATO membership as a red line, the Russians may continue to wage war to stop Ukraine from joining NATO.

## 27. NATO & Ukraine

**Syllabus:** Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** NATO expansion and its impact on Global peace

### Context:

- NATO members met in Lithuania to assess military and financial support to Ukraine.
- Ukrainian President Zelenskyy expresses disappointment as no timetable for Ukraine's induction into NATO is offered.

### NATO (North Atlantic Treaty Organization)

- NATO (North Atlantic Treaty Organization) is an intergovernmental military alliance formed in 1949.
- Its primary purpose is to ensure the collective defence and security of its member countries.
- NATO currently consists of 31 member states, mainly from North America and Europe.
- The organization operates on the principle of collective defence, meaning that an attack on one member is considered an attack on all.
- NATO promotes political and military cooperation among its members and fosters stability in the Euro-Atlantic area.
- The alliance has a unified military command structure and conducts joint military exercises and operations.
- NATO also engages in partnerships with other countries and international organizations to address global security challenges.
- The organization has adapted to changing security dynamics, including countering terrorism, cyber threats, and hybrid warfare.
- NATO member countries contribute to defence spending and commit to allocating a certain percentage of their GDP to defence.
- NATO remains a vital alliance for safeguarding the security and stability of its member states in an increasingly complex global security environment.

### The outcome of the Lithuania Meeting:

- NATO members met in Lithuania to assess military and financial support to Ukraine in the face of Russian aggression.
- However, no timetable for Ukraine's induction into NATO was offered, disappointing Ukrainian President Zelenskyy.
- Finland's recent membership and Sweden's imminent accession further amplified the frustration.

### NATO's Statement on Ukraine:

- NATO has provided significant support to Ukraine directly and waived its Membership Action Plan requirements.
- The plan ensures that new members have functioning democracies, market economies, civilian control over the military, commitment to conflict resolution, fair treatment of minorities, and willingness to contribute to NATO operations.

### The Paradox in NATO's Approach:

- NATO leaders have overlooked the need to address the root causes of the Ukraine conflict.
- The focus on recruitment campaigns, which Russia has used as an argument for aggression, is a contentious issue.
- The debate raises the question of whether NATO should consider slowing down expansion to avoid provoking further conflicts.
- Instead of escalating military tensions, NATO should explore potential pathways to a ceasefire and temporary cessation of hostilities.
- Emphasizing diplomacy and peaceful resolution of conflicts is crucial. The current approach risks setting the stage for further military escalation and cruelty.

**Conclusion:** NATO, as a group committed to market economies, democracy, human rights, and peace, must work towards changing the paradigm that triggered the conflict. While President Putin's territorial ambitions and Kremlin politics may persist, NATO should prioritize its values and strive to prevent avoidable conflicts. Addressing the root causes and promoting peaceful resolutions are necessary steps for long-term stability in the region.

**Nut Graf:** NATO's recent meeting in Lithuania highlighted the organization's failure to offer a timetable for Ukraine's induction and the need for a shift in paradigm. The emphasis on recruitment campaigns without addressing the root causes risks further conflict escalation.

## 28. Restoring the World Trade Organization's crown jewel

**Syllabus:** Effect of policies and politics of developed and developing countries on India's interests

**Mains:** Critical analysis of Dispute Settlement System (DSS)

**Context:** In 2022, the member-countries of the World Trade Organization (WTO) resurrected the dispute settlement system (DSS), also called WTO's 'crown jewel', by 2024.

### What is the Dispute Settlement System (DSS)?

- The Dispute Settlement System (DSS) was established to settle trade disputes between WTO members.
- Since its inception in 1995, this multilateral trading system has faced unprecedented hurdles.
- Dispute settlement is the core pillar of the multilateral trade system, and the WTO makes a distinctive contribution to global economic stability.
- The WTO mechanism promotes the rule of law while also making the trading system more secure and predictable.
- The Dispute Settlement System (DSS) is the second tier of the World Trade Organization's DSS, hearing appeals from WTO panels.

### Significance

- The WTO's dispute settlement system is critical to the multilateral trading system's security and predictability.
- As a result, the appellate body must ensure uniformity in the interpretation and application of WTO provisions without creating a binding precedent.
- This necessitates striking a delicate balance, which is precisely what the appellate body attempted to achieve.
- It has encouraged WTO panels to rely on prior interpretations, particularly where the concerns are similar.

### Concerns with DSS

- **International Law Critics:** The appellate body has defended the international rule of law by holding powerful governments like the United States and the European Union accountable for violations of international law. The appellate body, on the other hand, has become a victim of its own success.
- **Judicial Overreach:** The appellate body has been chastised for judicial overreach and for exceeding its institutional mandate. As a result, it contends that the appellate body cannot be resurrected unless the role of the appellate body is explicitly defined.
- **Problem with Precedents:** Another key issue identified by the US is that the appellate body has established binding precedents through its judgements. This is in violation of the WTO's dispute settlement understanding (DSU).

### De-judicialisation of trade multilateralism

- The World Trade Organisation was established in a world dominated by the neoliberal consensus that evolved during the Cold War and the collapse of communism.
- The United States' wider game plan appears to be the de-judicialization of trade multilateralism.
- Nations' sovereignty is eroded as they lose authority over vital decision-making. De-judicialisation is the opposite process in which governments undermine international courts in order to regain decision-making power.



**Conclusion**

Given the developing geoeconomic concerns posed by a rising China, the United States desires complete control over its trade policies. This has freed the WTO from the constraints of judicial scrutiny. This de-judicialization should not be mistaken with exercising political control over the appellate body in order to improve its functioning. While the US has highlighted numerous issues with the DSS, it has rarely presented meaningful solutions.

**Nut Graf:** *The WTO dispute settlement mechanism is promising and effective when viewed as a channel via which its member nations can seek legal counsel and adjudication if their rights are violated. However, it should be highlighted at this point that this is only one perspective on the complete system.*

**29. Conclusion of Trade Disputes at WTO**

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting the Indian interests; Important International institutions.

**Mains:** Indo-US bilateral trade

**Prelims:** About WTO

**Context:** Prime Minister Narendra Modi's state visit to the U.S. resulted in the resolution of six trade disputes at the World Trade Organization (WTO) between India and the U.S.

**Conclusion of Trade Disputes at WTO:**

- Prime Minister Narendra Modi's state visit to the U.S. resulted in the decision to end six long-standing trade disputes at the World Trade Organization (WTO).
- The disputes were resolved between India and the U.S., aiming to bring about a meaningful resolution despite the redundancy of the WTO Appellate Body.

**Background and Nature of Disputes:**

- One of the settled disputes involved challenges related to India's National Solar Mission and certain sub-federal programs in the renewable energy sector in the U.S.
- India had concerns about compliance with WTO treaty obligations, while the U.S. sought authorization for trade retaliation from the WTO's Dispute Settlement Body.
- Over time, some schemes expired or were modified, making enforcement of WTO panel rulings challenging.

**Settlement of Disputes and Pragmatic Approach:**

- Both India and the U.S. demonstrated a pragmatic approach by settling the disputes, acknowledging each other's domestic challenges and the need to bury differences.
- India found relief in resolving challenges regarding foreign trade policy schemes, including special economic zones (SEZ) and export-oriented unit schemes.
- The settlement showcased a pragmatic approach between two strong trading partners.

**Understanding in Ongoing Disputes:**

- Two ongoing disputes, particularly the challenge against the controversial Section 232 tariffs imposed by the U.S., were kept on a temporary hold.
- India imposed retaliatory measures, considering the U.S. tariffs as safeguard measures, leading to a series of WTO challenges and unilateral trade responses.

**Modification of Measures and Market Access Opportunities:**

- The proposed termination of disputes does not entail giving up measures but modifying them to address concerns and interests.
- The U.S. will consider exclusion requests from India for steel and aluminium products, providing market access opportunities for Indian exporters.
- Indian steel and aluminium exporters, who faced challenges in the U.S. market, can benefit from the committed approval rates.

**Mutual Assurances and Reverting to Most Favoured Nation (MFN) Rates:**

- India has assured the removal of retaliatory duties on certain U.S. agricultural imports affected by Section 232 measures.
- India will revert to the currently applied 'most favoured nation' (MFN) rate for eight products, not offering preferential concessions but maintaining MFN-applied rates.

**Significance and Implications for India-US Trade Relations:**

- Resolving six separate disputes sets a precedent for finding mutually agreed solutions in the WTO and strengthens India-US trade relations.
- The decision demonstrates a new chapter in trade relations, emphasizing diplomacy and bilateral negotiations as practical tools when immediate adjudicatory outcomes are not feasible.
- The deal aligns with the deepening economic engagements between India and the U.S. and serves as a template for other WTO members to follow.

**Nut Graf:** India and the U.S. ended long-standing trade disputes at the WTO, showcasing a pragmatic approach and setting a template for other members, fostering stronger bilateral trade relations.

**30. Dilemmas of India's great power ambitions**

**Syllabus:** Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

**Mains:** India's role in global politics and challenges with it

**Background:**

- Some consider India should seek to be a big power and assert its growing status worldwide.
- Others contend that before attempting to change the globe, India should concentrate on lifting millions of its citizens out of poverty, enhancing its administration, and promoting internal harmony.

**1991 Economic Crisis:**

- India was a poor, weak country in 1991, with a \$5.8 billion foreign exchange reserve and a nominal GDP of \$270.11 billion.
- The India-Pakistan conflict loomed despite efforts to allay nuclear war concerns, and the level of violence in Kashmir was at an all-time high.
- The fall of India's dependable ally, the Soviet Union, on the one hand, and tense ties with the United States on the other, added to the pressure on the ruling class of the nation.

**Reforms after 1991 Crisis:**

- The reforms implemented in the wake of the economic crisis of 1991 not only increased GDP growth but also significantly reduced poverty.
- India, which is currently the fifth-biggest economy in the world, has over a hundred nuclear weapons and one of the largest militaries. Its nominal GDP may soon reach \$4 trillion.
- India currently counts the United States among its closest allies, and it maintains close ties with many other major world powers.

**India's Strategic Position in Global Politics**

- The ambitious investments undertaken over the previous several decades are now bearing fruit, with a favourable external environment for the country's progress.
- India's place in global politics has received increasing attention as a result of the great power dynamics surrounding the Ukraine crisis. The United States and the wealthy West want India to support them.
- To prevent India from turning its back on Moscow, an endangered Russian Federation is using every effort. There are credible arguments that India could act as a mediator between Russia and Ukraine to settle the conflict.
- India employs the language of global crisis mediation and being a bridge between the north and south, east and west, implying that it is a major 'pole' in world affairs.

**Concerns with India's Great Power Story**

- Major governance and infrastructure problems, such as the difficulty of doing business, plague India.
- India's political leaders would continue to be preoccupied with internal issues rather than paying attention to world issues.
- The reduction of poverty and the enhancement of the wellbeing of the millions of Indians who live below the poverty line are among the political class's top priorities.
- A struggling economy also reduces the elite's enthusiasm for engagement abroad.
- Even more so, a struggling domestic economy makes it difficult for officials to set aside enough money for foreign policy goals.
- The combined result of these internal issues is likely to be a political elite that is more preoccupied with pressing home issues than the opulence of big power status.

**Conclusion**

- India's domestic weaknesses will continue to limit its ability to change the global order in a manner consistent with its size and ambition, but failing to do so would be a strategic mistake.
- India's capacity to influence world politics must also be a reflection of its domestic situation, and its participation in international affairs must also be motivated by the needs of its citizens.

**Nut Graf:** Even if regional inabilities will continue to limit India's potential to affect world order, ignoring or underestimating the global consequences of a growing India's power is dangerous.

### 31. ASEAN, a persistence with dialogue, on a trodden path

**Syllabus:** GS-2, Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

**Mains:** 56th Foreign Ministers Meeting (FMM) of ASEAN and the Role of ASEAN in Global Politics

#### Context:

The 56th Foreign Ministers Meeting (FMM) of the Association of Southeast Asian Nations (ASEAN) was held in Jakarta, Indonesia in 2023.

#### 56th Foreign Ministers Meeting (FMM) of ASEAN – Vision and Challenges

- ASEAN has been referred to as “the Epicentrum of Growth” by the group's current chair, Indonesia.
- The three interconnected dimensions of ASEAN's vision are as follows:
  - Creating a political community that guarantees regional peace and a just, democratic, and peaceful environment;
  - an economic community committed to establishing a regional economy that is related to and well integrated into the global economy; and
  - a sociocultural community to improve the region's sustainability and the quality of life for its people.

#### Significance of ASEAN

- Two essential components that support ASEAN's unity and centrality are necessary for managing regional and global dynamics.
  - It should adhere to the ASEAN Charter in order to uphold its legitimacy, and it should also maintain control while managing regional dynamics.
  - ASEAN's internal conflicts over problems like Myanmar are coming to light in the media.

#### Issues associated with ASEAN

- The tense relationship between the United States and China puts ASEAN's ambitions to dominate the area and sets its agenda in jeopardy.
- Although ASEAN and China have advocated for the early adoption of a meaningful and effective code of conduct—they did so again this year—they are happy to leave the issue unresolved.
- Even while the US has recently made efforts to rekindle constructive conversations through high-level visits, ASEAN continues to watch helplessly as the bitter dispute between the US and Chinese governments continues.
- ASEAN likes to promote the ASEAN Outlook on the Indo-Pacific (AOIP), citing its concern over “the escalating geopolitical tensions in the region.” Despite the AOIP's endorsement being reiterated by ASEAN partners, concerns persist about how it would be implemented.

#### ASEAN and India's Role

- The importance of the ASEAN meetings to India becomes clear when one considers that the Indian Ministry of External Affairs prefers to represent India at the post-ministerial conference and other regional discussions.
- The External Affairs Minister emphasised the overlap between the AOIP and India's Indo-Pacific Oceans Initiative and explicitly emphasised the necessity of a “strong and unified” ASEAN in the developing Indo-Pacific dynamic.
- He urged that the two sides cooperate in “newer areas like the cyber, financial, and maritime security domains” in order to strengthen the entire strategic partnership between India and ASEAN.
- Even while it seemed like ASEAN did not make much headway and did not break any new ground, its persistence in dialogue—both internally and externally—kept geopolitical tensions from increasing.
- Jakarta will host the next ASEAN summit in 2023. This should provide further insight on how to approach the issues the region is facing.

#### Conclusion

The ASEAN 56th FMM is the best gauge for monitoring Asia's current trends. An in-depth examination of the various outcome documents reveals ASEAN's valiant efforts to navigate the transformative shifts of the last ten years, including the COVID-19 pandemic's effects, the economic downturn, the conflict in Ukraine, climate change, and, most importantly, the confrontation akin to the Cold War between the United States and China.

**Nut Graf:** ASEAN's extensive institutional architecture has become an inclusive platform that gathers governments from near and far, as well as all significant players involved in creating the strategic contestation in a broad region ranging from East Africa to the South Pacific.

**32. The SCO is a success story that can get better**

**Syllabus:** India and its Neighbourhood – Relations, Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

**Mains:** Relevance of SCO in emerging Geopolitical context?

**Prelims:** Member countries of SCO

**Context:** SCO's success, challenges, and way forward in a changing world; emphasizing unity, security, and cooperation among member-states.

**Recent Outcomes of SCO Meeting:**

- The 23rd Meeting of the Council of Heads of State of the Shanghai Cooperation Organization (SCO) was successfully hosted by India on July 4, 2023.
- During the summit, the New Delhi Declaration was signed, and statements were issued on countering radicalization and exploring cooperation in digital transformation.
- Iran was granted full SCO membership, and Belarus signed the memorandum of obligations to join the SCO as a member state.
- The SCO adopted an economic development strategy for the period until 2030, demonstrating the vitality of the "SCO family."

**Relevance of SCO in Changing Geo-Political Scenario:**

- The world is facing geopolitical tensions, economic slowdown, energy crises, food shortages, and climate change.
- Challenges such as power politics, economic coercion, technology decoupling, and ideological contests are major risks to world peace and development.
- The SCO has been committed to becoming a community with a shared future for mankind and supporting each other's core interests and development strategies.
- The SCO has played a significant role in regional peace, stability, and prosperity by promoting dialogue and cooperation over confrontation and alliance.

**Headwinds in the path for SCO:**

- Bilateral differences between India and China have been a challenge for the SCO, requiring strategic communication and cooperation.
- The ongoing Russia-Ukraine conflict may impact regional stability and require the SCO's attention in addressing potential spillover effects.
- China's stance on terrorism and its support to Pakistan may create tensions within the SCO member-states and need to be addressed to enhance security cooperation.
- External elements orchestrating a new Cold War and bloc confrontation in the region must be met with vigilance and rejection.

**Way Ahead to Make SCO More Effective:**

- Enhance solidarity and mutual trust among member-states to address common security challenges. Upgrade security cooperation to combat terrorism, extremism, and transnational organized crime.
- Embrace win-win cooperation to achieve shared prosperity. Collaborate on trade, investment, technology, climate actions, infrastructure, and people-to-people engagement.
- Advocate multilateralism and engage with observer states, dialogue partners, and international organizations to uphold the UN-centered international system and international law.
- Strengthen cooperation among emerging economies and developing countries, including through platforms like BRICS and G-20 summits.
- Commit to common, comprehensive, cooperative, and sustainable security, respecting each country's independent path to development and social system.
- Forge a united, equal, balanced, and inclusive global development partnership, promoting humanity's common values of peace, development, equity, justice, democracy, and freedom.
- Reject hegemony, unilateralism, cold war mentality, and bloc confrontation, while opposing illegal unilateral sanctions and long-arm jurisdiction measures.
- Safeguard the development rights and legitimate interests of the developing world through dialogue, diplomacy, and peaceful means.

**Nut Graf:** The article highlights the successful 23rd SCO meeting, its importance amid changing global dynamics, and the challenges it faces. It emphasizes unity, security cooperation, and win-win collaboration to enhance the SCO's effectiveness in promoting peace, stability, and prosperity among member-states in a rapidly evolving world.

**33. India, Japan will work to strengthen 'peacetime cooperation': Jaishankar**

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting India's Interests

**Prelims:** Defence exercises with Japan, Trade deals with Japan

**Mains:** India-Japan relations, Indian Ocean Region

**Context:**

- Japanese Foreign Minister Yoshimasa Hayashi is currently on his India Visit for 15th annual India-Japan Foreign Ministers' Strategic Dialogue.
- Emphasis place on Peace-time cooperation over war-time cooperation wrt tensions in the Taiwan Strait region.

**Background:**

- **Pragmatic approach of India:** During heightened U.S.-China tensions in the Taiwan Strait after U.S. Speaker Nancy Pelosi's visit to Taipei in August 2022, India had issued its own statement urging "restraint", but had not joined the Quad partners U.S., Japan and Australia Foreign Ministers in a statement demanding that China cease military exercises in the Taiwan Strait.
- New Delhi has also made it clear that it hopes to resolve issues with Beijing "diplomatically" and bilaterally, indicating India's preference for a less strategic posture within the Quad.

**India-Japan Relations:**

- India and Japan signed a peace treaty and established diplomatic relations on 28th April, 1952. This treaty was one of the first peace treaties Japan signed after World War II.
- **2005:** Global Partnership between Japan and India. Elevated to "Special Strategic and Global Partnership" in 2014.
- **Since 2005:** Annual Summits. Both committed to having a "Free and Open Indo-Pacific" region.
- October 2008: "the Joint Declaration on Security Cooperation between Japan and India"
- There are also various frameworks of security and defense dialogue between Japan and India including Foreign and Defense Ministerial Meeting ("2+2" meeting), annual Defense Ministerial Dialogue and Coast Guard-to-Coast Guard dialogue.
- On September 9th 2020, the Agreement between the Government of Japan and the Government of the Republic of India Concerning Reciprocal Provision of Supplies and Services between the Self-Defense Forces of Japan and the Indian Armed Forces (so-called "Acquisition and Cross-Servicing Agreement" or ACSA) was signed. ACSA came into force on July 11th, 2021.
- **Bilateral exercises:** JIMEX (naval exercise), SHINYUU Maitri (air force exercise), and Dharma Guardian (military exercise).
- Both countries also participate in Malabar exercise with the USA.
- Quadrilateral Security Dialogue (QUAD).
- Japan started providing yen loans to India in 1958, as the first yen loan aid extended by the Japanese government.
- India was the 18th largest trading partner for Japan, and Japan was the 13th largest trading partner for India in 2021.
- Also, direct investment from Japan to India has increased, and Japan was the 5th largest investor for India in FY 2021.
- During the Ministerial Dialogue, two sides recommitted to a 5-trillion yen target for Japanese investment in India in the period 2022-2027.
- Japan's New Indo-Pacific Policy also has a special focus on ties with India, including projects in third countries like Sri Lanka and Bangladesh.

**Details about the recent visit:**

- Objective is to strengthen cooperation between India and Japan, in economics, supply chains, digital domain or critical technologies and maritime security'
- The Japanese Foreign Minister said the two countries were "natural partners" in facing the challenges of a "future world order".
- India-Japan military and maritime exercises that included the first-ever joint fighter exercise in January 2023 and strong bilateral ties and more people-to-people cooperation would increase stability in the region.
- Mr. Jaishankar praised Japan for being an "exemplar moderniser" that is a role model for India. He also credited Japan with several industrial "revolutions" in India including the introduction of the Maruti-Suzuki collaboration for a passenger car, Metro rail services in various Indian cities, and high-speed rail projects like the under-construction, but much-delayed Mumbai-Ahmedabad Shinkansen project.
- He said Japan was keen to align its G-7 presidency goals with that of India's G-20 priorities including the need to involve the Global South.

**Conclusion:**

Unless we keenly listen to the voices of the "Global South" and show our commitment to cooperation on urgent issues facing these countries, our appeal for upholding the free and open international order based on the rule of law may sound like a mere slogan.



**Nut Graf:** Japanese Foreign Minister Yoshimasa Hayashi's visit has highlighted the strengthening ties of cooperation, in economics, supply chains, digital domain or critical technologies and maritime security' between India and Japan.

### 34. Why has Israel plunged into a crisis?

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting India's Interests

**Mains:** Impact of Israel crisis on India

#### Context

- On July 24th 2023 Israel's governing coalition passed a critical part of its judicial overhaul plan in the Knesset that would curtail the Supreme Court's oversight powers of government decisions.
- Israel has seen months of protests against the right-religious government's plans to overhaul the judiciary.

#### What is the bill exactly about?

- Abolishes the "reasonable doctrine", which the top court has often employed to assess key government decisions and ministerial appointments.
- In Israel, which does not have a written Constitution, courts cannot measure government decisions constitutionally, but the reasonability doctrine has worked as a critical judicial check on executive decisions.
- The court could determine whether a government decision or a ministerial appointment is sensible and fair and nullify it if needed.

#### Other Proposals?

- Curtailing judicial review over legislation and then empower Parliament to override court decisions with an absolute majority of 61 votes (out of 120).
- The government also seeks to take greater control of judicial appointments. Currently chosen by 9-member panel (three Supreme Court judges (including the court president), two members of the Israeli Bar Association, two members from Parliament, and two from the government (Ministers)).
- Government wants to replace Bar Asso. Members with two "public representatives" picked by the government.
- Another proposal seeks to do away with the legal obligation for Ministers to follow the advice given by their legal advisers (which in turn are guided by the Attorney-General)

#### Why is this being done?

- Over the years, Israel's polity (and its Parliament) has shifted rightward, while the judiciary did not.
- The Right has criticised the judiciary for blocking its legislative and governmental pushes aimed at transforming Israeli society and expanding settlements in the Palestinian territories.
- Israel's Opposition and civil society accuse the government of trying to undermine the country's democracy from within. Critics fear that if that system is torn down, it would leave Israel's government, controlled by rightwing and religious parties, very powerful, turning the country into a de facto authoritarian theocracy.

#### Any similarities with India?

- Basic Structure Doctrine (KBC 1973)
- 42nd CAA: Curtailed Judicial review powers of High Courts; unlimited power of Parliament to amend the constitution.
- 44th CAA: Reversed above
- Minerva Mills Case 1980: Constitution and not the Parliament is Supreme. Judicial Review, Fundamental Rights and DPSP are a part of Judicial Review. The government does not have unlimited right to amend the constitution (limiting amending power itself is a basic feature of constitution).
- Schedule 9: Supreme Court has said that any laws under this schedule will be open to examination if they violate FRs or basic Structure of constitution.

#### What can happen next?

- Civil society groups have filed petitions in the Supreme Court asking it to strike down the legislation.
- The country's top court has said that it would review the challenges, and asked the defendants to submit a response at least 10 days before the preliminary hearing. The Supreme Court has the powers to review Knesset laws, but here the contradiction is that the law is in the Supreme Court's powers.
- So the judges would be reviewing a law passed in Parliament that curtails their own powers.
- This sets the country on the path of a constitutional showdown. While the legal challenges would take time, it's to be seen what Israel's government would be doing with its newly acquired powers.
- The far-right wants to give military service exemption to religious Jews and expand settlements in the West Bank. They also want to introduce other parts of the judicial overhaul plan in the Knesset.

**Nut Graf:** The solution for the Israel crisis depends on the different stakeholders and the government and Supreme court of Israel should make sure that country does not fall into a constitutional showdown.

### 35. Two Indian military aircraft visit Australia's strategic Cocos Islands

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting the Indian interests

**Mains:** India-Australia bilateral relation

**Prelims:** About India-Australia bilateral relation, Cocos (Keeling) Islands

**Context:**

Indian Navy and Indian Air Force aircraft visited Australia's Cocos (Keeling) Islands (CKI), signalling enhanced military reach and interoperability with Australia, bolstering surveillance of strategic maritime choke points in the region.

**Introduction**

- Indian Navy Dornier maritime patrol aircraft and IAF C-130 transport aircraft visited Australia's Cocos (Keeling) Islands (CKI) in the Southern Indian Ocean.
- Diplomatic and official sources confirm the visit, which aimed to expand India's military reach and enhance interoperability with Australia.

**Cocos Islands: A Vital Staging Point**

- CKI is seen as an important base for refuelling and operational turnaround for the Indian military, especially after runway expansion to accommodate larger aircraft like the P-8 long-range maritime patrol aircraft.
- The visit of Dornier and C-130 aircraft underscores the strategic significance of CKI.

**CKI Elevates as Joint Surveillance Point**

- Analysts view the visit as groundbreaking, as it positions CKI as a staging point for joint air surveillance by Australia and India.
- Maritime choke points in Southeast Asia and the eastern Indian Ocean can be effectively monitored from CKI.

**Deepening Interoperability between India and Australia**

- The visit reflects India's increasing military-to-military engagements, strengthening interoperability in the region, and particularly with Australia.
- Both countries demonstrate mutual willingness to provide access to their military facilities in the Indian Ocean.

**Previous Cooperation and Ongoing Projects**

- CKI had already served as a point of cooperation between India and Australia for India's Gaganyaan human space flight mission.
- Collaboration in space activities has led to discussions on earth observation, satellite navigation, space situational awareness, and weather and climate studies using satellite data.

**Challenges and Expansion Plans**

- Reports suggest delays in Australian Defence Force's (ADF) plans to upgrade the CKI runway due to increased costs.
- Proposed expansion includes a 150 m runway extension and additional supporting infrastructure, subject to parliamentary approval.

**Enhanced Monitoring of Choke Points**

- India's access to CKI and Christmas Island offers strategic advantages, especially in monitoring movements into the Indian Ocean.
- Monitoring movements of China's People's Liberation Army Navy in the region is of particular significance.

**Nut Graf:** Indian Navy and IAF aircraft's visit to Cocos Islands strengthens strategic ties with Australia, providing a vital staging point for joint air surveillance and monitoring China's naval movements in the Indian Ocean region.

# ART AND CULTURE

## 1. Tankai Method

**Syllabus:** GS-1; Art and Culture - Salient Aspects of Art Forms

**Prelims:** Tankai Method

**Context:** The Ministry of Culture and the Indian Navy sign a Memorandum of Understanding (MOU) to revive the “ancient, stitched shipbuilding method (Tankai method). The Indian Navy will oversee the implementation and execution of the entire project.

**Details:**

- The ‘stitched shipbuilding method’ is a traditional boat building technique that involves sewing the planks of a boat together with cord or wire instead of using nails or screws.
- This method is still used in some parts of the world for building small boats. It is a 2000-year-old technique of shipbuilding known as the ‘stitched shipbuilding method’.
- The stitched ship holds significant cultural value in India, given its historical importance and the preservation of traditional craftsmanship.
- These ships offered flexibility and durability, making them less susceptible to damage from shoals and sandbars.



**History of Tankai Method in Indian Navy:**

- The Tankai method is believed to have originated in India and was used for centuries to construct ships for both commercial and military purposes
- Tankai method was used by the Indian Navy for centuries, but it fell out of favor with the arrival of European ships in the 16th century.



## 2. Choose a new palette for India's creative economy

**Syllabus:** GS-1, Indian Culture – Salient Aspects of Art Forms, Literature and Architecture from Ancient to Modern times.

**Mains:** Challenges and opportunities presented to Indian Art forms in the Digital Era

**Context:** Digital era has proven to be a double-edged sword for Indian artists, highlighting both the opportunities and challenges they face in the creative economy.

### Types of Crime in the Art World:

- **Art Theft:** The illegal act of stealing artwork from galleries, museums, private collections, or public spaces.
- **Copyright Infringement:** Unauthorized reproduction, distribution, or display of copyrighted artwork without the artist's permission.
- **Forgery:** Creating and selling counterfeit artworks, often imitating the style and signatures of renowned artists.
- **Fraud:** Deceptive practices, such as selling fake or misrepresented artworks, manipulating art prices, or engaging in art investment scams.
- **Illicit Trafficking:** Illegal trade and smuggling of cultural artefacts, including stolen artworks, archaeological artefacts, and cultural heritage items.
- **Money Laundering:** Using art transactions to conceal the origins of illegally obtained funds or to legitimize illicit financial activities.
- **Disinformation:** Spreading false information or narratives about the history, authenticity, or value of artworks, often to manipulate markets or deceive buyers.

### Challenges and Status of Artists:

- **Economic Sustainability:** Artists face challenges in achieving financial stability and sustaining their creative careers.
- **Market Access:** Limited opportunities and difficulties in accessing established art markets hinder artists' exposure and ability to sell their work.
- **Preservation of Traditional Art Forms:** Traditional art forms are at risk of being marginalized or lost in a rapidly changing society, posing a challenge for artists dedicated to their preservation.
- **Transparent Financial Assistance:** Lack of transparency in the selection process for financial assistance leads to inequality in representation and support for artists.
- **Promotion of Contemporary Artists:** Limited efforts by private and public institutions to promote contemporary artists as brands hinder their recognition and financial assistance.
- **Crime in the Art World:** Artists are affected by crimes such as art theft, forgery, copyright infringement, and illicit trafficking, leading to financial harm and eroding public trust.
- **Rural-Urban Divide:** Artists based in rural areas face additional challenges due to limited access to resources, infrastructure, and exposure compared to their urban counterparts.
- **Government Support:** While government support exists in the form of financial assistance and training programs, more efforts are needed to promote contemporary artists and ensure equal representation.

### A workable solution to preserve and promote Indian artists and artisans:

- **Establish a Capacity-Building Centre:** Create a centre focused on capacity-building in the arts and crafts sector, providing guidance, technical support, infrastructure, access to investors, and networking opportunities.
- **Bridge the Needs of Artists:** Offer training, professional development, material support, and access to markets for artists and artisans, ensuring their skills are honed, and they have the necessary resources to thrive.
- **Support from Government and Private Players:** The government and private players should provide support, resources, and opportunities for innovation and entrepreneurship within the creative economy.
- **Transparent Selection Processes:** Ensure transparency in the selection process for financial assistance, cultural events, and opportunities, promoting equal representation and avoiding subjective criteria.
- **Utilize Data Analytics:** Leverage data analytics to understand emerging trends in the global art market and develop policies and recommendations that foster creative ecosystems contributing to a sustainable world.
- **Address Crime in the Art World:** Implement increased security measures, international cooperation, public awareness, and advanced technology for authentication to tackle crimes such as art theft, forgery, and illicit trafficking.
- **Foster Collaboration and Networking:** Encourage collaboration and networking among artists, artisans, and creative entrepreneurs to facilitate knowledge exchange, innovation, and collective growth.
- **Institutional Record and Verification:** Establish an institutional infrastructure for verifying and authenticating artwork, and maintaining a record of incoming and outgoing artworks with verified identification marks.

**Nut Graf:** The workable solution to preserve and promote Indian artists and artisans addresses challenges such as economic sustainability, market access, preservation of traditional art forms, and crime. This involves establishing a capacity-building centre, promoting transparency, leveraging data analytics, and implementing security measures.

### 3. Nawab Wajid Ali Shah

**Syllabus:** GS 1- Art and Culture

**Prelims:** Indian culture will cover the salient aspects of Art Forms, literature and Architecture from ancient to modern times.

- Nawab Wajid Ali Shah, the last ruler of Awadh, spent his final years on the outskirts of what was British India's capital.
- Wajid Ali Shah wrote under the pen name "Qaisar," but he also wrote under the name "Akhtarpiya" for his numerous compositions.
- Kathak expanded its scope under Nawab Wajid Ali Shah's artistic direction and support. Two separate versions were started by Wajid Ali Shah, one of which is named Rahas and the other Raas.
- His grant-funded project, Huzn, was an investigation of the lives of those close to the Nawab and those who immigrated to Calcutta at the same time.

### 4. Rock art in AP's Rudragiri

**Syllabus:** GS 1- Art and Culture

**Prelims:** Mesolithic drawings and Kakatiya Artworks

**Historical Significance of Rudragiri Hillock**

- Located in Orvakallu village, Guntur district, Andhra Pradesh
- Boasts a celebrated past and remarkable archaeological monuments

**Combination of Prehistoric Rock Paintings and Kakatiya Art**

- Mesolithic rock paintings from around 5000 B.C.
- Exquisite artwork from the Kakatiya dynasty (13th century A.D.)

**Rock Shelters from the Mesolithic Age**

- Rudragiri features five naturally formed rock shelters
- Served as living quarters during the Mesolithic period

**Kakatiya Artwork in Natural Caves**

- Two natural caves at the southern end of the hillock exhibit exceptional murals
- Artistic brilliance of the Kakatiya period showcased

**Physical Condition of Kakatiya Artwork**

- Paintings adorned with colours derived from white kaolin and pigments
- Depict captivating scenes from the epic Ramayana

**Narrative Murals in the Caves**

- First cave portrays the intense battle between the Vanara brothers, Vali and Sugriva
- Middle cave features a grand sketch of Hanuman carrying the Sanjivani hill

**Unique Depiction of Hanuman**

- Third cave houses the prehistoric rock paintings from the Mesolithic era
- Kakatiya artists superimposed the figure of Hanuman in a divine offering posture

**Harmonious Coexistence of Mesolithic and Kakatiya Art**

- Ramayana figures do not overshadow the Mesolithic drawings
- Visitors can appreciate the artistic techniques of two distinct periods



# SCIENCE AND TECHNOLOGY

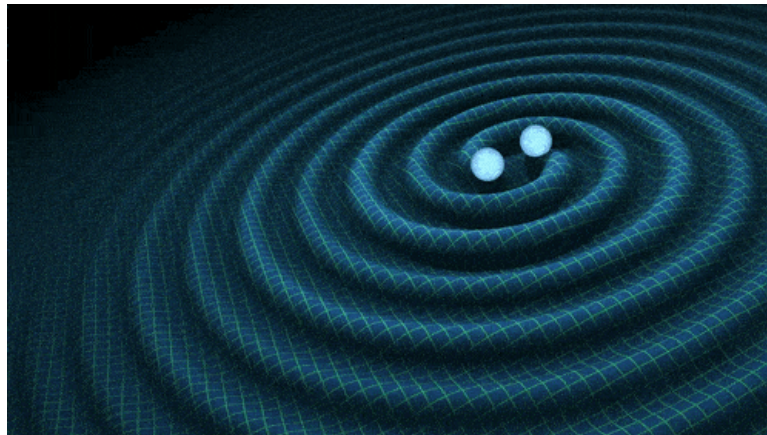
## 1. Gravitational Waves

**Syllabus:** GS03-Science and Technology

**Prelims:** Gravitational Waves

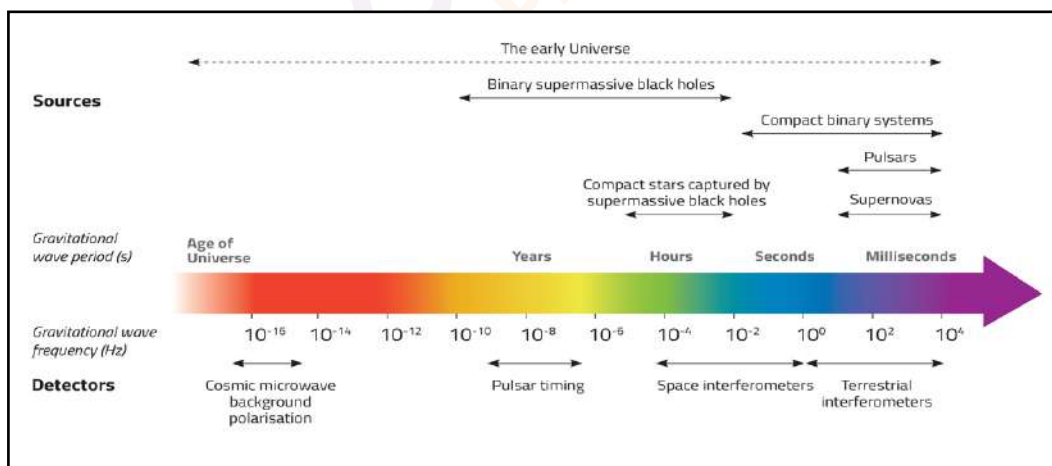
**Context:**

- Scientists have discovered that the solar system is replete with low frequency gravitational wave activity.
- They have also claimed of hearing the “cosmic background hum” created by them in the background.
- This discovery is different that 2015 discovery of gravitational waves by LIGO (Laser Interferometer Gravitational Observatory).



**What are Gravitational Waves?**

- Ripples in space and time.
- Their frequency range provides information about the source: the lower the frequency, the larger the mass involved.
- Can help us “see” the dark matter that does not emit any electromagnetic radiations, but does exert gravitational waves.



**How were these new GWs discovered?**

- Used 6 large Radio telescopes across the world.
- Studied pulsars (distant rapidly-rotating neutron stars that emit pulses of radiation).
- 25 pulsars observed over a period of 15 years.
- Observation: Some signals arriving a little early while others late (difference of a millionth-second)
- These waves were coming from very large monster black holes, that's why low frequency.

**How was India involved in this finding?**

- One of the 5 teams of radio astronomers was Indian: Indian Pulsar timing array.
- Pune's Giant Metrewave Telescope was one of the 6 radio telescopes used.
- Located at National Centre for Radio Astrophysics, Pune.
- One of the largest and most sensitive radio telescopes of world.
- Array of 300 steerable Parabolic radio telescopes (45m diameter each).
- First used in 1995 for testing and final construction ended in 1996.

### Other telescopes used in this study

- 100-m Effelsberg radio telescope in Germany
- The Lovell Telescope of the Jodrell Bank Observatory in the United Kingdom
- The Nancay Radio Telescope in France
- The Sardinia Radio Telescope in Italy
- The Westerbork Synthesis Radio Telescope in the Netherlands.

## 2. Aspartame

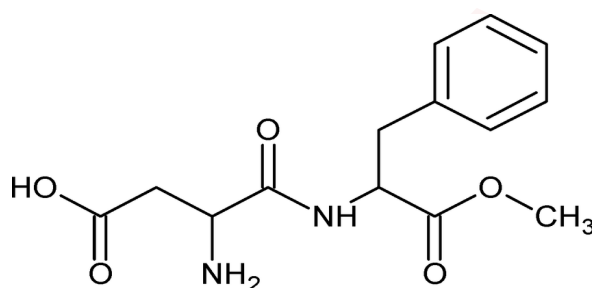
**Syllabus:** GS03-Science and Technology

**Prelims:** Aspartame

**Context:** International Agency for Research on Cancer (IARC), is expected to declare it as “possibly carcinogenic to humans”.

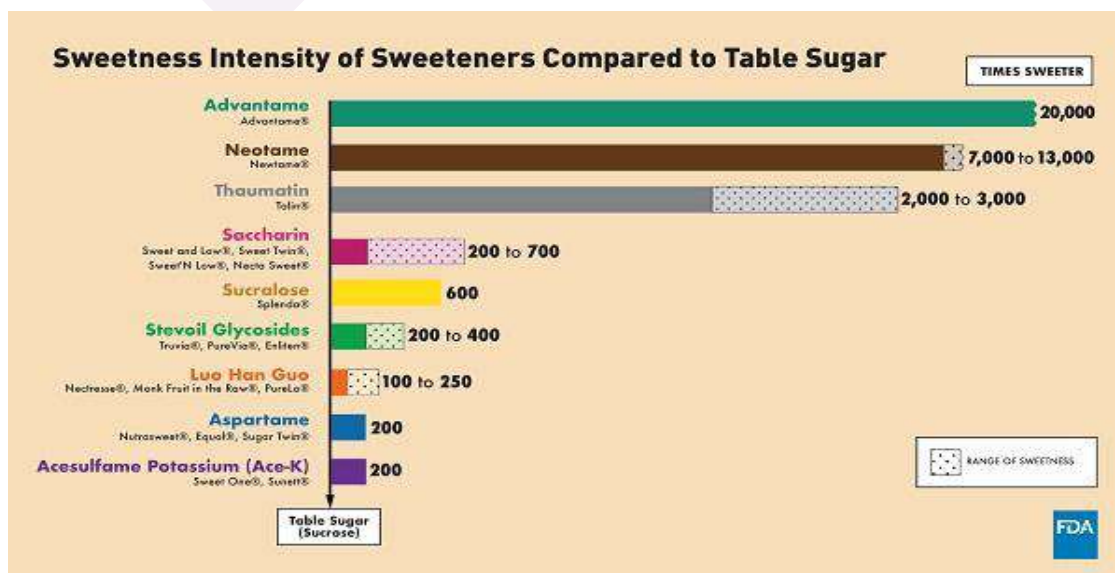
### About Aspartame

- C<sub>14</sub>H<sub>18</sub>N<sub>2</sub>O<sub>5</sub>; discovered in 1965
- 200 times sweeter than sugar.
- Used in over 6000 products worldwide.
- First approved for use in food in July 1974 by FDA.
- Since 1990s many studies done regarding safety of this sweetener.



### About IARC

- An agency of WHO.
- IARC categorization tells how strong the evidence is, not how risky a substance is to your health.
- “Possibly” category is used when there is “limited” amount of evidence in people or data from animal experiments
- Other products in this category: diesel, nickel, aloe vera, Asian pickled vegetables.
- **IARC Classifications**
  - Group 1: Carcinogenic to humans
  - Group 2A: Probably carcinogenic to Humans
  - Group 2B: Possibly Carcinogenic to Humans
  - Group 3: Not Classifiable



### 3. India joins Artemis accord

**Syllabus:** GS03-Science and Technology

**Prelims:** India joins Artemis accord

**Context:** The Artemis Accords are a set of statements that set out common principles, guidelines, and best practices that are applicable to the safe exploration of the moon and eventually beyond as humanity extends the duration of space missions and its reach to Mars.



**Artemis Accords** - established by the U.S. State Department and NASA

7 other founding members: Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates, and the United Kingdom in 2020

- Key Principles
- Space Exploration
- Transparency
- Interoperability
- Emergency Assistance
- Registration of Space Objects
- Preserving Heritage
- Space Resources
- Deconfliction of Activities
- Orbital Debris

#### Mission timeline

- **Artemis-I:** Unmanned Mission to the Moon
- **Artemis-II:** Crewed Lunar Flyby Mission
- **Artemis-III:** Human Return to the Moon



#### 4. Alzheimer's Disease

**Syllabus:** GS03-Science and Technology

**Prelims:** Alzheimer's Disease

**Context:**

- US FDA has given full approval to the Alzheimer's drug: Lecanemab (Market name: Leqembi)
- Developed by Japanese and American firms: Eisai & Biogen
- Before this another drug Aducanemab, but its efficacy was lacking when tested in the market after the approval.

**About Alzheimer's**

- Alzheimer's is a Neurological disease that causes dementia
- Usually it is genetic, but even people who do not have any known family history might get affected, mainly due to lifestyle
- Not necessarily a disease of old age.

**About Lecanemab**

- The drug Lecanemab slows down the cognitive decline in the patients
- Clears away a beta-amyloid: a sticky protein that can build up into brain-clogging plaque which causes memory loss.

**Concerns**

- It has side effects: can cause Brain Swelling or brain bleeding, or even small brain injuries.
- Can also cause BP fluctuations, and flu-like symptoms just after drug infusion.
- Also, only for patients who are in the very early stages of Alzheimer's

#### 5. One Health Approach

**Syllabus:** GS03-Science and Technology

**Prelims:** One Health Approach

**Context**

- July 6th was World Zoonosis Day.
- 4 agencies: FAO (Food and Agriculture Agency), UNEP (United Nations Environment Program), WHO (World Health Organisation) and WOAH (World Organisation for Animal Health) have released a research agenda to cater to AMR (Antimicrobial Resistance) based on One Health Approach.

**What is Zoonosis?**

- An infectious disease that can transfer from animals to humans.
- >60% of existing and emerging pathogens affecting humans originate in animals.
- 75% of the above come from wild animals.
- E.g. Ebola, Rabies, Avian Flu, Swine Flu, Anthrax etc.
- World Zoonosis day recognizes the day (in 1885) when French Scientist Louis Pasteur successfully administered the first vaccine for a zoonotic disease.

**What is Antimicrobial Resistance?**

- Antimicrobials: Medicines used to cure microbial infections.
- Causes almost 5 million deaths annually
- 2019: 1.27 million direct and 4.95 associated deaths due to AMR
- Can make common diseases deadly
- Huge healthcare costs
- High Failure rate in development of new antimicrobials
- Affect our road towards achieving SDGs

**What is One Health Approach?**

- Integrated approach: Health of Humans, Animals and Environment cannot be dealt with separately.
- Professionals involved in animal, human and environmental health need to follow 3Cs.
- Also need involvement of law enforcement, policymakers, agriculture professionals, communities, and even pet owners.



### Need for One Health Approach?

- Our population is growing and expanding into newer regions.
- Climate Change and Land use Change.
- Increased international trade and travel.

### Benefits of Adopting the Approach?

- Prevent spread of zoonotic diseases in humans and plants.
- Improvement in food safety and security.
- Reduction in AMR infections and improve human and animal health.
- Protection of the global health security.
- Protection of the biodiversity and conservation.
- In May 2021, The One Health High-Level Expert Panel (OHHLEP) was formed to advise FAO, UNEP, WHO and WOAH on One Health issues.

## 6. Bharat 6G Alliance

**Syllabus:** GS03-Science and Technology

**Prelims:** Bharat 6G Alliance

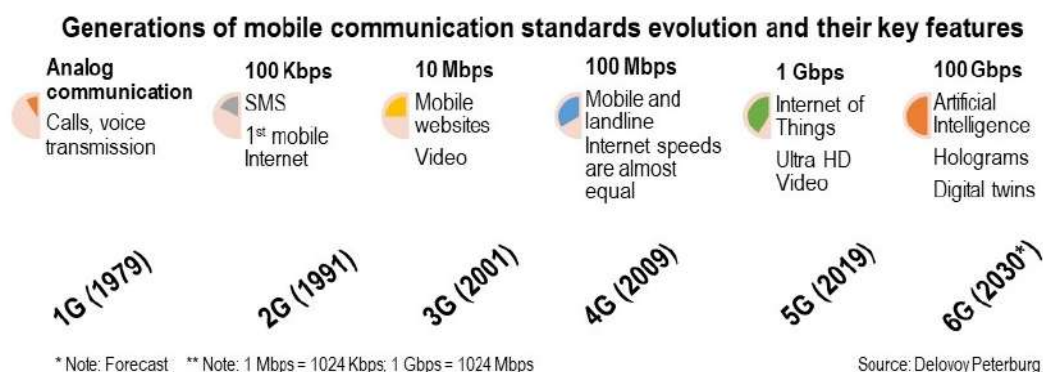
### Context

- Department of Telecommunications, has recently launched the Bharat 6G alliance.
- Main aim: make India a global leader in 6G technology and innovation; forge partnerships with other global 6G alliances.
- Membership: Public and private companies, research institutions, academicians, and standard development organisations.

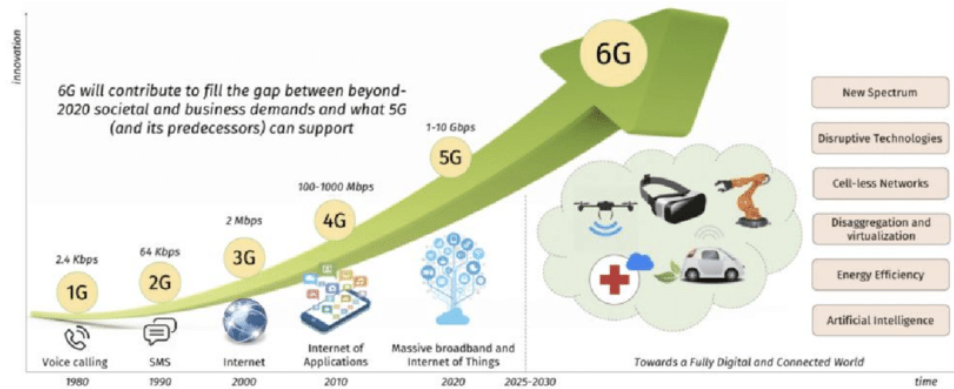
### Benefits?

- Will prepare India technologically and with regards to Human Resources.
- Will help us leverage our existing strength in the IT and Telecommunication sector.

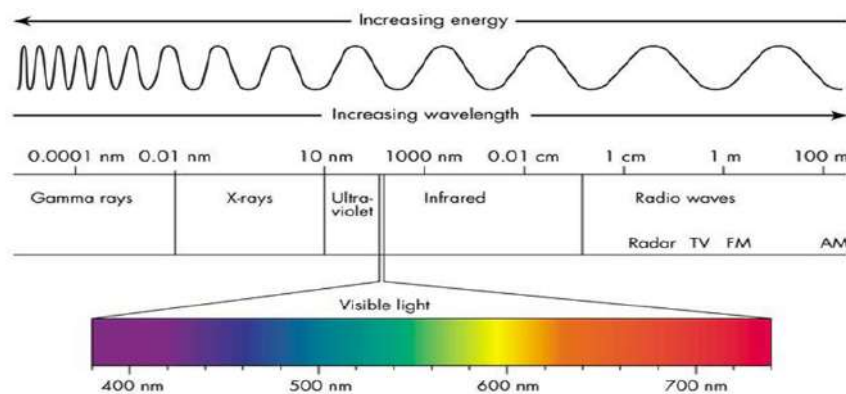
### What is 6G?







- Will use higher frequencies (lower wavelengths) than 5G: millimetre waves & microwaves
- Expected to be 1000 times faster than 5G
- Will be able to support advanced applications like AR/VR, AI, Internet of things and Internet of Senses, etc.
- The standards for the same are yet to be set



#### Other efforts of India in this regards?

- The Prime Minister has envisioned making 6G available to India by 2030
- Technology Innovation Group has been set up to develop the “Vision, Mission, Roadmap and the Action Plan” for 6G adoption in India.
- It will have 6 task forces: Multi-Disciplinary Innovative Solutions, Multiplatform Next Generation Networks, Spectrum for Next Generation Requirements, Devices, International Standards Contribution, and Funding Research and Development.
- India is also involved in the 6G visioning exercise undertaken by the ITU.

## 7. Solar Flares

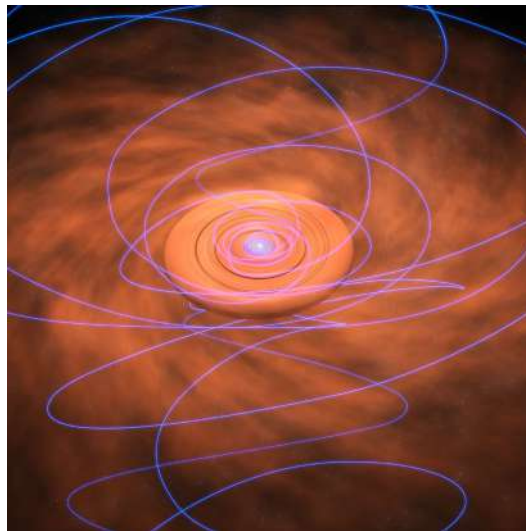
**Syllabus:** GS03-Science and Technology

**Prelims:** Solar Flares

**Context:** Recently, radio communications over parts of the United States and the Pacific Ocean were disrupted by an X-class solar flare emitted by the Sun.

#### What is Solar Flare?

- Sudden, intense burst of electromagnetic radiation and charged particles from the Sun's surface.
- Occurs when magnetic energy stored in the Sun's atmosphere is suddenly released.
- These events can have various effects on Earth, such as disrupting radio communications, causing geomagnetic storms, and potentially posing risks to satellites and astronauts.



Source: National Radio Astronomy Observatory

### Categories of Solar Flares

- Categorized on the basis of their X-Ray brightness.
- X-class: most intense and powerful solar flares. They represent the highest level of X-ray brightness and release a significant amount of energy. Sub categories: X1-X9 (X9 9 times more powerful than X1).
- M-class flares: medium-sized solar flares with a moderate level of X-ray brightness. They are less powerful than X-class flares but still have the potential to cause disturbances in radio communications and affect some aspects of space weather. M1-M9
- C-class flares: smallest category of solar flares. They have a lower level of X-ray brightness and release less energy compared to X-class and M-class flares. While C-class flares are the least intense, they can still produce some minor disruptions in radio communications and have minor effects on space weather. C1-C9

### Impact of Solar Flares

- Radio Communications Disruptions
- Power Grid Interference
- Satellite and GPS Navigation Disruptions
- Aurora Displays
- Astronaut Safety
- Scientific Research Opportunities

## 8. Cluster Bombs

**Syllabus:** GS03-Science and Technology

**Prelims:** Cluster Bombs

**Context:** USA had decided to send cluster bombs to Ukraine to help latter control the advance of Russia.

### What are Cluster bombs?

- Cluster= many units packed in a small space.
- Cluster bombs consist of a main casing that houses a large number of individual submunitions/bomblets.
- Can be launched both from air or ground. USA & allies have already provided the ground based artillery weapons used to launch these (Howitzers)
- **Advantage over normal bombs:** Once launched, the main casing opens up, and sub-ammunition can spread in larger area (increasing the chances of hitting the target/causing more damage)

### Concerns related to Cluster Bombs

- Can hit civilian targets (as after the main casing opens, bomblets can go anywhere).
- High dud rate: Many bomblets might not explode even after hitting ground. They might get accidentally activated later.
- Such non-activated bomblets pose danger to civilians in long term.
- Many advocacy groups call for their ban as their military benefits are far less than its civilian costs.

### International Conventions on Cluster Bombs?

- The Convention on Cluster Munitions: adopted in 2008 in Dublin.
- Prohibits the use, production, transfer, and stockpiling of cluster munitions
- Over 123 countries have joined this treaty of which 111 have ratified it.
- However, 12 countries who have a history of possessing and using the bombs aren't a part of this. (Eritrea, Ethiopia, Georgia, Israel, Libya, Morocco, Russia, Saudi Arabia, Sudan, Syria, Thailand and USA.)



## 9. Chandrayaan 3

**Syllabus:** GS03-Science and Technology

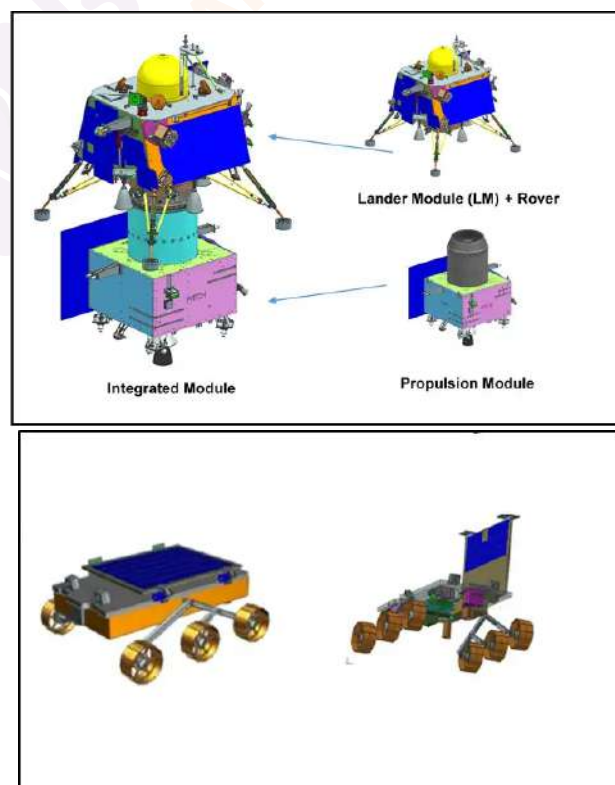
**Prelims:** Chandrayaan 3

### Why in the News?

- India is going to launch its 3rd Lunar Mission on July 14.
- To make soft landing on the moon. (Chandrayaan 2 failed to do so.)
- Major Objectives:
  - Demonstrate Safe and Soft Landing on the Lunar Surface
  - Demonstrate the Rover roving on the moon and
  - Conduct in-situ scientific experiments.
- Aims to conduct in-situ studies, analyze the lunar soil, and gather more information about the Moon's surface, its mineral composition, and the presence of water ice.

### About the Chandrayaan 3 Mission

- Will include a rover and a lander.
- The lander will make a soft landing, post which the rover will roll out and conduct 14 day long exploration of the lunar surface.



Chandrayaan-3 Rover on Ramp and Deployed Views

### Payloads

- **Lander (Vikram):**
  - Chandra's Surface Thermophysical Experiment (ChaSTE)
  - Instrument for Lunar Seismic Activity (ILSA)
  - Langmuir Probe (LP)
  - A passive Laser Retroreflector Array from NASA is also accommodated for lunar laser ranging studies.
- **Rover (Pragyan):**
  - Alpha Particle X-ray Spectrometer (APXS)
  - Laser Induced Breakdown Spectroscope (LIBS)
  - It will use the Chandrayaan-2 Orbiter to communicate with Earth.
- **LVM-3: Launch Vehicle for Chandrayaan-3**
  - Launch Vehicle Mark-3
  - Most powerful GSLV.
  - First journey in 2014.
  - Also carried Chandrayaan 2 in 2019.
- **LVM-3 has 3 stages:**
  - The first (or bottom-most) stage combusts a solid fuel called hydroxyl-terminated polybutadiene.
  - The second stage is powered by two Vikas engines, which combust a liquid fuel – either nitrogen tetroxide or unsymmetrical dimethylhydrazine.
  - The uppermost final stage is powered by a cryogenic engine. It combusts liquefied hydrogen with liquefied oxygen.

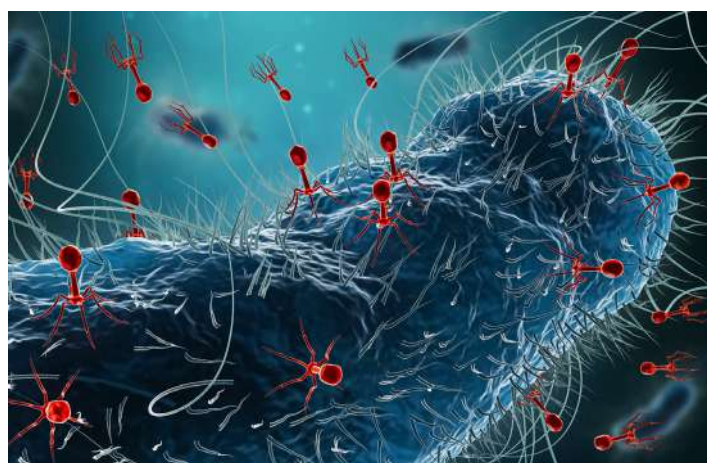
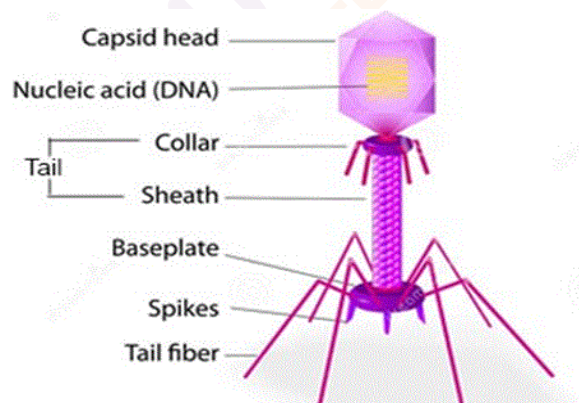
## 10. Bacteriophages

**Syllabus:** GS03-Science and Technology

**Prelims:** Bacteriophages

**Context:** Scientists believe that bacteriophages, which hunt and kill bacteria, could treat bacterial infections as antibiotic resistance increases.

### About Bacteriophages:



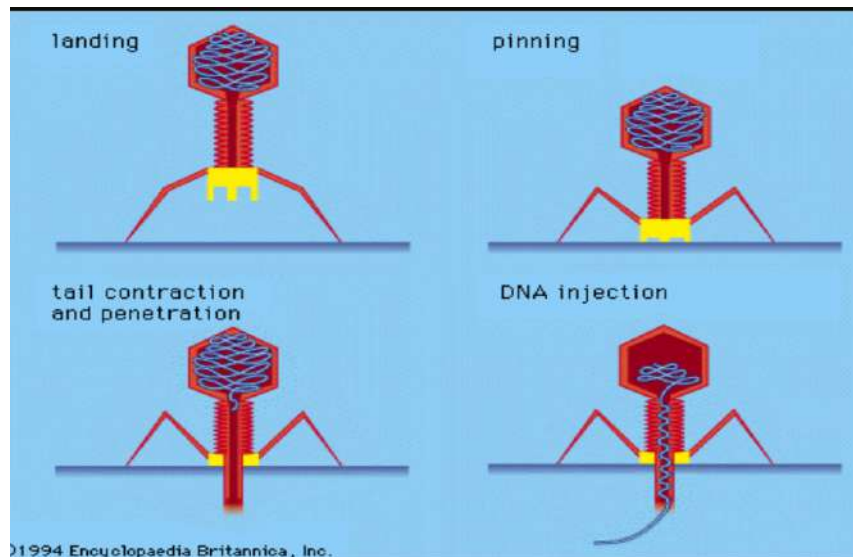
- It is also called phage or bacterial virus, any of a group of viruses that infect bacteria.
- It was discovered independently by Frederick W. Twort in Great Britain (1915) and Félix d'Hérelle in France (1917).



- D'Hérelle coined the term bacteriophage, meaning "bacteria eater," to describe the agent's bacteriocidal ability.
- Mechanism of Bacteriophages
- Bacteriophages infect bacteria in a two-step process: - Attachment and Penetration: bacteriophage injects its DNA into the bacteria.

#### What are the Characteristics of bacteriophages?

- Thousands of varieties of phages exist, each of which may infect only one type or a few types of bacteria or archaea.
- Phages are classified in a number of virus families; some examples include Inoviridae, Microviridae, Rudiviridae, and Tectiviridae.
- Like all viruses, phages are simple organisms that consist of a core of genetic material (nucleic acid) surrounded by a protein capsid.
- The nucleic acid may be either DNA or RNA and may be double-stranded or single-stranded.
- There are three basic structural forms of phage: an icosahedral (20-sided) head with a tail, an icosahedral head without a tail, and a filamentous form.



#### How they process in Human body?

- Bacteriophages are harmless to human cells as they do not recognize them as their bacterial prey.
- They work by hunting down bacteria and attaching themselves to the surface of a bacterial cell, before injecting viral DNA material into the cell.
- The viral DNA then replicates inside the bacteria, once enough new viruses have been created inside the bacterial cell, the cell then bursts to release the new viral particles.
- All this takes just 30 minutes, meaning one virus can become many in a couple of hours.

#### Benefits of bacteriophages

- Can be used to treat bacterial infections
- Are often more effective than antibiotics
- Are less likely to cause side effects
- Can be used to control bacterial populations in the environment

#### Drawbacks of bacteriophages

- Are not effective against all bacteria
- Can be difficult to produce in large quantities
- Are not as well-studied as antibiotics

#### The future of bacteriophages

- There is growing interest in bacteriophages as a treatment for bacterial infections
- More research is needed to develop effective phage therapies



## 11. Steel Slag Road Technology

**Syllabus:** GS03-Science and Technology

**Prelims:** Steel Slag Road Technology

**Context:** The innovative Steel Slag Road technology developed by the Central Road Research Institute (CRRI), New Delhi in collaboration with the Ministry of Steel and major steel manufacturing companies is making significant strides towards the 'Waste to Wealth' mission.

- This technology is revolutionizing road construction and addressing the environmental challenges of steel slag waste.

### What is Steel Slag Road Technology?

- Steel slag road technology is a novel method of using steel slag, the waste generated during steel production, to build more robust and more durable roads.
- The technology involves processing the steel slag to remove impurities and metal content and then using it as an aggregate for road base or sub-base layers.
- The processed steel slag has high strength, hardness, abrasion resistance, skid resistance, and drainage capacity, making it suitable for road construction.
- It facilitates the large-scale utilization of waste steel slag generated by steel plants, effectively managing the approximately 19 million tonnes of steel slag produced in India.



### How are steel slag roads made?

- Steel slag is crushed and processed into a fine aggregate
- The aggregate is then mixed with bitumen or cement to form a road mix
- The road mix is then laid down and compacted to form a road surface

**Successful Implementations:**

- Surat's Technological Marvel: The first road constructed using the Steel Slag Road technology in Surat, Gujarat, has garnered recognition for its technological excellence.
- Border Roads Organization's Contribution:
- The technology's success extended to the India-China border, where the Border Roads Organization, along with CRRI and Tata Steel, constructed a steel slag road in Arunachal Pradesh.
- This project demonstrated the technology's suitability for challenging terrains and critical national infrastructure.

**Benefits of steel slag roads:**

- More durable than traditional roads
- More resistant to cracking and potholes
- Less likely to be affected by water damage
- More environmentally friendly than traditional roads
- Control Steel Slag waste

**12. Genome-sequencing screening for babies unlocks blueprint of health**

**Syllabus:** GS03-Science and Technology

**Prelims:** About Rapid Whole-Genome Sequencing

**Context:**

The article discusses the benefits of rapid whole-genome sequencing for newborns, enabling early diagnosis and treatment of genetic diseases.

**Introduction:**

- Scenario: Severely ill newborns in the ICU require fast and effective diagnosis for effective treatment.
- Complication: Rare diseases that are not well-known to clinicians can be challenging to identify.
- Genetic diseases: Approximately 6,000 genetic diseases exist, with only around 3,500 documented and fewer with mapped genetic defects.

**Importance of Rapid Whole-Genome Sequencing:**

- Newborn screening programs focus on early diagnosis for effective treatment and prevention of death or disability.
- Current newborn screening programs are limited in the number of genetic tests they cover.
- Genomic sequencing is now available, accessible, and affordable, providing better coverage for genetic diseases.
- Whole-genome sequencing is a single test that allows for fast and effective diagnosis compared to multiple routine tests.

**Positive Outcomes and Statistics:**

- Research by Stephen Kingsmore's team showed that whole-genome sequencing diagnosed around 40% of cases, compared to 10% with standard genetic tests.
- 26% of diagnosed children benefited from reduced illness severity and lower treatment costs.
- A UK study reported similar results, validating the effectiveness of whole-genome sequencing.

**Screening Healthy Babies:**

- The BabySeq project evaluated the sequences of healthy and sick infants and found that over 10% had unanticipated risk of genetic diseases.
- Sequencing helped diagnose diseases and provided better medical surveillance for infants.
- Additional family members benefited from sequencing, and some infants underwent surgeries.

**Support for Routine Sequencing:**

- A study surveyed over 200 genetic experts, and most believed that sequencing babies should be part of routine care.
- The UK National Health Services launched a nationwide program to sequence 100,000 sick babies.

**Speed of Sequencing:**

- The fight for fast sequencing started with Dr. Kingsmore's team broke the Guinness World Record in 19.5 hours. In 2021, Euan Ashley's team achieved sequencing in just over 5 hours and 2 minutes.
- A large study suggested a median time of just over 20 hours for sequencing, clinical interpretation, and reporting.

**Ethical Considerations:**

- Ethical challenges include the disclosure and management of incidental and secondary findings, privacy concerns, and psychological impacts on families.
- Equitable distribution of benefits and burdens raises issues of justice and fairness.

**Conclusion:**

- Rapid whole-genome sequencing offers the means to detect rare genetic disorders, anticipate disease susceptibility, and improve treatment decisions.
- Balance between benefits and harm must be carefully considered.
- Rapid whole-genome sequencing may become a standard diagnostic approach for unwell infants.
- The future envisions that every child will have the right to rapid whole-genome sequencing.

**13. Untangling Threads**

**Syllabus:** Science and Technology- developments and their applications and effects in everyday life.

**Mains:** What is Threads and issues faced in the EU

**Background**

- Threads, a text-based public chat app launched by Meta, was created by the team behind the photo-sharing app Instagram.
- Users in the European Union were unable to download Threads 5, as Meta postponed its release in these countries due to regulatory compliance issues in the region.

**What are Threads?**

- Threads is a text-based public chat app developed by the same team that created Instagram.
- Threads users must sign up using Instagram and can utilise their original username as well as the accounts they were following on Instagram.

**Threads facing issues in the EU**

- Users in the European Union were unable to download Threads since Meta delayed its release in these countries due to regulatory compliance issues in the region.
- Separately, the European Court of Justice sided with Germany's anti-cartel authority, which wanted to halt Meta's practice of combining data from Facebook, Instagram, and WhatsApp.

**Conclusion**

- Meta's Threads intends to leverage the ActivityPub protocol, which Mastodon currently employs, in the future so that the platforms can collaborate.
- Twitter, on the other hand, is a centralised social media network with more direct control over user actions and content regulation. If Twitter users want to move their accounts to another platform, they must start from scratch with no followers or posts.

**Nut graf:** Meta is the finest competitor to an increasingly volatile Twitter. However, the recently introduced Threads app introduces experimental features, dark patterns, and algorithmic feeds at a time when more internet users expect accessibility, openness, and responsibility from social media firms.

**14. LVM-3: the other ISRO rocket**

**Syllabus:** GS 3- Science and Technology

**Prelims:** General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology, bio-technology

**Details:**

- ISRO has three classes of launch vehicles: PSLV, GSLV, and SSLV
- PSLV
  - PSLV is known as a “workhorse” with a low failure rate and has been launched the most
  - PSLV can lift up to 3.8 tonnes to low-earth orbit
- GSLV
  - GSLV is used for heavier payloads and higher orbits
  - GSLV has multiple configurations, with LVM-3 (Launch Vehicle Mark 3) being the most powerful
  - LVM-3
    - It can lift up to 10 tonnes to low-earth orbit
    - LVM-3 has three stages: S200 boosters, Vikas engines, and a cryogenic engine
    - S200 boosters use hydroxyl-terminated polybutadiene as solid fuel
    - Vikas engines use either nitrogen tetroxide or unsymmetrical dimethylhydrazine as liquid fuel
    - The final stage of LVM-3 is powered by a cryogenic engine that uses liquefied hydrogen and oxygen
- Chandrayaan 3 mission will be launched on July 14 onboard an LVM-3

**15. AI's disruptive economic impact, an India check**

**Syllabus:** GS-3, Science and Technology – developments and their applications and effects in everyday life.

**Mains:** Positive and negative effects of AI adoption at work

**Background:**

- Artificial intelligence (AI), which goes beyond self-driving cars, robocops, and automated factory machinery, has smashed into our lives, penning poems and passing the most difficult tests.
- The recent growth of Large Language Models and Generative AI has increased global interest in the advancement of AI.

**What is AI?**

- Artificial intelligence (AI) is the simulation of human intelligence processes by computers, particularly computer systems.
- Expert systems, natural language processing, speech recognition, and machine vision are examples of AI applications.

**Positive Effects of AI Adoption at Work**

- A research paper titled “Generative AI at Work” found that AI technologies increased worker productivity by 14%.
- It raised customer happiness, which resulted in better treatment of customer service representatives and more employee retention.
- According to a recent survey of employees, nearly 70% believe AI is assisting them in being faster, smarter, and more productive.
- AI's ability to generate human-like output and break down communication barriers between humans and machines could have significant macroeconomic benefits.

**Negative Effects of AI Adoption at Work**

- **Labour replacement:** AI adoption has a detrimental impact on workers, reducing labour share, employment, and salaries. These negative consequences mostly affect blue-collar workers and people with lower levels of education.
- **Impact on social welfare:** Automation reduces labour share and salaries, especially when automation productivity increases are minor. Concerns about automation increasing inequality among workers and potentially major negative effects on social well-being.



- **Intensified competition:** AI has the potential to increase competition and widen the technical barrier between enterprises. AI has the potential to be highly disruptive since it is more likely to displace middle-class, white-collar occupations.
- **Economic challenges:** AI poses significant challenges to the economy, including in the labour market, politics, data privacy, crime, and conflict; these challenges are difficult to forecast and plan for.

#### Opportunities for India

- India should be on guard since any net negative effect on employment might have a negative impact on the economy.
- The increased efficiency brought about by the use of AI in contact centres and software businesses does not bode well for the millions of Indians who labour in these industries.
- Regulation of AI use is not a viable answer because it will drive away investments and new prospects.
- It would be good for India to invest more in AI education and training in order to capitalise on the demographic dividend and new opportunities created by AI.

#### Way Forward

AI has infiltrated every part of the global economy, and its impact on productivity and growth is positive. Views on the influence of AI on the work market and society are pessimistic. In response to the increasing difficulties posed by AI, governments would need to strengthen their cyber rules. Countries may also require tax capital to balance capital and labour returns in order to prevent displacement and distributional impacts.

To fully realise AI's productivity potential, business processes must be restructured and investments boosted.

**Nut Graf:** AI developments are now a reality, and arming ourselves with the latest tools will help us keep up with everyone else. With the rise of AI, the topics of worker replacement and economic growth have entered the same downward cycle that the Internet once did.

### 16. Quantum computing & Majorana fermions

**Syllabus:** GS 3- Science and Technology

**Prelims:** General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology, biotechnology

#### Introduction:

- Microsoft researchers have announced a breakthrough in creating Majorana zero modes, a type of particle that could transform quantum computing.
- These particles, with unique properties, offer increased computational robustness and less fragility to quantum computers.

#### Understanding Majorana Particles:

- All subatomic particles that constitute matter are called fermions.
- The Dirac equation, developed in 1928, predicted the existence of antiparticles for each particle.
- In 1937, physicist Ettore Majorana discovered that certain particles could be their own antiparticles, leading to their classification as Majorana fermions.

#### Majorana Zero Modes Explained:

- Majorana zero modes are bound states that are their own antiparticles and possess specific quantum numbers.
- They can be used in topological quantum computing, offering greater stability and protection of encoded information.
- Unlike regular qubits, which are fragile, qubits based on Majorana zero modes can resist decoherence and maintain encoded information for extended periods.

#### Advantages of Majorana Zero Modes:

- Majorana zero modes utilise topological degeneracy, where a system can exist in multiple states at the lowest energy level.
- These modes can store information based on different topological properties, ensuring information retention and protection.
- Majorana zero modes also exhibit non-Abelian statistics, enabling algorithms with increased degrees of freedom for complex computations.

#### Challenges and Progress:

- Creating Majorana zero modes is a challenge, with various research attempts and studies underway.
- Researchers at Microsoft recently reported engineering a topological superconductor that demonstrated indications of hosting Majorana zero modes.
- The device passed a stringent protocol and showed conductance peaks associated with Majorana zero modes, but independent confirmation is needed.



**Implications for Quantum Computing:**

- Majorana zero modes have the potential to revolutionise quantum computing, offering enhanced computational power and reliability.
- However, further improvements in simulation, growth, fabrication, and measurement capabilities are required for practical implementation.
- While estimates of achieving a quantum supercomputer with Majorana qubits vary, continued research and development are essential.

**17. Chandrayaan**

**Syllabus:** Achievements of Indians in science & technology.

**Mains:** Indigenisation of technology and developing new technology.

**Prelims:** About Chandrayaan

**Context:**

The article discusses India's lunar missions, including Chandrayaan-1 and Chandrayaan-2, and highlights the upcoming mission, Chandrayaan-3, emphasising the importance of lunar exploration and strategic investment in high-tech areas.

**Introduction:**

- The Moon captivates people with its serene beauty and connection to nature.
- Studying the Moon's origin, characteristics, and potential for human habitation is a scientific pursuit.
- India, with its strong industrial and technological support base, is well-positioned to study the Moon.

**Chandrayaan-1: India's First Lunar Mission**

- Launched in October 2008, Chandrayaan-1 successfully orbited the Moon and deployed an impact probe.
- The mission confirmed the presence of water molecules on the Moon, crucial for future manned missions.
- Despite some technical issues, the mission achieved its scientific objectives and garnered international recognition.

**Chandrayaan-2: Challenges and Discoveries**

- Launched in July 2019, Chandrayaan-2 aimed to land a rover on the Moon but encountered a software glitch.
- Citizen participation, exemplified by Shanmuga Subramanian's identification of the lander debris, enhances scientific endeavours.
- Lessons learned from Chandrayaan-2 contribute to improved design and planning for future missions.

**Chandrayaan-3: Advancing Lunar Exploration**

- Chandrayaan-3, scheduled for launch on July 14, 2023, aims to demonstrate safe landing and roving on the Moon.
- The mission will study the lunar surface's chemical composition, seismic activity, and plasma concentration.
- The propulsion module will carry a payload for tracking radiation from Earth, aiding the search for life on habitable exoplanets.

**Importance of Lunar Missions**

- Collaborative international efforts in lunar missions foster scientific exchange and camaraderie between countries.
- Exploring the Moon's south polar region holds the potential for understanding the origin of the Solar System and primordial material.
- Space technologies utilized in lunar missions also benefit society, including weather prediction, resource assessment, and communication.

**Strategic Investment in High-Tech Areas**

- Investing in emerging technologies, such as lunar exploration, positions a nation as a leader in the field.
- Balancing resources between futuristic technologies and those immediately relevant enhances a country's scientific and technological base.
- R. Chidambaram highlighted the strategic advantage gained through participation in emerging technologies.

**Nut Graf:** India's space agency, ISRO, has made significant progress in lunar exploration with its Chandrayaan missions, showcasing the country's technological capabilities. The upcoming Chandrayaan-3 mission aims to further study the Moon, fostering international collaboration and benefiting both scientific pursuits and societal needs.

**18. Vikram Sarabhai Space Centre**

**Syllabus:** GS 3- Science and Technology

**Prelims:** Important Institutions in the field of Science and Technology, Indigenisation of technology

**Introduction:**

- The upcoming launch of India's third moon mission from the Satish Dhawan Space Centre will involve key operations at the Vikram Sarabhai Space Centre (VSSC) in Thumba.
- The VSSC's Virtual Launch Control Centre (VLCC) plays a crucial role in ensuring a safe launch of the powerful Launch Vehicle Mark-III (LVM3) carrying the Chandrayaan-3 spacecraft.

**Role of VLCC in System Checkouts:**

- The VLCC enables the Indian Space Research Organisation (ISRO) to remotely carry out system checkouts on the launch vehicle before each mission.
- Ahead of the Chandrayaan-3 launch, scheduled for 2.35 p.m., all system checkouts up to 14 minutes and 30 seconds before liftoff will be conducted from the VLCC.
- The VSSC official explains that the VLCC ensures the proper functioning of electronics, actuators, and commands, while the launch command will be given from Sriharikota.

**Significance of VSSC and LVM3:**

- The VSSC is the lead unit of ISRO for launch vehicles and is responsible for the design and development of the LVM3 (formerly GSLV Mk-III) launch vehicle.
- The Chandrayaan-3 spacecraft consists of the Propulsion Module and the Lander and Rover components.

**Virtual Operations During the Pandemic:**

- The VLCC at Thumba was operationalized during the COVID-19 pandemic when large-scale movement of personnel for space missions was restricted.
- With a small group of scientists managing the facility, it has been successfully utilized for various missions, including the LVM3 M2/OneWeb India-1 mission in October 2022.

**19. India's third lunar odyssey commences with perfect launch**

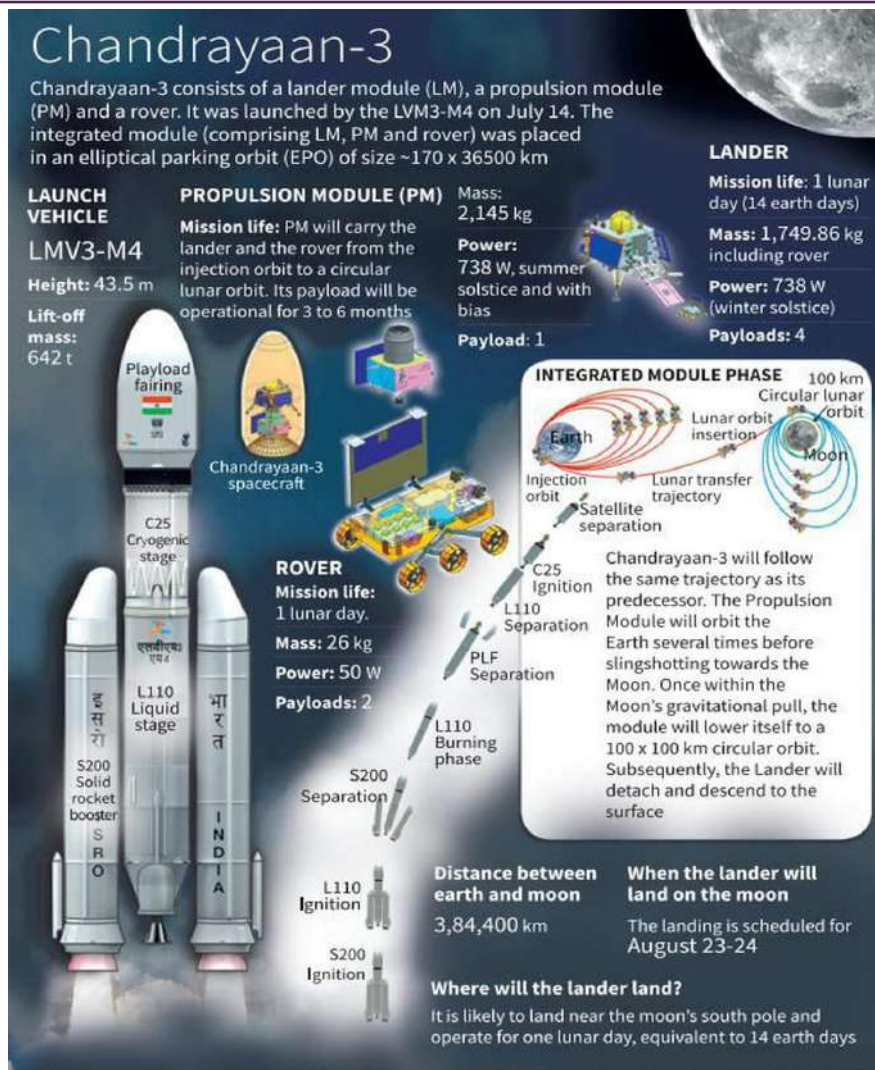
**Syllabus:** Achievements of Indians in science & technology; indigenization of technology and developing new technology.

**Mains:** Chandrayaan-3 and its significance

**Context:** The Chandrayaan 3 project from India was launched with the goal of landing a spacecraft on the lunar surface.

**About Chandrayaan-3**

- The Satish Dhawan Space Centre in Sriharikota successfully launched Chandrayaan-3 using a Launch Vehicle Mark-3 (LVM-3) rocket.
- In order to demonstrate end-to-end capability in safe landing and wandering on the lunar surface, it is a follow-up mission to Chandrayaan-2.
- After Chandrayaan-2's failed attempt in 2019, this is India's second attempt to soft-land robotic instruments on the lunar surface.
- Only the United States, Russia, and China have accomplished soft landings on the moon so far.



Source: The Hindu

### Main objectives of Chandrayaan-3

- The Spectro-Polarimetry of Habitable Planet Earth (SHAPE) payload on Chandrayaan-3 will analyse Earth's light to investigate its spectral and polarimetric characteristics.
- The moon's composition and geology will be studied by the rover, which will provide scientists with more information about the moon's past and present.

### Key differences between Chandrayaan-2 and Chandrayaan-3

- Chandrayaan-3 will launch with merely a lander and a rover as opposed to Chandrayaan-2's combination of the Vikram lander, Pragyan rover, and an orbiter.
- Legs on the Vikram lander will be more durable than those on the previous model. From 3 m/s to 2 m/s, the landing velocity has been increased.
- Vikram has also undergone the installation of more fuel, which will increase its ability to travel or handle dispersion. Additionally, a new sensor has been included.
- While Chandrayaan-3's propulsion module will only have one sensor, the Spectro-polarimetry of Habitable Planetary Earth (SHAPE), the Chandrayaan-2 Orbiter was launched with an amazing array of nine in-situ instruments.
- The Laser Retroreflector Array (LRA), a passive experiment to comprehend the dynamics of the Moon system, is being sent with the lander as an adjunct to the Chandrayaan-3 mission.

### Components

The Chandrayaan-3 mission's three main components are a lander module, a rover, and an indigenous propulsion module. Its goal is to research and demonstrate new technologies needed for interplanetary missions. Six payloads are being carried by Chandrayaan-3 in order to examine the lunar surface and take pictures of Earth from lunar orbit.

- **Fat Boy: LVM3 rocket:** The biggest and heaviest LVM3 rocket, affectionately known as "fat boy" by ISRO scientists for its heavy lifting capacity, has successfully completed six flights in a row. Chandrayaan-3 will be sent into a Geo Transfer Orbit by LVM3.
- **Propulsion module:** The Chandrayaan-3 mission is significant because the Propulsion Module carries a payload called SHAPE, or Spectro-Polarimetry of Habitable Planet Earth, which will allow researchers to examine Earth from lunar orbit. The primary function of the propulsion module is to convey the lander and rover into lunar orbit.
- **SHAPE payload:** The SHAPE is an experimental payload designed to investigate the near-infrared spectro-polarimetric fingerprints of the Earth.

- **Lander Module:** After landing on the moon's surface, the lander module will carry payloads such as RAMBHA-LP, which will detect the density of plasma ions and electrons near the surface and its variations.
- **ChaSTE:** Chandra's Surface Thermo Physical Experiment is designed to assess the lunar surface's thermal characteristics close to the poles, while ILSA (Instrument for Lunar Seismic Activity) is used to gauge seismic activity around the landing site and map the composition of the lunar crust and mantle.
- **Rover:** The Rover would emerge from the lander module after the gentle landing to examine the moon's surface with its payload.
- **APXS:** To deepen our understanding of the lunar surface, the Alpha Particle X-Ray Spectrometer will be used to determine the chemical composition and infer the mineralogical composition.
- **Safe and Soft Lunar Landing:** Chandrayaan-3's main goal is to demonstrate a soft and safe lunar surface landing. This project intends to demonstrate India's technical prowess in making a precise lunar landing.

### Significant Features of Chandrayaan-3

- **Exploration of the Lunar South Pole:** The first mission to set foot on the lunar South Pole will be Chandrayaan-3. Due to its constantly shaded parts, where the presence of water ice is anticipated, this location is of particular interest. The mission's goal is to learn more about this area's distinctive geology and composition.
- **Technological Advancements:** Chandrayaan-3 is intended to create and showcase fresh technology needed for extraterrestrial missions. It will help develop the design of spacecraft, the landing systems, and the mobility of celestial bodies.
- **Global Scientific Collaboration:** The information and results obtained by Chandrayaan-3 during its exploration of the lunar South Pole will be highly valuable and relevant to the entire world's scientific community. The findings will be analysed and studied by researchers from all over the world to learn more about the geological history and processes on the Moon.
- **Advancements in Spacefaring Ambitions:** India's technical prowess and its grandiose goal of space exploration would be showcased by the successful landing on the lunar South Pole. Chandrayaan-3 aids in the overarching objectives of increasing human presence outside of Earth and preparing the way for upcoming space missions.

### Conclusion

ISRO is breaking new ground by roving on the lunar surface and soft-landing on the moon's surface using its lunar module. Future interplanetary missions are anticipated to benefit from the mission.

**Nut Graf:** India will gain access to a lot of facts about the lunar surface through the Chandrayaan-3 mission, as well as information about its potential for future human habitation.

## 20. Unethical to continue using polio-causing oral vaccines

**Syllabus:** Achievements of Indians in science & technology; indigenization of technology and developing new technology.

**Mains:** Issues with polio-causing oral vaccines

### Background

- The World Health Assembly committed WHO to ending polio worldwide by 2000 in 1988.
- However, the objective in 1993 was to completely eradicate the wild poliovirus by the year 2000. That meant the goal had changed from eliminating vaccine-derived poliovirus (VDPV) and vaccine-associated paralytic poliomyelitis (VAPP).
- The cause is that annually, developing nations that use the oral polio vaccination reported a high number of vaccine-derived or vaccine-associated cases of polio.
- Meanwhile, affluent nations shifted to the inactivated polio vaccine, which decades ago led to the eradication of polio.

### What is the Vaccine dilemma?

- Type 2 virus included in oral polio vaccinations is responsible for more than 90% of vaccine-derived poliovirus outbreaks.
- Additionally, type 2 oral polio vaccine is the culprit for 40% of VAPP. But in nations where vaccination is used, there are a lot of cases of VAPP from type 3 virus.
- Surprisingly, despite 34 years of polio eradication efforts, the Global Polio Eradication Initiative (GPEI) has never recorded a case of VAPP.

### What is the scenario in India?

- Due to the rarity of these instances and the minimal to nonexistent risk they provide to others, the Indian government does not designate VAPP as polio.
- This is troubling because India saw an increase in the frequency of VAPP-compatible cases between 1998 and 2013.
- The number of vaccine-derived type 2 poliovirus outbreaks has increased dramatically after the global switch to bivalent oral polio vaccination.
- In 2018, there were five reported outbreaks, up from just two in 2017, which resulted in 96 VDPV type 2 cases. In 2019, there were 251 VDPV type 2 cases, up from 15 in 15 countries.

**Nut Graf:** The switch from trivalent to bivalent OPV vaccination and the introduction of one dose of IPV were expected to eliminate all instances of type 2 vaccine-derived poliovirus, yet such cases increased dramatically.



## 21. Evolution

**Syllabus:** General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology, bio-technology

**Mains:** Recent developments and their applications and effects in everyday life

**Prelims:** About genome sequencing and synthesis

### Context:

Synthetic biology has opened avenues to understand minimal genome requirements. Researchers explore the evolution and adaptation of synthetic life forms, revealing insights into molecular mechanisms and practical applications.

### Introduction:

- Genome sequencing and synthesis advancements have enriched our understanding of genomes in humans and other life forms.
- Researchers aim to determine the minimal genome requirements for organisms to live and replicate.
- Synthetic biology has emerged as a field of research, driven by advancements in reading and writing genome sequences.

### Creating Synthetic Life Forms:

- Researchers at the J. Craig Venter Institute (JCVI) attempted to synthesise a small bacterial genome in 2008.
- In 2010, they successfully synthesised a modified genome of *Mycoplasma mycoides*, named JCVI-syn1.0.
- JCVI-syn1.0 was introduced into a cell, allowing it to replicate and become one of the first synthetic life forms.
- This achievement was a technological feat and expanded our understanding of the molecular mechanisms of life.

### The Development of Minimal Genomes:

- JCVI and Synthetic Genomics, Inc. worked on creating a minimal genome by systematically deleting parts of *Mycoplasma mycoides*' genome.
- They created JCVI-syn3.0, which had a reduced number of genes and was compatible with life.
- Further modifications resulted in versions JCVI-syn3.A and JCVI-syn3.B, optimized for laboratory conditions.
- JCVI-syn3.B had additional genomic modifications to interact with human cells, enabling cultivation with HeLa cell lines.

### Evolution of a Minimal Genome:

- Researchers at Indiana University conducted an experiment to understand the adaptation and evolution of synthetic life forms.
- A bacterial organism with a minimal synthetic genome was cultured for over 300 days, equivalent to approximately 2,000 rounds of replication.
- The synthetic genome showed a robust potential to develop genetic variations.
- When mixed with other bacterial cultures, the evolved synthetic bacteria outcompeted the non-evolved minimal version.

### Natural Adaptation of Synthetic Life Forms:

- Synthetic life forms demonstrated the ability to evolve through natural processes of adaptation.
- The minimised genome did not constrain natural adaptation, contrary to initial beliefs.
- Genome sequencing identified specific genes and regions that accumulated genetic variants associated with adaptation.
- The evolutionary paths of the minimal genome differed from those of native/non-adapted organisms.

### Implications and Applications:

- Understanding the natural evolutionary processes of synthetic life has practical applications in industrial-scale production.
- Insights into evolutionary processes aid in comprehending antimicrobial resistance and pathogen immune evasion.
- Synthetic genomes provide opportunities for preventive measures and preparedness against emerging challenges.

### Conclusion:

- Synthetic biology has advanced our understanding of minimal genome requirements and the evolution of synthetic life forms.
- Synthetic genomes can adapt and evolve through natural processes, offering valuable insights into molecular mechanisms.
- These findings have broad implications for industrial production, disease prevention, and understanding natural evolutionary processes.

**Nut Graf:** Advancements in genome sequencing and synthesis have led to the emergence of synthetic biology, where researchers aim to determine the minimal genome requirements for organisms to live and replicate. The evolution and adaptation of synthetic life forms offer valuable insights into molecular mechanisms and practical applications.



## 22. Rho Ophiuchi cloud complex

**Syllabus:** GS 3- Science and Technology

**Prelims:** James Webb Space Telescope and Rho Ophiuchi cloud complex

### Introduction:

- NASA celebrates one year since the unveiling of the James Webb Space Telescope's first scientific results.
- The telescope captured an image of the Rho Ophiuchi cloud complex, the nearest star-forming region to Earth.
- The image showcases a nebula, an immense cloud of interstellar gas and dust that acts as a nursery for new stars.

### The Significance of the Image:

- **Insight into New Star Formation:** The Rho Ophiuchi cloud complex offers a glimpse into the formation of new suns and planet-forming disks.
- **Time Capsule:** The image presents similarities to what scientists believe the early solar system looked like over 4.5 billion years ago.
- **Dusty Cocoon:** The Rho Ophiuchi core is concealed by vast amounts of dust, rendering it invisible to telescopes operating in visible light.
- **Webb's Capability:** The James Webb Space Telescope overcomes this challenge by peering through the dust, revealing the young stars within and capturing the earliest stages of star formation.

### Details of the Image:

- **Jets of Material:** The image showcases the influence of material jets emitted by young stars on the surrounding gas and dust, illuminating molecular hydrogen.
- **A Star in a Glowing Cave:** One section of the image displays a star situated within a luminous cave formed by its stellar winds in space.

### Webb's Achievements:

- **Unveiling Early Galaxies and Black Holes:** Since becoming operational, Webb has uncovered the existence of the earliest-known galaxies and black holes.
- **Compact Yet Mature Galaxies:** The telescope has observed large and mature galaxies with a surprising level of compactness, brimming with stars formed shortly after the Big Bang.
- **Enhanced Sensitivity:** Webb, designed to be more sensitive than the Hubble Space Telescope, primarily observes the universe in the infrared spectrum, offering a unique perspective.
- **Looking Back in Time:** Due to its increased capability and ability to study greater distances, Webb enables scientists to peer further back in time, unravelling the mysteries of the early universe.

## 23. A push for GM mustard disregarding science, the law

**Syllabus:** GS-3, Biotechnology

**Mains:** GM crops in India

### Context

There is a debate over environmental clearance for indigenously developed genetically modified (GM) mustard seeds in India.

### Need for GM Crops

- GM crops differ significantly from conventional types and hybrids like those created by farmers, agricultural research organizations, and businesses.
- To create a GM crop, biotechnologists randomly insert chosen genes into the DNA of a plant.
- A GM crop now expresses features that it wouldn't have otherwise because of the insertion. For instance, GM mustard has been modified to withstand the glufosinate herbicide or broad-spectrum plant-killer.
- This enables the creation of hybrid mustard seeds for greater yields.
- The herbicide can be sprayed by the farmers who are producing GM mustard to destroy all vegetation but the mustard.

### The debate about GM crops in India

- Many people have been worried by the experience with Bt cotton, the country's first and only certified GM crop.
- Long-term study indicates that Bt cotton has greatly increased farmers' risk and cultivation expenses while offering just temporary benefits.
- On the other side, some seed businesses have made large profits from the pricey GM seeds.

### Concerns over GM Crops

- **Weakness of Regulatory System:** The parliamentary committees called attention to significant regulatory system flaws and urged extreme caution before releasing genetically modified foods that could have long-term effects on biosafety, environmental danger, and socio-economic effects.
- **Convergence in Risk Assessment:** The parliamentary committee declared HT (herbicide-tolerant) crops entirely unsuited in the Indian setting and warned of significant consequences for the environment, rural livelihoods, and sustainable agriculture. In this instance, eminent experts and the people's elected representatives have come to a certain consensus. This is the strongest possible argument against the release of any HT crop and in favour of significantly tighter regulation prior to the introduction of GM food. Such convergence disproves the myth that those who oppose GM crops are anti-development.
- **Government Policies:** The government must handle the problem of HT crops in a clear and forceful manner, with a focus on caution, given the overwhelming political and technical consensus. Rather, there seems to be a push towards GM mustard with a heedless disdain for both the law and science.
- **Misleading the Court:** The government has recently argued that GM mustard should not be called HT at all since the goal of producing it was to boost yields in order to circumvent the mounting evidence of long-term ecological and health dangers of HT crops. The government's defense is nothing more than a red herring that may have been used to mislead the Supreme Court.

### Conclusion

The government has been requested by the Committee on Science and Technology, Environment, and Forests to carry out an exhaustive, impartial, and open evaluation of GM Crops. Constitutional concerns regarding public health, environmental conservation, and agricultural livelihoods should be taken seriously by the government. Other HT crops like cotton, rice, and maize would probably be released if the Supreme Court approves the release of GM mustard.

**Nut Graf:** A determined struggle before the Supreme Court of India by environmentalists against Delhi University's genetically modified (GM) herbicide-tolerant (HT) mustard is all that lies between GM food and Indian farmers and consumers.

## 24. In AI's unlimited potential, the benefits and the risks

**Syllabus:** Awareness in the fields of IT, Space, Computers, Robotics, Nano-technology, Bio-technology and issues relating to Intellectual Property Rights.

**Prelims:** World Environment Situation Room, ChatGPT

**Mains:** Applications of AI, Impact of AI on Economy

### Context:

Artificial intelligence is radically transforming education, industry and research. Some of the applications are listed below:

- **Biochemistry:** Google's DeepMind has released the structure of 200 million proteins. This has assisted the **Drugs for Neglected Diseases initiative (DNDi)** in building treatments for **Chagas disease** and **Leishmaniasis**. This is possible by quick screening of thousands of molecules by AI.
- **Robotics:** Robots can read research papers and make the compounds described in it. They can rapidly screen thousands of molecules or processes for specific functions and develop strategies for optimal production.
- **Environment and Climate Change:** The United Nations Environment Programme's (UNEP) World Environment Situation Room (WESR) collects and analyzes real-time data from thousands of sensors around the world to **predict carbon dioxide concentrations, glacier mass, sea level rise, biodiversity loss, and more**.
- **Arts:** Large language models (LLMs) like ChatGPT can create text, music, and art.
- **Learning:** AI can be an important aid in helping with visualization, communication, and compiling known facts for those with learning disabilities.

### Issues:

- **Intellectual Property:** The use of AI in generating scientific knowledge has implications on ownership of new discoveries. For example, will the knowledge produced by AI tools be covered under the Intellectual property laws?
- **Errors:** Scientists warn that AI products must be used with caution, as they may often miss profound insights central to articles leading to faulty conclusions.
- **Bias:** Existing biases in the scientific world can get entrenched in the AI tools leading to under representation of minority views and prevalence of stereotypes.
- **Deep Fakes:** AI generated images and videos are already being utilized for disinformation and political targeting.
- **Socio-economic:** Mostly societies with surplus resources have been using AI due to the infrastructure costs associated with it. This could lead to concentration of wealth, increased inequality and digital divide between the rich and the poor.

**Way Forward:**

- Government Policy which highlights the **AI governing principles** for institutions, industry is needed for responsible AI development.
- AI can be an important aid in helping authors with visualization, communication, and compiling known facts, but it must be used judiciously.
- For democratization of AI, infrastructure and resources to access it must be ensured.

**Nut Graf:** Artificial intelligence (AI) is rapidly transforming education, industry, and research. AI is being used to screen molecules for new drugs, develop robots that can read research papers, and predict climate change. However, there are also some challenges associated with AI, such as intellectual property rights, bias, and deep fakes.

**25. Bedaquiline & Drug-resistant TB**

**Syllabus:** General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology and biotechnology; Issues relating to intellectual property rights.

**Mains:** Issues related to health, Importance of research and development in addressing public health challenges.

**Prelims:** About intellectual property rights, Bedaquiline & Drug-resistant TB

**Context:**

Johnson & Johnson's patent on bedaquiline, a vital drug for drug-resistant tuberculosis (DR-TB) treatment, expired, allowing generic manufacturers to supply it.

**Bedaquiline's Role in Treating Drug-Resistant Tuberculosis (DR-TB)**

- **Johnson & Johnson's (J&J) Patent Expiry:** On July 18, the patent for bedaquiline, a key drug in DR-TB treatment, expired, opening opportunities for generic manufacturers.
- **J&J's Attempts to Maintain Monopoly:** J&J filed secondary patents in 66 low- and middle-income countries until 2027, including high TB burden nations, hindering generic competition.
- **The Deal with Global Drug Facility (GDF):** A unique agreement between J&J and GDF could improve access to the drug, potentially reducing prices significantly.

**The Global Threat of Tuberculosis**

- **TB's Deadly Impact:** Before COVID-19, tuberculosis was the world's deadliest infectious disease, with millions developing drug-resistant or drug-sensitive TB each year.
- **Public Health Emergency in India:** India faces a significant TB burden, with the highest number of patients globally.
- **DR-TB and Antimicrobial Resistance:** DR-TB contributes to antimicrobial resistance and poses ongoing public health challenges.

**Bedaquiline's Origin and Ownership**

- **Bedaquiline Development:** Janssen Pharmaceutical (a J&J subsidiary) developed bedaquiline with support from public and philanthropic organisations in clinical trials.
- **WHO Recommendation:** WHO recommends bedaquiline as a core drug for DR-TB treatment, based on collective research efforts.
- **J&J's Claims and Patenting Strategies:** Despite collaborative contributions, J&J seeks sole ownership of the drug through aggressive patenting.

**Availability in India and Patent Challenge**

- **Price Reduction Expectations:** Like other drugs with generic competition, bedaquiline's prices are expected to decrease significantly in India.
- **Landmark Patent Rejection:** Due to a legal challenge by patient groups and TB survivors, J&J's secondary patent was rejected, allowing Indian manufacturers to supply affordable generic versions.

**Nut Graf:** The expiration of bedaquiline's patent has the potential to improve DR-TB treatment access through generic versions. J&J's secondary patents in some countries raise concerns about maintaining a monopoly over the drug. India's rejection of J&J's secondary patent allows affordable generic supply in the country.

**26. PSLV-C56**

**Syllabus:** GS 3- Science and Technology

**Prelims:** Recent developments and their applications in the field of space technology.

**PSLV-C56 Launch Date and Configuration**

- ISRO plans to launch PSLV-C56 carrying Singapore's DSSAR satellite and six other satellites on July 30 from Sriharikota.
- PSLV-C56 is configured in its core-alone mode, similar to PSLV-C55.
- The launch of PSLV-C56 carrying the DS-SAR satellite and other payloads represents a significant step in advancing satellite technology and strengthening international space collaborations.

**DSSAR Satellite and its Purpose**

- The DSSAR satellite will be launched into a near-equatorial orbit.
- The satellite, developed through collaboration between DSTA (representing the Government of Singapore) and ST Engineering, will serve the satellite imagery needs of different agencies within Singapore's government.

**Advanced Imaging Capabilities of DS-SAR**

- DS-SAR carries a Synthetic Aperture Radar developed by Israel Aerospace Industries.
- It offers all-weather day and night coverage and can image at 1m resolution with full polarimetry, providing high-quality imaging capabilities.

**Other Satellites on Board**

- **Atmospheric Coupling and Dynamics Explorer (ARCADE):** An experimental satellite.
- **Galassia-2:** A 3U nanosatellite to be orbiting at low earth orbit.
- **ORB-12 STRIDER:** A satellite developed under international collaboration.
- **NuLloN by NuSpace:** An advanced 3U nanosatellite enabling seamless IoT connectivity in both urban and remote locations.
- **VELOX-AM:** A technology demonstration microsatellite.
- **SCOOB-II:** A 3U nanosatellite with a technology demonstrator payload.

**27. New clue to FRBs, mysterious radio flashes from space**

**Syllabus:** GS 3- Science and Technology

**Prelims:** Recent developments and their applications in the field of space technology.

**Introduction**

- Fast Radio Bursts (FRBs) are fleeting flurries of radio waves from faraway galaxies, emitting vast energy in milliseconds.
- Despite being the brightest radio bursts known, their transient nature makes them challenging to study.

**What We Know About FRBs**

- FRBs are enigmatic celestial electromagnetic impulses, possibly originating from dying stars.
- They can be 'one-off' phenomena or repeaters, flashing intermittently like ghostly lighthouses.

**Astronomers' Study on Repeating FRB (FRB 20190520B)**

- An international team studied a repeating FRB using the Green Bank Telescope and Parkes Observatory.
- They found a highly variable Faraday rotation measure indicating magnetic field strength, reversing direction twice.
- The magnetic reversal indicates that the source of the FRB is in orbit around a binary star system, possibly accompanied by a massive star or black hole.

**Implications of the Findings**

- Similarities with a binary system in the Milky Way strengthen the idea of FRBs being in binary systems.
- Long-term monitoring of FRBs is essential for further understanding their nature and local conditions.

**Role of Radio Telescopes**

- Radio telescopes are crucial tools for observing FRBs, as their long wavelengths can traverse intergalactic space without interruption.
- Modern radio telescopes offer precise localization of FRBs, aiding observations in other wavelengths.

**Significance of Radio Astronomy**

- Karl Jansky's accidental discovery of radio waves from the Milky Way's centre paved the way for radio astronomy.
- Radio telescopes have led to advancements in studying various intergalactic phenomena, including FRBs.

### The Quest for Cosmic Understanding

- Radio telescopes help determine the distance and source of FRBs, contributing to unravelling cosmic mysteries.
- Astronomers continuously seek to better understand the vast universe, which remains largely unknown.

## 28. Semicon India 2023

**Syllabus:** Indigenisation of technology

**Prelims:** Semicon India 2023

**Mains:** Significance of promoting Semiconductor fab units, opportunities for India and the efforts undertaken by the government.

### Context

- The second "Semicon India" is being held in Gandhinagar.
- It is being organised by India Semiconductor Mission in partnership with industry and industry associations. By Ministry of Electronics and Information Technology.
- AIM: make India a global hub for Semiconductor Design, Manufacturing and Technology Development which will help propel the vision of India Semiconductor Mission.
- In this event Vedanta group chairman Anil Agarwal said that the first phase of its semiconductor project will involve \$5 billion investment of the overall \$20-billion outlay, and the venture will be ready with made-in-India chip in two and a half years.

### About Semiconductors

- A semiconductor material has an electrical conductivity value falling between that of a conductor, such as copper, and an insulator, such as glass. Their resistance decreases as their temperature increases, which is behavior opposite to that of a metal.
- Can be made of pure elements like silicon or germanium or compounds like gallium arsenide or cadmium selenide.
- Used to make semiconductor chips used in things ranging from a mobile phone to an aircraft.
- The World recently saw an extensive shortage of these chips due to: High Demand, Supply chain Constraints due to the Pandemic.
- Recently China has also come up with a policy to limit export of materials needed for their manufacture.

### Semicon India Program

- Launched December 2021.
- **Outlay:** Rs.76000 Crore
- For the development of semiconductors and display manufacturing ecosystem in India.
- Modified in September 2022
- Fiscal Incentive of 50 percent of the project cost is available to companies/consortia/ joint ventures for setting up of Semiconductor Fabs in India
- Fiscal incentive of 50 percent of the project cost is available for setting up of Display Fabs of specified technologies in India.

### India Semiconductor Mission

- Setup as an Independent Business Division within Digital India Corporation.
- Responsibility of catalysing the India Semiconductor ecosystem in manufacturing, packaging and design.
- Has an advisory board consisting of some of the leading global experts in the field of semiconductors.
- Working as nodal agency for the Schemes approved under Semicon India Programme.

**Nut Graf:** The 'Semicon India 2023' highlights investment opportunities in India's semiconductor sector. Our PM said the fourth industrial revolution currently underway was being driven by India's aspirations.

## 29. Threat of dengue fever escalates globally

**Syllabus:** Science and Technology- developments and their applications and effects in everyday life

**Prelims:** Dengue Virus, vaccines

**Context:** The recent surge in dengue cases globally, including in new regions has been alarming and poses significant global health challenges. The World Health Organization (WHO) forecasts the possibility of record-level cases this year due to global warming favouring disease-transmitting mosquitoes

### About dengue:

- Highly prevalent infectious disease (400mn people per year-WHO)
- Virus: Dengue Virus (DENV); RNA virus of the Flaviviridae family with four serotypes (DENV-1 to 4).
- Vector: Aedes Aegypti (also spreads Chikungunya, Zika, Mayaro, Yellow Fever)



### Details about the 2023 Outbreaks

- Since the beginning of 2023, several regions in America have witnessed significant dengue outbreaks, reporting over two million cases till July, with Brazil, Peru, and Bolivia having recorded the highest number of cases this year.
- Several countries in the Americas have reported a co-circulation of all four DENV serotypes.
- The European Centre for Disease Prevention and Control (ECDC) has warned of an increase in DENV infections across the region. In 2022, Europe saw a significant rise in locally acquired dengue cases.
- Reason: Changing climatic conditions in Europe, such as increased heat waves, floods, and prolonged hot summers, have created favorable environments for dengue-causing mosquito species.
- July 2023: outbreak of dengue fever reported in Egypt's Qena province after several positive cases.
- Sudan recorded its first-ever dengue case in February, even though it is not considered endemic in the Middle East due to unfavorable climate conditions.
- While the Middle East has experienced some outbreaks, they have been relatively small in scale compared to countries in Asia.

### Situation In India

- Dengue cases have soared in India, mostly due to heavy rains and inadequate control measures.
- States like Kerala, Odisha, Assam, Tamil Nadu, Maharashtra, West Bengal, and Karnataka are reporting large numbers of dengue cases.

### Preventive Measures?

- While public health measures are being implemented to control the spread of the disease, individual awareness and responsibility play a crucial role.
- Vaccination.
- Continued research and collaboration, including genomic surveillance of the virus, are essential to understanding the evolution and adaptation of the virus.

### Dengue vaccines

- The reason why dengue vaccines are so difficult to manufacture is that they need to be effective on all 4 strains.
- As of now, only 2 dengue vaccines have been approved for usage.
  - Dengvaxia: French company Sanofi. Only for those people who have had Dengue previously, or those who live in an area where the majority population has been previously infected. In people who have never had the infection, this vaccine can increase the risk of severe dengue.
  - Qdenga: Japanese company Takeda, it can be used by people who have not had an infection history.
- India's first and only DNA Vaccine candidate for dengue has shown promising results in its preliminary trials. This vaccine is being developed by the National Centre for Biological Sciences, Bangalore.

**Conclusion:** We need to focus on Developing effective strategies to combat dengue and other mosquito-borne diseases and safeguard global health and well-being.

**Nut Graf:** Continued research and collaboration, including genomic surveillance of the virus, are essential to understanding the evolution and adaptation of the virus.

## 30. Are human challenge studies effective?

**Syllabus:** Advances in science and technology and Ethics

**Mains:** Importance of Bio-ethics in Human Challenge Studies

### Context

- The Bio-ethics committee of ICMR has posted the consensus statement for the ethical conduct of controlled human infection studies (CHIS), also known as human challenge studies, in India.

### Details:

- Bio-ethics committee is an advisory unit of ICMR.
- Undertakes ethical review of the policies, reports, and other documents, and encourages institutes across India to improve communication and build capacity regarding the same.
- Also collaborates with national and international institutes and agencies for promotion of ethics in medicine.

### Human Challenge Studies

- Human beings are exposed to diseases to learn more about them.
- Not a new phenomenon globally, but never formally done in India before.
- Conducted to understand the various facets of infectious microbes and the diseases or conditions caused by such pathogens.

### Need in India?

- Disease burden and mortality due to infectious diseases is high in India (30%).
- Help in providing better insight into multiple aspects of even well-studied pathogens, infection, transmission, disease pathogenesis, and prevention.
- Will help supplement traditional clinical studies and speed up the process of finding safe and effective interventions in the form of drugs and/or vaccines.
- Many infectious diseases endemic to developing world, and resistance to existing drugs is increasing.

### Difference between traditional and challenge studies

- **Fundamental difference:** Nature of Exposure to pathogens.
- **Traditional trials:** participants are strongly advised to adopt and adhere to safety measures to avoid getting infected and infection is left to chance
- **Challenge study:** Participants deliberately exposed to disease-causing pathogens
- Traditional clinical trials are undertaken to study the safety and efficacy of drugs and vaccines, whereas human challenge studies are carried out to understand the various facets of infection and disease pathogenesis besides selecting the best candidate drug or vaccine.
- While the adverse effects of the candidate drugs or vaccines are not known in both the studies (safety is evaluated for the first time in humans during the phase-1 stage of a traditional trial), volunteers in a human challenge trial face an additional risk when deliberately exposed to the pathogen.
- Human challenge studies are often undertaken to study “less deadly diseases” such as influenza, dengue, typhoid, cholera, and malaria, unlike in traditional clinical studies.

### Any safeguards followed?

- Except in very rare cases, as in the SARS-CoV-2 virus that causes COVID-19, the infectious agents that are tested in human challenge studies are well-known and studied. To reduce harm to the participants, a weaker or less virulent form of the pathogen is used.
- Availability of Rescue Remedy is an important requirement to prevent the disease from progressing to its severe form.

### The Challenging Ethics

- Participants are deliberately exposed, so risks are high. Therefore they need to be properly informed of these risks. (CHALLENGE 1)
- ICMR statement allows only healthy individuals in the 18-45 years age bracket.
- Participants with pre-existing medical conditions are to be excluded but very often people are unaware of many medical conditions. This makes it essential to carry out detailed medical examinations of the participants before enrolment. (CHALLENGE 2)
- According to the consensus statement, information on payment for participation should be mentioned in the consent form but the exact amount of payment for participation is to be revealed: “only after the volunteer has consented to participate”. Money cannot be used to entice people. (Was done for covaxine trials in Bhopal) (CHALLENGE 3)
- Important to have a rescue remedy (CHALLENGE 4)
- It remains to be seen how “informed” will be the informed consent, especially when the pathogen is studied in specific age groups such as children or disadvantaged groups, given the riskier nature of human challenge trials and the compulsion to get people enrolled in the new research methodology. (CHALLENGE 5)

### Conclusion:

Human Challenge Studies will be successful and helpful to humans only when Participants are fully aware of the risk and have full awareness about it.

**Nut Graf:** Ethics will play an important role in the success of Human Challenge Studies and would lead to inclusive growth.

## 31. Hurdles to overcome before becoming 'Digital India'

**Syllabus:** Achievements of Indians in science & technology; indigenization of technology and developing new technology.

**Mains:** Challenges associated with becoming Digital India

### Background

- In recent years, India's digital payment system has evolved dramatically. There is a QR code scanner at every neighborhood kirana store right now.
- The amount and number of transactions in this mode have increased since the UPI's launch in 2016.
- Demonetisation in 2016 and the COVID-19 lockdown in 2020 were significant driving forces towards the broad adoption of digital payments, as has been well-documented.

**Quick Facts**

- In 2014, 53% of people had bank accounts, but by 2017 and 2021, 80% of people had bank accounts, according to the World Bank Global Findex Survey.
- UPI payments climbed at an average monthly rate of 6% from June 2021 to April 2023.
- For NEFT, IMPS, and debit card payments, the comparable percentages were 3%, 3%, and 1.5%, respectively.
- This shows that UPI's popularity grew more quickly than that of all other payment methods.

**Digital India-Financial Inclusion**

- It makes sense that the growing use of UPI-based payments would contribute significantly to greater financial inclusion.
- A bank account is necessary as the first step towards financial inclusion. In comparison to all the other nations in the database, India has the largest percentage of inactive accounts worldwide.
- The push for Jan Dhan accounts may have had this effect. Accounts with no balance were created in order to reach set goals but have since been abandoned.

**Conclusion**

- While there is no variation in the ownership of bank accounts across urban and rural areas or between income groups, there are disparities when we look at the percentage of inactive accounts.
- Although the value and number of digital transactions have increased, this rise has not been uniform. The gender difference in digital transactions is very noticeable.
- India once more stands out in comparison to nations like Bangladesh and Kenya when it comes to the rural-urban divide in digital payments.
- India has made great progress, but there is still a long way to go before it can truly be called "Digital India."

**Nut Graf:** India's performance is miserable when compared to that of other emerging nations, despite the fact that digital transactions have significantly expanded.

# DEFENCE AND INTERNAL SECURITY

## 1. Akira Ransomware

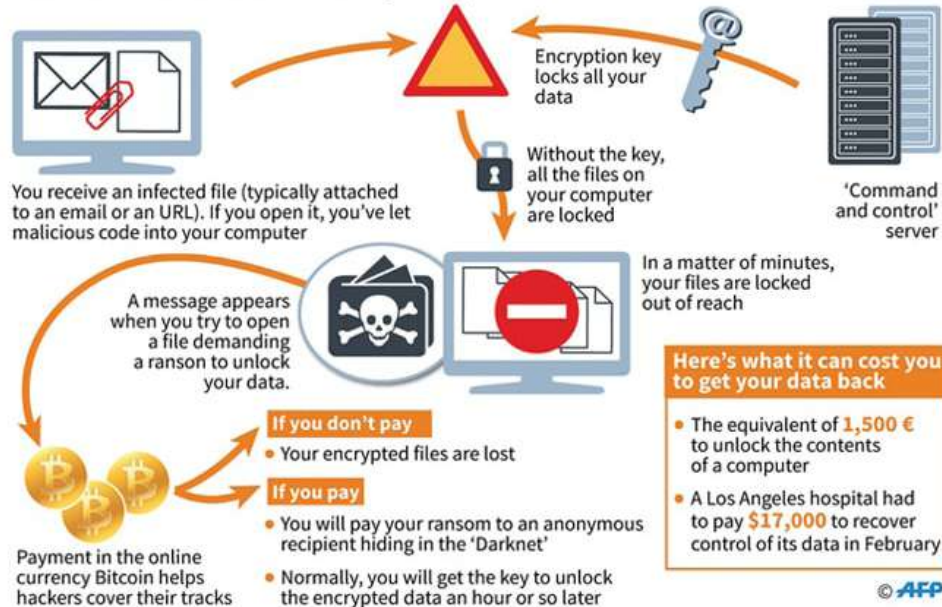
**Syllabus:** Cyber Security- Data security.

**Prelims:** Akira Ransomware

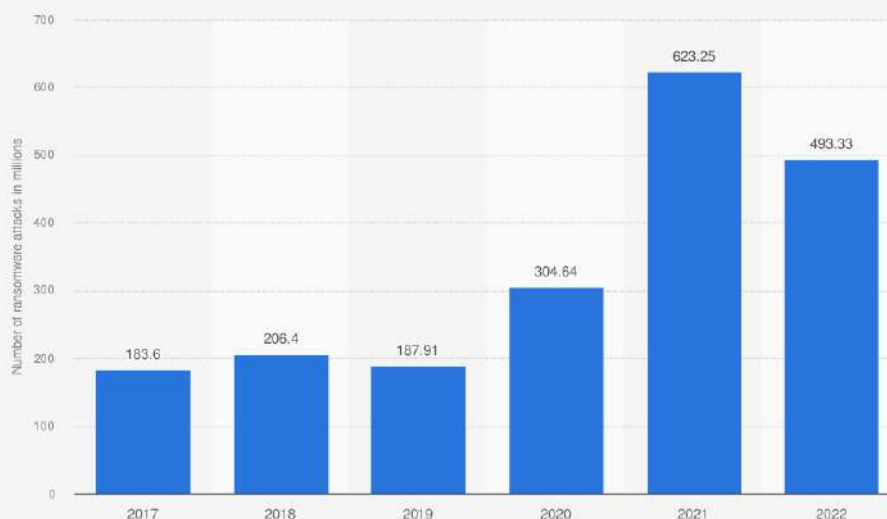
**Context:** Computer Emergency Response Team - India (CERT-In) has warned about a new cybersecurity threat – Akira Ransomware.

### Ransomware: how hackers take your data hostage

Malicious code blocks access to the data in your computer

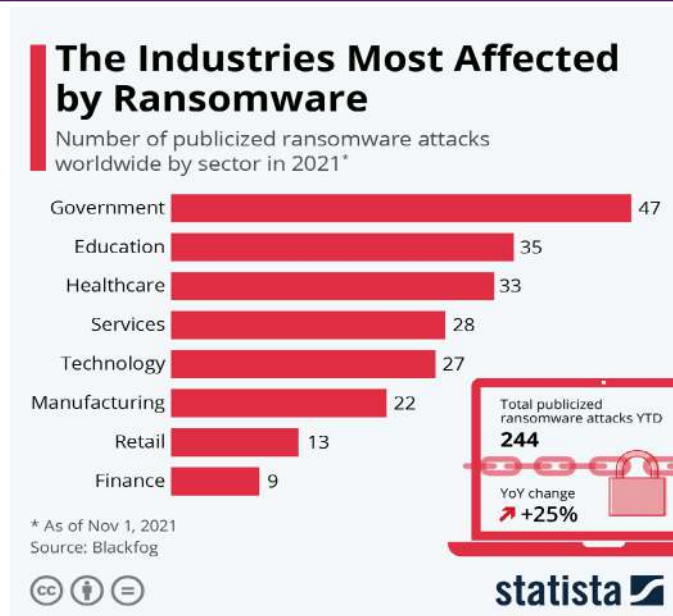


Annual number of ransomware attacks worldwide from 2017 to 2022 (in millions)



Source  
SonicWall  
© Statista 2023

Additional Information:  
Worldwide; SonicWall; 2017 to 2022; data is based on SonicWall Capture Labs characteristics; wider industry metrics may



#### Akira Ransomware

- It is a threat to Windows and Linux-based PC's.
- Akira uses a double extortion tactic, which is becoming increasingly common among cybercriminals.
- Not only is the data encrypted, making it inaccessible to the victims, but it's also threatened to be released publicly on the dark web if the ransom isn't paid.

Akira ransomware can enter computers through various means such as malicious email attachments or links, pirated software websites, peer-to-peer (P2P) networks, free file hosting sites, and third-party downloaders.

Cybercriminals may also use fake software updates and Trojans to deliver the malware to unsuspecting users. Once a user unwittingly downloads and executes the malicious file, Akira encrypts files found in various hard drive folders.

#### Here's how to safeguard yourself against ransomware:

- Never respond to emails or messages from unknown people. Never ever click URLs sent from unknown people. Be careful even if it is sent by a colleague or loved one. Study the message and also make sure the website link as 'https'. If it has just 'http', don't go ahead.
- Never download and install apps or anti-virus apps from third-party store or any unknown websites. If you have never a company that is trying to sell you a anti-virus app, don't install it. Try investing time to do research on the company and if possible ask any tech-savvy person and only then go ahead.
- Always update your system whenever the computer/mobile-maker sends the OS update or security patch
- Always ensure the sensitive information are backed-up and store in different device or in a secured cloud storage service account
- System admins at companies have to enforce strict security policies among the employees to have very strong passwords and enable multi-factor validation system
- Also, system admins at corporate companies should perform regular mock drill and also train employees on best and latest practices on how to safeguard themselves online

## 2. SoO Agreement

**Syllabus:** Challenges to Internal Security Through Communication Networks

**Prelims:** Implications of Internet Shutdowns, Suspension of Operations agreement.

**Context:** In March, Manipur state government withdrew the Suspension of Operations agreement. Now the Home Minister has ensured that the SoO is back in operation.

#### What is SoO?

- Signed on 22nd August, 2008 between 25 (of 30) Kuki insurgent groups (17 of Kuki National Organisation (KNO) and 8 of United People's Front (UPF)), Government of India and Manipur state government (tripartite).
- The insurgent groups after the signing reduced their demand from a separate state to a Kuki Territorial Council.
- Valid for an year and can be extended.
- Joint Monitoring Group



## Terms of SoO

- Security forces, including state and central forces, and the underground groups are not to launch any operations.
- UPF and KNO to abide by the country's constitution, the laws of the state, and respect Manipur's territorial integrity.
- Cadres of militants to be restricted to defined, government identified camps.
- Their arms to be kept double locked, and can be used only to guard & protect the camps and their leaders.
- Rehabilitation package

## BYJU'S IAS Website

## Daily Updates

-  **Comprehensive news analysis**
-  **Video analysis of "The Hindu"**
-  **PIB summary and analysis**
-  **Topic of the day**  
A brief analysis of important topics for the exam
-  **This day in history**  
A brief note on a major event that happened in the history of India and the world on this date
-  **AIR Spotlight**
-  **Sansad TV Perspective**

## Weekly Updates

-  **Economy this week**  
Round-up of business newspapers
-  **Gist of economic and political weekly magazine**
-  **International Relations This Week**
-  **GK and current affairs quiz**

## Monthly Updates

-  **BYJU'S current affairs magazine**  
Compilation of current affairs
-  **Gist of magazines**  
Extracts of articles and points from "YOJANA" and "KURUKSHETRA"

# ENVIRONMENT AND ECOLOGY

## 1. Global Gibbon Network

**Syllabus:** General issues on Environmental Ecology, Biodiversity and Climate Change

**Prelims:** Biodiversity and Species in News

**Context:**

- The conservation status of India's sole ape species, the hoolock gibbon, has become a pressing global concern.

**Global Gibbon Network (GGN):**

- The Global Gibbon Network (GGN) recently convened its inaugural meeting in Haikou, China's Hainan province, shedding light on the critical situation faced by these primates.
- Global Gibbon Network was initiated at the International Gibbon Day 2020 event, representatives from 20 gibbon conservation organizations came together for the first time to discuss gibbon conservation.
- India is a Founding member

**Goals of the Global Gibbon Network**

- To conserve gibbons and their habitats
- To raise awareness of gibbons and their plight
- To promote research on gibbons

**Activities of the Global Gibbon Network:**

- Provides a forum for gibbon conservation organizations to share information and collaborate on projects
- Organizes workshops and trainings on gibbon conservation
- Supports research on gibbons
- Advocates for gibbon conservation with governments and other stakeholders

**What are the Key Facts about Hoolock Gibbon?**



- Gibbons, known as the smallest and fastest of all apes, inhabit tropical and subtropical forests in Southeast Asia.
- They have high intelligence, distinct personalities, and strong family bonds similar to other apes.
- They represent one of the 20 gibbon species found worldwide.
- **Population and Habitat:**
  - The current population of hoolock gibbons is estimated to be around 12,000 individuals.
  - They are found in forested areas of Northeast India, Bangladesh, Myanmar and Southern China.
- **Gibbon Species in India:**
  - Two distinct hoolock gibbon species are found in India's northeastern region: the eastern hoolock gibbon (*Hoolock leuconedys*) and the western hoolock gibbon (*Hoolock hoolock*).
  - A recent study by the Centre for Cellular and Molecular Biology (CCMB) in Hyderabad analyzed the genetics of these gibbons.
  - The study revealed that there is actually only one species of gibbon in India, debunking the previous belief of separate eastern and western species based on coat color.
  - The genetic analysis showed that the populations previously thought to be eastern and western hoolock gibbons diverged approximately 1.48 million years ago.
  - The study also estimated that gibbons diverged from a common ancestor around 8.38 million years ago.

### ● Threats:

- All 20 gibbon species, including hoolock gibbons, are at a high risk of extinction due to conservation challenges.
- Gibbon populations and their habitats have significantly declined over the past century, leaving small populations restricted to tropical rainforests.
- In India, the primary threat to hoolock gibbons is the loss of their natural habitat caused by deforestation for infrastructure projects.

### ● Conservation Status:

- International Union for Conservation of Nature's Red List:
- Western Hoolock Gibbon: Endangered
- Eastern Hoolock Gibbon: Vulnerable.
- Also, both the species are listed on Schedule 1 of the Indian (Wildlife) Protection Act 1972.

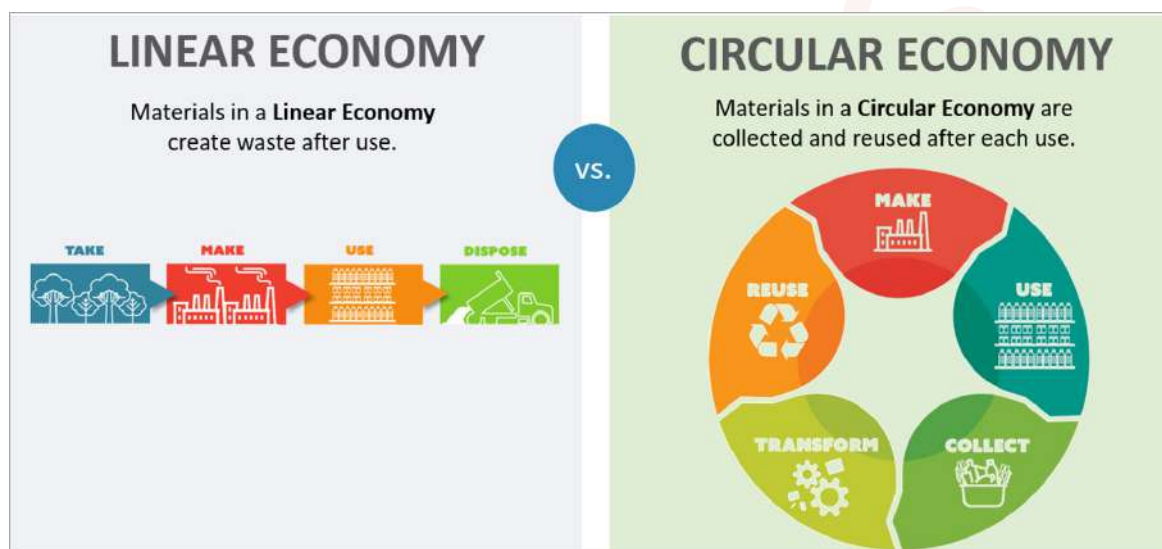
## 2. Take-Make-Dispose Model

**Syllabus:** General issues on Environmental Ecology, Biodiversity and Climate Change

**Prelims:** Reduce-Reuse-Recycle' Model

**Context:** India has recognised the need to switch from the 'Take-Make-Dispose' to 'Reduce-Reuse-Recycle' Model.

- India has prioritized 'Resource Efficiency and Circular Economy' as one of the three core themes for deliberations in the G-20 forum.



### Resource Efficiency & Circular Economy

- Resource efficiency and circular economy are powerful strategies that can effectively minimise dependence on natural resources, curtail waste and encourage sustainable design practices.
- In the collective global endeavour to ensure sustainable development and realise the Sustainable Development Goals, decoupling resource utilisation from economic growth is going to be the key.

India has embraced four priority areas for the circular economy during its G-20 presidency: circularity in the steel sector; Extended Producer Responsibility (EPR); circular bioeconomy and establishing an industry-led resource efficiency and circular economy industry coalition. There is now heightened recognition of resource efficiency and circular economy strategies within the G-20 community.

### Background

- India has emphasized "Resource Efficiency and Circular Economy" as one of the three main subjects for discussion in the G-20 summit because it recognises the need to move away from the "take-make-dispose" model and move towards the "reduce-reuse-recycle" approach.
- **During its G-20 presidency, India has embraced four key sectors of the circular economy:**
  - The steel industry,
  - Extended producer responsibility (EPR),
  - The circular bioeconomy,
  - Creation of an industry-led coalition for resource efficiency and the circular economy.
- Resource efficiency and circular economy initiatives are now more widely acknowledged within the G-20 community.

## G20 and Significant Elements of Circular Economy

### ● Focus on the Circular Steel Sector

- The majority of G-20 members have committed to net zero goals and are reducing greenhouse gas emissions.
- An important tactic for reducing emissions from the steel sector is the transition to a circular steel industry. The secret is to make sure that the G-20 members work together to share knowledge, develop technology, and transfer technology.
- The importance of the EPR framework in integrating circularity throughout the value chain is being highlighted during India's G-20 chairmanship.

### ● Circular bioeconomy

- EPR implementation that is effective is critical in promoting the growth of the recycling infrastructure and building a streamlined waste collection system.
- India has also published detailed regulations for managing battery and e-waste.
- Since a lot of it is burned, causing pollution, biodiversity loss, and global warming, biowaste, such as urban and industrial waste and agricultural residue, has become a problem on a global scale.
- Biowaste can act as valuable primary raw materials and workable mineral resource alternatives when combined with crops appropriate for degraded sites.
- Utilizing a circular bioeconomy strategy will lessen the demand for virgin resource extraction and offer a practical waste disposal option.

### ● Industry coalition

- India has envisioned an industry coalition in these sectors because industries are essential in improving resource efficiency and circular economy practices.
- Additionally, the alliance will work to improve technological cooperation, develop cutting-edge capabilities across industries, mobilize de-risked capital, and support proactive private sector participation.

## Measures taken by Indian Government

- The Indian government has been promoting the use of biofuels. The establishment of second-generation (2G) ethanol projects is supported financially by the Pradhan Mantri JI-VAN Yojana for integrated bio-ethanol projects.
- The Government of India introduced the Galvanising Organic Bio-Agro Resources (GOBAR) Dhan initiative to transform animal manure and other organic waste into compost, biogas, and biofuels to support sustainable agriculture and lessen pollution.
- Compressed biogas (CBG) is a substitute green transportation fuel that is being promoted through the Sustainable Alternative Towards Affordable Transportation (SATAT) Scheme. This plan has benefited the bioenergy industry by hastening the construction of the CBG production, storage, and distribution infrastructure.

## Conclusion

- Global forums like the G-20 are crucial for proposing answers to pressing problems and addressing them in a collaborative manner.
- Resource efficiency and the circular economy have become important strategies in our collective fight against the three major planetary problems.
- The G-20 presidency of India has placed a lot of emphasis on these strategies because they present promising avenues for a future that is more robust and sustainable.

**Nut Graf:** India's G-20 presidency has concentrated on adopting resource efficiency and shifting to a circular economy in response to the growing need for a "reduce-reuse-recycle" paradigm.

## 3. Bald Eagle and Hasarius Mumbai

**Syllabus:** General issues on Environmental Ecology, Biodiversity and Climate Change

**Prelims:** Bald Eagle and Hasarius Mumbai

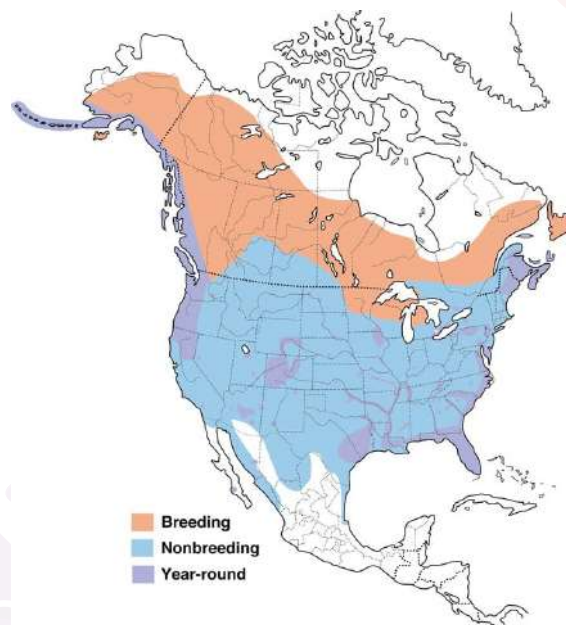
**Context:** 4th July is American Independence Day, and the bald eagle is their national bird since 1782.

### Bald Eagle: Back from the Brink of Extinction

- In 18th century abundant population.
- Decline started in 1800s and continued for a long time.
- **Main causes:** Hunting and poaching; DDT



- **1940:** Bald and Golden Eagle Protection Act
- **1972:** DDT use banned
- **1973:** Endangered Species Act was enacted
- Captive Breeding started in 1970s
- **2007:** removed from endangered to threatened category
- **2021 report (US Fish and Wildlife Service):** Their population has grown 4 times since 2009.
- **IUCN Status:** Least Concern
- **Natural Range:** Parts of North America (USA, Canada and Mexico)
- Females are slightly larger in size than males.



#### Hasarius mumbai

- New specie of jumping spider (Salticidae family) found in Goregaon, Mumbai.
- Stalk and pounce on their prey instead of using their webs to trap them.
- Jumping spiders were first discovered in 1826.
- Found in warm climates.
- Apart from Hasarius mumbai, India has only 2 other Hasarius species: H. adansonii (found all over India esp urban areas) and H. kjellerupi (Nicobar islands)

#### 4. Deep sea mining

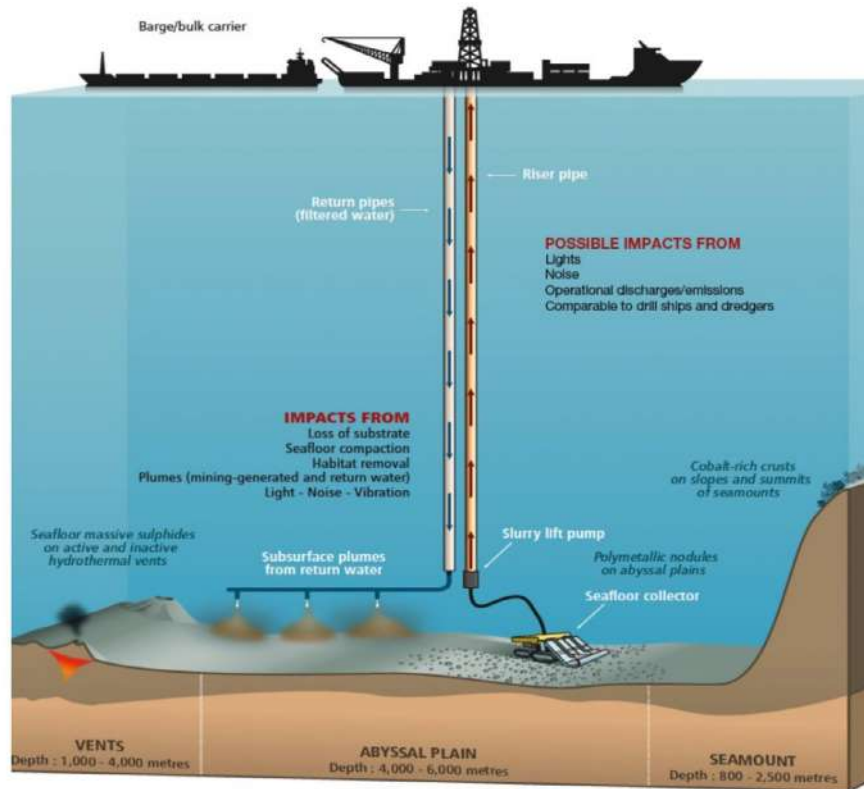
**Syllabus:** General issues on Environmental Ecology, Biodiversity and Climate Change

**Mains:** Deep sea mining

**Context:** Deep sea mining involves removing mineral deposits and metals from the ocean's seabed. There are three types of such mining: taking deposit-rich polymetallic nodules off the ocean floor, mining massive seafloor sulphide deposits and stripping cobalt crusts from rock.

The ISA's Legal and Technical Commission, which oversees the development of deep sea mining regulations, will meet in early July to discuss the yet-to-be mining code draft.





Potential impacts from deep-sea mining. Photo by IUCN (adapted from Secretariat of the Pacific Community).

### Regulation

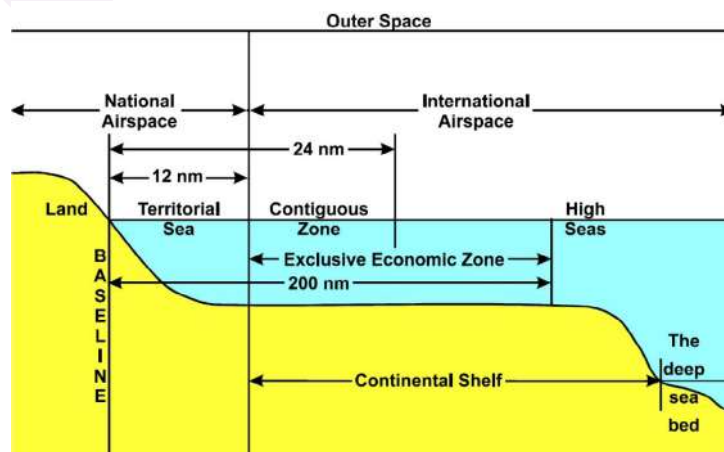
- Countries manage their own maritime territory and exclusive economic zones, while the high seas and the international ocean floor are governed by the United Nations Convention on the Law of the Seas (UNCLOS).
- Under the treaty, the seabed and its mineral resources are considered the “common heritage of mankind” that must be managed in a way that protects the interests of humanity through the sharing of economic benefits, support for marine scientific research, and protecting marine environments.

### International Seabed Authority:

- Autonomous organization within the United Nations common system, with headquarters located in Kingston, Jamaica.
- The Authority is one of the three international institutions established by UNCLOS;
- The other two are the Commission on the Limits of the Continental Shelf and the International Tribunal for the Law of the Sea

### UNCLOS

- United Nations Convention on the Law of the Sea (UNCLOS) 1982, also known as Law of the Sea divides marine areas into five main zones namely- Internal Waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ) and the High Seas.



## 5. Green Credit Programme

**Syllabus:** General issues on Environmental Ecology, Biodiversity and Climate Change

**Mains:** Green Credit Programme

**Context:** It was first announced in the 2023-24 Union Budget with an aim to leverage a competitive market-based approach and incentivize voluntary environmental actions of various stakeholders.

- The Indian Council of Forestry Research and Education (ICFRE) shall be the administrator of the programme which will develop guidelines, processes and procedures for implementation of the programme.

### Purpose

"Create a market based mechanism for providing incentives in the form of Green Credits to individuals, Farmer Producer Organisations, cooperatives, forestry enterprises, sustainable agriculture enterprises, Urban and Rural Local Bodies, private sectors, industries and organisations for environment positive actions."

- Green Credit Activities:
- Tree plantation-based green credit,
- water-based green credit,
- sustainable agriculture-based green credit,
- waste management-based green credit,
- air pollution reduction-based green credit,
- mangrove conservation and restoration-based green credit,
- ecomark-based green credit,
- sustainable building and infrastructure-based green credit.

### Tradeable instruments

- Green Credit Programme is also expected "to encourage private sector industries and companies as well as other entities to meet their existing obligations, stemming from other legal frameworks, by taking actions which are able to converge with activities relevant for generating or buying Green Credits"

### Challenges and way forward

- Greenwashing
- Tax evasion and laundering

## 6. 2023 - Year of International Water Commitments

**Syllabus:** General issues on Environmental Ecology, Biodiversity and Climate Change

**Prelims:** 2023 - Year of International Water Commitments

**Context:** The increasing pressure on natural resources, particularly land and water poses several challenges to the global food system and its sustainability. Water management will be one of the significant factors in the years to come to ensure water security and achieve SDGs.

**The year 2023 is an important year nationally and internationally for the water-related goals of the world.**

- 2017, the United Nations adopted a resolution declaring 2018 – 2028 as the International Decade for Action on Water for Sustainable Development. The year 2023 is the mid-year of the decade for action on water and also for SDGs.
- The IPCC Sixth Assessment Report, IPCC Report 2021, highlights that the water cycle is more sensitive to global warming, causing an increase in droughts, floods and cyclones with a one-degree temperature rise. These issues impact nearly 40% of the global population.
- As per the United Nations Office for Disaster Risk Reduction estimates in 2019, India suffered losses of Rs 5.61 lakh cr. due to extreme climate events in the past two decades.
- As per the report by the Council on Energy, Environment and Water (CEEW) in 2021, more than 75% of India's districts are extreme event hotspots, and more than 80% of India's population resides in districts highly vulnerable to extreme hydromet disasters like droughts, floods and cyclones.
- Water scarcity, water quality degradation, infrastructure damage and increased spread of waterborne diseases are some of the consequences of climate change.

### Water Matters for Rural India

- 53% of districts in India are rural (Census 2011), out of which 37% are vulnerable to the impacts of extreme hydromet disasters. Thus, it is important to ensure water security in rural areas to mitigate the impacts of droughts, floods and cyclones.
- Agriculture and WASH (water, sanitation and hygiene) are the two sectors where the demand for water is highest. Agriculture accounts for a larger share of water demand (almost 80%), however, WASH is also important from the perspective of public health.

### Major International Commitments and Outcomes

- G20 (Group of Twenty)
- Under India's G20 Presidency, a dedicated global water dialogue is being held as a part of the Environment and Climate Sustainability Working Group (ECSWG). It focuses on achieving sustainable water resources management in alignment with SDG-6 by 2030.
- During the second G20 ECSWG meeting, the Ministry of Jal Shakti emphasised the importance of climate-sensitive development for ensuring water security, while highlighting India's two flagship missions – Jal Jeevan Mission and Swachh Bharat Mission.
- The intended outcomes of these dialogues include –
- Universal access to safe drinking water and sanitation services.
- Groundwater management involves local stakeholders in groundwater recharge and its efficient use.
- Climate resilient water infrastructure with improved disaster risk reduction.

### United Nations Water Conference (UNWC)

- The UNWC, 2023 was co-hosted by Tajikistan and Netherlands in March 2023 at UN Headquarters in New York.
- The main outcome of the conference is a document on voluntary and non-binding commitments to accelerate progress to meet the global water and sanitation-related goals and targets in the second half of the Water Action Decade and 2030 Agenda. About 700 commitments were made towards a water-secure world.
- India under the action agenda has allocated USD 50 billion to provide safe and adequate drinking water to all rural households by 2024, which is much before 2030.

### Conference of Parties (COP):

- The COP is an annual meeting organised by the UNFCCC (United Nations Framework Convention on Climate Change) where countries come together and discuss and address climate change issues.
- The Water Action Track was launched at COP25 in 2019 to increase action on climate change adaptation and mitigation, with a particular focus on SDG 6.
- At COP26, the Water Pavilion was established which provided a platform for stakeholders to share knowledge and experiences on water management in the face of climate change.
- In 2022, water and sanitation were also introduced for the first time in agendas

## 7. India adds 664 animal species to its faunal database in 2022, 339 taxa to its flora

**Syllabus:** General issues on Environmental Ecology, Biodiversity and Climate Change – that do not require subject specialisation

### Prelims: Biodiversity and Species in News

- Union Minister for Environment, Forest and Climate Change released two reports which highlight the new discoveries and records in India's Flora and Fauna.
- The Zoological Survey of India (ZSI) compiled the report "**Animal Discoveries – New Species and New Records 2023**", while the Botanical Survey of India (BSI) has published the report "**Plant Discoveries 2022**".
- **List of the New Species:**
  - **Miniopterus phillipsi**, a long-fingered bat, and **Glischropus meghalayanus**, a bamboo dwelling bat from Meghalaya.
  - **Sela macaque** (*Macaca selai*), a new macaque species discovered in Arunachal Pradesh and named after the Sela Pass.
  - Two new species, **Macaca leucogenys**, a white-cheeked macaque and **Ficedula zanthopygia**, a yellow-rumped flycatcher, were sighted in India in 2022, one in Arunachal Pradesh and the other in the Andaman archipelago.
  - Two new plant genera, **Nandadevia Pusalkar** and **Nilgiriella Pusalkar**, were discovered in India. The former was found in the **outer valleys of Uttarakhand Himalayas**, the latter is **endemic to the southern Western Ghats**.
  - Orchid species *Calanthe lamellosa* (earlier recorded in China and Myanmar) was found in the Japfu mountain range in Nagaland.
- In 2022, the maximum new discoveries were recorded from **Kerala followed by Karnataka and Tamil Nadu**.
- The director of ZSI, said that 2022 saw the highest number of new discoveries in the last 10 years.
- In the report, '**Plant Discoveries 2022**', about 21% of the discoveries were made from the Western Himalayas followed by 16% from the Western Ghats.

## 8. A stocktake before the Global Stocktake

**Syllabus:** Environment: Conservation, environmental pollution and degradation, environmental impact assessment, disaster management.

**Prelims:** Awareness of international environmental agreements and conferences

**Mains:** Climate change-related issues, global efforts to combat climate change

### Context:

The Bonn Climate Change Conference marked an important milestone in climate negotiations before the Global Stocktake under the Paris Agreement. The conference addressed key issues such as mitigation pathways, climate finance, and just transition pathways.

### Introduction

- The Bonn Climate Change Conference served as a significant milestone in climate negotiations before the first Global Stocktake under the Paris Agreement.
- The Global Stocktake is mandated to assess collective progress towards long-term global climate goals, including greenhouse gas reduction, resilience building, and securing finance.

### Mitigation Pathways and Climate Finance

- Mitigation pathways compatible with the temperature goal and climate finance flows were points of contention between developing countries and the Environmental Integrity Group.
- Developing countries were urged to be more ambitious in emission reduction, while developed countries emphasised the need for adequate finance to support developing nations.

### Just Transition Pathways

- Climate change negotiators reached a compromise on “just transition pathways” during the conference.
- India’s climate policy emphasised the need for financing a “just transition” in sectors like energy and transport to achieve net-zero emissions by 2070.
- Just transition pathways aim to ensure a fair and inclusive transformation towards low-carbon development.

### Aligned with Paris Agreement Principles

- The adoption of just transition pathways aligns with the Paris Agreement’s self-differentiation principle.
- Developing countries were able to strengthen just transition pathways, while developed countries focused more on mitigation efforts.
- Just transition also respects soft obligations from the UN Sustainable Development Goals and the ILO’s guidelines on just transition.

### Mobilising Climate Finance

- Climate finance flows are not aligned with countries’ identified priorities in their nationally determined contributions.
- The \$100 billion annual climate finance goal has not been fully realized, and adaptation finance lags behind mitigation finance.
- The Environmental Integrity Group suggested that the Mitigation Work Programme should contribute to financing, deviating from major international public finance transfers.

### Integrating the World Bank and Ensuring Equity

- Efforts to align climate finance with the Paris Agreement’s temperature goals require integrating the World Bank in climate change negotiations and holding it accountable for investments in fossil fuels.
- The pursuit of the Global Stocktake should comply with principles of equity, justice, and fairness.

**Nut Graf:** The Bonn Climate Change Conference highlighted the need for developing countries to be more ambitious in emission reduction while emphasising the importance of adequate finance from developed nations. The conference also focused on the adoption of “just transition pathways” and the alignment of climate finance with the Paris Agreement’s goals. The upcoming Global Stocktake will provide guidance for countries to enhance their climate actions.

## 9. What are the provisions of the High Seas Treaty

**Syllabus:** Environment- Conservation, Environmental pollution and degradation

**Mains:** Important International institutions and treaties for the conservation of the nature and natural resources

**Prelims:** High Seas Treaty

**Context:**

The UN recently adopted the Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ) or High Seas Treaty to protect marine life beyond national jurisdiction.

**Introduction:**

- The UN has adopted the Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ) or the High Seas Treaty.
- 
- This treaty, the third agreement under UNCLOS, aims to protect marine life in oceans beyond national jurisdiction through international cooperation.

**Process and Background:**

- The idea of protecting the marine environment emerged in 2002, leading to the formation of a Preparatory Committee in 2015.
- After five prolonged intergovernmental conferences (IGC) and negotiations, the treaty was adopted in 2023.
- The objective is to implement international regulations addressing issues like rising sea surface temperatures, overexploitation of marine biodiversity, overfishing, coastal pollution, and unsustainable practices.

**Key Elements of the Treaty:**

**1. Marine Protected Areas:**

- Establishing marine protected areas (MPAs) through a “three-quarterly majority vote” to protect oceans from human activities.
- Prevents one or two parties from blocking decisions, ensuring effective implementation.

**2. Fair Sharing of Benefits from Marine Genetic Resources:**

- Mandates sharing scientific information and monetary benefits through a “clear house mechanism.”
- Enhances transparency, cooperation, and open access to information on MPAs, marine genetic resources, and area-based management tools.

**Capacity Building and Marine Technology:**

- The Scientific and Technical Body plays a significant role in environmental impact assessment.
- Develops standards and guidelines for assessment procedures, assists countries with less capacity, and identifies research priorities.

**Challenges in the Negotiation Process:**

- The most contentious issue was the sharing and exchange of information on marine genetic resources.
- Prolonged negotiations were due to the absence of a provision for monitoring information sharing.

**Nut Graf:** The High Seas Treaty aims to address environmental challenges such as overfishing and pollution, establish marine protected areas, ensure fair sharing of benefits, and enhance capacity building, marking a crucial step towards international cooperation for the conservation of marine biodiversity.

## 10. In Varanasi, turtles help clean the Ganga

**Syllabus:** Environment- Conservation, Environmental pollution and degradation

**Mains:** Environmental pollution and degradation, Conservation. Issues related to conservation, sustainability, and initiatives for environmental protection.

**Prelims:** Environmental ecology, Biodiversity, Climate Change topics and conservation efforts.

**Context:**

Since 2014, the Namami Gange Programme has been working to clean and rejuvenate the Ganga river network, and marine life, particularly turtles, has played a crucial role. The Wildlife Institute of India (WII) and the Ministry of Forest, in collaboration with the National Mission for Clean Ganga, have been running a turtle breeding and rehabilitation centre in Varanasi, Uttar Pradesh, since 2017.



**Introduction:**

- The Namami Gange Programme aims to clean the Ganga river network and rejuvenate it.
- Turtles, both herbivorous and carnivorous, have been playing a crucial role in this initiative.
- The Wildlife Institute of India (WII) and the Ministry of Forest, in collaboration with the National Mission for Clean Ganga (NMCG), established a turtle breeding and rehabilitation centre in Varanasi in 2017.

**Turtle Rehabilitation Centre:**

- The centre releases turtles into the river to support the Namami Gange Programme.
- Approximately 5,000 turtles have been released since 2017, and another 1,000 will be released this year to strengthen the program.
- The centre has released over 40,000 turtles into the river since its establishment in the late 1980s under the Ganga Action Plan.
- The Namami Gange Programme brought renewed attention to the centre in 2014.

**Turtle Breeding Process:**

- The Forest and Wildlife Department collects turtle eggs from coastal areas in the Chambal region.
- The eggs are monitored for 70 days and placed in a specially adapted room for hatching.
- The eggs are buried in sand-filled wooden boxes, with each box containing 30 eggs.
- Hatching occurs between June and July at temperatures ranging from 27 to 30 degrees Celsius.
- The turtles are then monitored in an artificial pond for two years before being released into the river.

**Turtles' Role in Water Quality Improvement:**

- Turtles contribute to cleaning the river by consuming meat and waste products.
- River water quality checks have shown improvements in biochemical oxygen demand (BOD), fecal coliform (FC), and dissolved oxygen (DO) levels.
- pH assessments have indicated suitable water quality for bathing.
- Improved DO, BOD, and FC levels have been observed at various locations along the river.

**Long-Term Impact and Future Assessments:**

- The long-term impact of turtle species on the river's cleanliness will be evaluated over 10-15 years.
- Microbial analysis will be conducted to determine the effectiveness of the turtles' role.
- Ongoing efforts will continue to assess and monitor the impact of the turtle rehabilitation program on the Ganga river network.

**Nut Graf:** Under the Namami Gange Programme, the turtle breeding and rehabilitation centre in Varanasi has released thousands of turtles into the Ganga river to aid in its cleanup efforts. The turtles, which feed on organic waste and help improve water quality, are nurtured at the centre before being released. Their role in the long-term ecological health of the river will be assessed through ongoing monitoring and analysis.

## 11. Coral Bleaching

**Syllabus:** GS 3- Environment

**Prelims:** Conservation, Environmental pollution and degradation.

**Introduction:**

- Record temperatures worldwide have led to severe consequences for various species, including corals. Corals are highly vulnerable to bleaching when the surrounding water becomes too warm.

**Understanding Bleaching:**

- Bleaching occurs when corals lose their vibrant colors and turn white, indicating a change in the surrounding water conditions.
- The loss of colour provides a visible indicator that the corals are under stress.

**Role of Zooxanthellae:**

- Most corals have a symbiotic relationship with algae called zooxanthellae.
- Zooxanthellae provide corals with colours and receive essential nutrients, such as amino acids and sugars, in return.
- Changes in the ocean environment, such as temperature increase, acidification, or excessive brightness, can cause zooxanthellae to leave the coral.

**Consequences of Stress:**

- As zooxanthellae leave the coral, the coral gradually fades and appears bleached.
- If the coral remains stressed, it may not recover and could eventually die.
- Other stressors for corals include low tides, water pollution, and ecosystem changes caused by the climate crisis.

**Survival and Recovery:**

- Bleaching events are not always fatal for coral colonies.
- Some colonies have shown resilience and survived bleaching events.
- For example, a coral colony near Japan's Iriomote Island experienced bleaching in 2016 but exhibited signs of recovery by 2020.

**Conclusion:**

- Rising temperatures pose a significant threat to corals worldwide, leading to bleaching events and potential long-term damage to coral reefs.
- Understanding the factors contributing to bleaching, such as the departure of zooxanthellae, can help researchers and conservationists develop strategies to protect and restore coral ecosystems.

**12. Captive bred vultures take wing in forest expanses**

**Syllabus:** Conservation, Environmental Pollution and Degradation

**Prelims:** Oriental White-backed Vultures, IUCN, Vulture Conservation Centers

**Mains:** Success of Vulture reintroduction program, Action Plan for Vulture Conservation in India: 2020-2025

**Success of soft release of vultures:**

- Eight Oriental White-backed Vultures were released into the wild in 2020 from Pinjore.
- Five of the vultures have survived, and two have successfully nested in the wild.
- Birds released in 2021 are also doing well and are able to find their own food. 29 of the 31 birds released in 2021 are still alive.
- One of the vultures fitted with tracking devices flew into Nepal and re-entered India. This vulture was released from the **Rajabhatkhawa vulture center** (part of the Buxa Tiger Reserve, West Bengal).

**Why is conservation of vultures necessary?**

- The birds have been under threat of extinction since the 1990s due to the use of non-steroidal anti-inflammatory drugs (NSAIDs) such as diclofenac in cattle which these vultures feed on.
- According to a study by the **Bombay Natural History Society (BNHS)**, the estimated population of vultures in India in 1993 was around 40 million. However, the population of three species – Oriental White-backed, Long-billed, and Slender-billed – has declined by over 97% since the 1990s.
- **Conservation Status:**
  - According to the International Union for the Conservation of Nature (IUCN), the oriental white-backed, long-billed, and slender-billed species are considered **critically endangered**.
  - **Schedule I** of the Wildlife Protection Act, 1972, which grants them the highest level of protection.
- **The BNHS and Royal Society for Protection of Birds (RSPB) have been managing four Jatayu conservation breeding centers across the country in partnership with state governments.** Through this conservation breeding program, over 700 birds have been bred in captivity since 2004.

**Way Forward:**

- The success of the release and nesting of the vultures has inspired conservationists to establish soft release centers in Madhya Pradesh, Assam, Rajasthan, and three tiger reserves in Maharashtra.
- The Drugs Technical Advisory Board (DTAB) has recently recommended a ban on the use, sale, and manufacture of veterinary drugs **aceclofenac** and **ketoprofen** for animal use, which will help in vulture protection.
- Actions to achieve as part of the **Action Plan for Vulture Conservation in India: 2020-2025**
- Prevention of poisoning of cattle carcasses, the principal food of vultures
  - Enhancement of Conservation Breeding Programme in the country
  - Regular monitoring of vultures across the country
  - Enhancing the vulture safe zone network by creating at least one vulture safe zone in each state and continuing to work on the existing efforts of vulture safe zones.
  - Determining and preventing other causes of mortality in vultures

**Nut Graf:** Soft release of vultures has been successful in India. Eight vultures released in 2020 have survived, and two have nested in the wild. Birds released in 2021 are also doing well. This is a major step in the conservation of vultures, which have been under threat of extinction since the 1990s.

### 13. Climate targets are becoming outdated

**Syllabus:** GS 3- Environment

**Prelims:** Environmental conservation, Environmental impact assessment, Disaster Management.

**Context:**

The article discusses the 1.5 degrees Celsius warming target and its impact on climate projections, urging for realistic assessments and a focus on decarbonization.

**Introduction**

- The Paris Agreement's 1.5 degrees Celsius warming target and its implications on climate projections raise questions about the feasibility and accuracy of such goals.
- Understanding the challenges and opportunities in addressing climate change is crucial for effective policymaking.

**The Questionable Target:**

- The 2 degrees Celsius target in the Paris Agreement lacks scientific basis and was a political choice.
- Demands to lower the target to 1.5 degrees Celsius highlight its aspirational nature.
- Scientific and socioeconomic communities adjusted projections to meet these targets, leading to uncertainties.

**Earth System Models (ESMs) and Projections:**

- Current ESMs have limitations in accurately reproducing consequences of 2°C warming on regional scales.
- Uncertainties in climate projections are dominated by ESM deficiencies in the near future.
- ESMs struggle to distinguish between worlds warmer by 1.5 and 2 degrees Celsius, impacting climate adaptation policies.

**Uncertainties for India:**

- Unforeseen socioeconomic and geopolitical events make accurate predictions challenging.
- India must develop its own tools to assess local climate impacts and plan for unavoidable consequences.
- Leadership role in demanding improved IPCC projections and continuous tracking of climate change's consequences.

**Paradigm Shift:**

- Reducing emissions alone has not succeeded; decarbonization of the system is crucial.
- India can leverage green technologies to grow the economy and achieve sustainable development goals.
- Consideration of non-market goods like equity, well-being, and biodiversity in climate policymaking.

### 14. The anatomy of the Yamuna floodplains

**Syllabus:** Conservation, Environmental pollution and degradation, and Environmental impact assessment

**Mains:** Causes and consequences of different types of pollution, role of human activities in exacerbating environmental degradation, and strategies for sustainable development and environmental conservation.

**Prelims:** About Floodplains and the impact of encroachment

**Context:**

The article explores the importance of the Yamuna River and the issues related to its floodplains, such as encroachments and the impact on communities and flood management.

**The Significance of Yamuna and its Floodplains**

- Yamuna was Delhi's lifeline and protected it from water scarcity and floods. Construction, urbanisation, and lax regulations have threatened the floodplains.
- Floodplains are integral to the river system, slowing water runoff, recharging groundwater, and storing excess water for non-monsoon seasons.

**Communities on the Floodplains**

- Floodplains house over 9,000 households with various livelihoods such as farming, daily wage work, and animal herding.
- Evictions and bans on agriculture have impacted communities, leading to a shift from farming to daily wage labour.

**Emergence of Settlements**

- Non-agricultural settlements emerged after independence, housing refugees and labourers from neighbouring states, contributing to rapid urbanisation.
- The floodplains were used for projects, impacting the ecosystem and restricting the river's expansion.

### Delhi's Master Plan and Encroachments

- Delhi's Master Plan designated the Yamuna floodplain as a protected area, but poor implementation allowed encroachments and construction.
- Building on recharge areas reduced groundwater and restricted the river's ability to carry floodwater.

### Impact of Encroachments on Flood Management

- Encroachments limit the river's width, causing devastating flash floods and affecting sediment transport and river rejuvenation.
- Climate change intensifies rainfall, leading to severe flooding and challenges in flood management.

### Addressing the Challenges

- Floodplain zoning, climate-resilient infrastructure, desilting drains, and improving drainage systems can help mitigate flood risks.
- Policymakers must prioritise preserving the river's ecosystem and avoid conflicts between development and nature.

**Nut Graf:** The article delves into the significance of the Yamuna River in Delhi and the challenges posed by encroachments on its floodplains. It highlights the impact on communities, flood management, and the need for climate-resilient measures to preserve the river's ecosystem.

## 15. The hornet's nest in the Forests Amendment Bill

**Syllabus:** Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

**Mains:** Provisions of Forest (Conservation) Amendment Bill, 2023 & debate of Conservation vs development & security

**Context:** The Forest (Conservation) Amendment Bill, 2023 raises concerns over narrowed forest definitions, exemptions, and impact on forest communities.

### Key Provision of the Forest Conservation Act of 1980:

- **Protectionist Approach:** The Forest Conservation Act of 1980 adopted a protective stance towards forests, emphasizing the need to conserve and manage forest resources effectively.
- **Forest Clearance Process:** The Act established a stringent forest clearance process for activities that involved the diversion of forest land for non-forest purposes, such as industrial projects, mining, and infrastructure development.
- **Centralized Control:** The Act vested the power of granting forest clearances primarily with the Central Government, ensuring uniformity and adherence to conservation principles across the country.
- **Compensatory Afforestation:** To offset the ecological impact of diverting forest land, the Act mandated compensatory afforestation, wherein an equivalent area of non-forest land had to be afforested or reforested.

### Provisions of the Forest (Conservation) Amendment Bill, 2023, and Challenges:

- The Amendment excludes fragile ecosystems near international borders from requiring forest clearances for security-related infrastructure development within 100 km.
- Globally recognized biodiversity hotspots like northeastern India and Himalayan forests and meadows could be affected.
- Exemptions introduced for construction projects like zoos, safari parks, and eco-tourism facilities.
- Bill grants unrestricted powers to the Union government to specify 'any desired use,' raising concerns about potential exploitation without proper scrutiny.
- No mention of other relevant forest laws like the Scheduled Tribes and Other Traditional Forest-dwellers (Recognition of Forest Rights) Act, 2006, leading to forest people's exclusion from consultations.

### Godavarman Judgment:

- The 1996 judgment expanded the Forest Conservation Act's scope to include areas with trees, even if not legally notified as forests.
- The Amendment restricts the Act to legally notified forests and those recorded after October 25, 1980.
- Potential impact on 28% of India's forest cover, approximately 2,00,000 square kilometres, including valuable Unclassed Forests in Nagaland.
- States may now allow the destruction of previously protected forests for construction and development.

### Conclusion:

- The Amendment diverges from the spirit of the original law, potentially facilitating forest destruction instead of conservation.
- Excluding important forest areas and fragile ecosystems may have negative environmental consequences.
- The participation of forest people should be encouraged rather than disenfranchised to achieve net zero carbon commitments and increase forest cover.
- Fast-tracking strategic and security projects is necessary, but blanket exemptions from regulatory laws are not the ideal solution.

- Proper geological and environmental assessments are crucial for development projects near ecologically sensitive areas like India's northern borders.
- Forests and natural ecosystems are indispensable and must be valued and protected for the well-being of society.

**Nut Graf:** *The Forest (Conservation) Amendment Bill, 2023, despite its promising Preamble, is causing concerns among environmental experts due to narrowed forest definitions, exclusions of fragile ecosystems, and exemptions for construction projects. The potential disenfranchisement of forest communities and lack of rectification for flawed forest clearance processes add to the worries.*

## 16. Mercury rising: Climate change calls for a renewed sense of urgency

**Syllabus:** GS-3, Climate change.

**Mains:** Rapid Climate change calls for urgent steps need to be taken

### Context:

- The earth had passed from a warming phase into an “era of global boiling” : United Nations Secretary-General, António Guterres
- Scientific evidence converging on the conclusion: July is set to be the hottest month in the last 12,000 years.
- Scientists from the World Meteorological Organization (WMO) and the European Commission's Copernicus Climate Change Service: July saw the hottest three-week period on record.
- Average July temperature so far has been 16.95° Celsius, 0.2° C warmer than in July 2019 — a record in the 174-year observational data of the European Union.

### Concerns

- With the change in Central Equatorial Pacific Ocean transitioning from La Niña conditions — where average sea surface temperatures are below normal — to El Niño conditions, the opposite, it was widely expected that temperatures would be warmer than that in the last three years.
- But the concern is the impact of this increased temperature in various regions of the world:
  - Temperature in northwest China touching 52° C
  - Wildfires in Greece
  - The baking heat in the United States' Southwest.
  - The extraordinarily high rains in north and western India, while largely due to prevailing monsoon conditions, were also due to the warm air increasing atmospheric capacity to hold moisture resulting in short torrential bursts, causing floods and devastation.

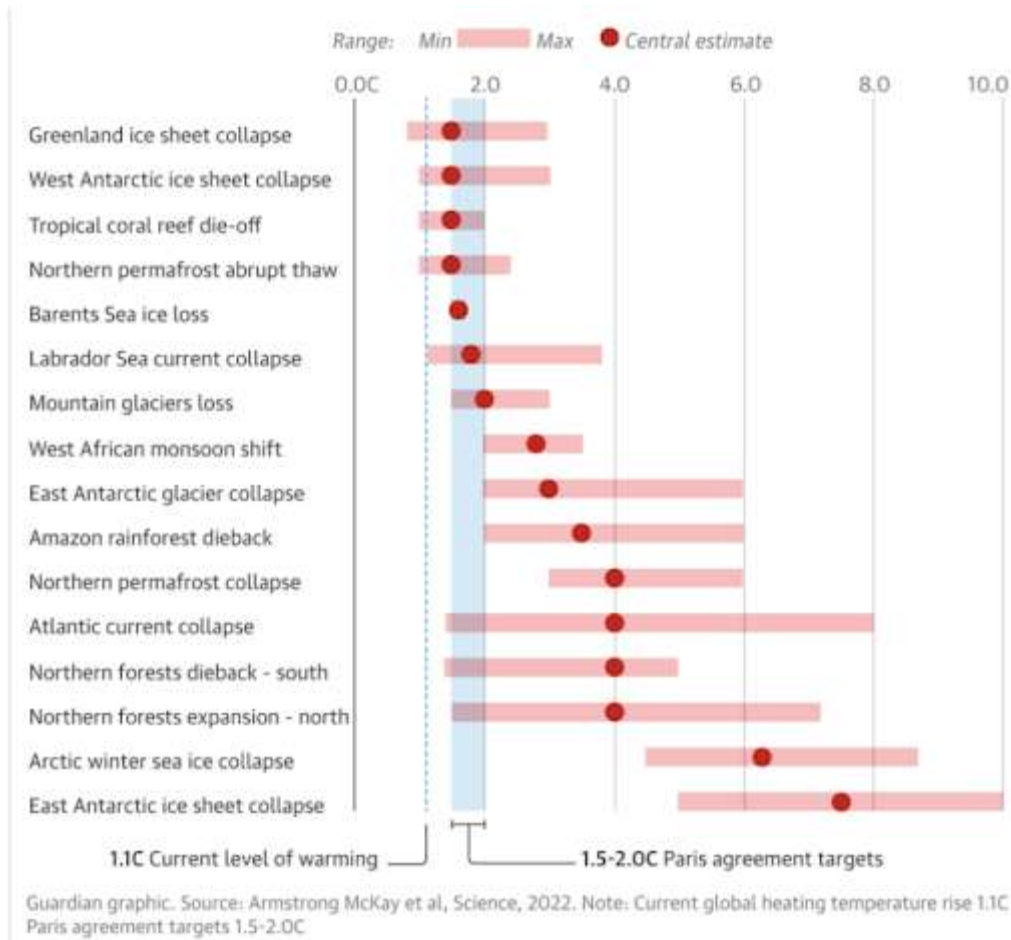
### Solution

- Limiting global temperature rise to 1.5 degree Celsius. Possible only through “dramatic, immediate climate action”.
- World's largest economies should target for more emission cuts.
- If India wishes to become the 3rd largest economy, we need to up our targets too: E.g. Net zero by 2050 instead of 2070; generating fossil-free electricity by 2040.

### Climate Tipping Points

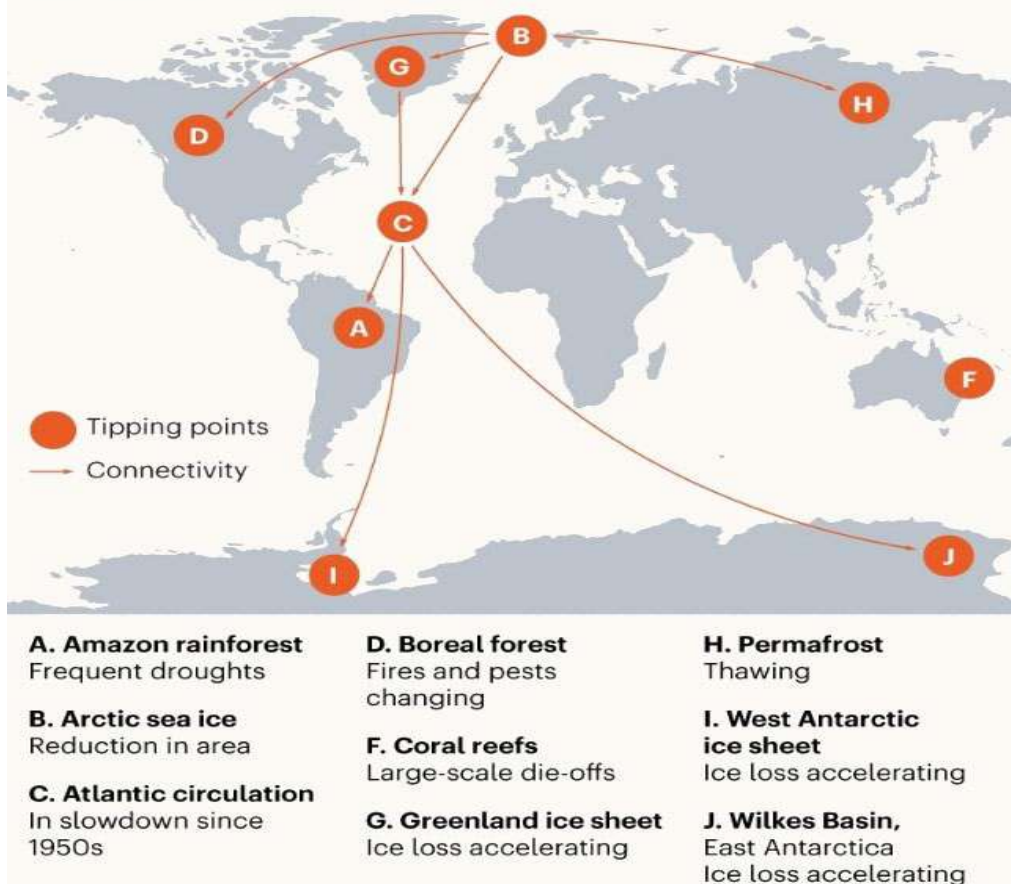
- A critical threshold that, when crossed, leads to large and often irreversible changes in the climate system.





## RAISING THE ALARM

Evidence that tipping points are under way has mounted in the past decade. Domino effects have also been proposed.




Source: The Guardian

**Gulf stream collapse?**

- The Gulf Stream is weakening, and it might collapse as soon as 2025, according to a study in Nature Communications. It is part of the Atlantic Meridional Overturning Circulation which, according to reports 5 years ago, is already at its weakest in the past 1600 years.
- Global warming is causing more and more influx of coldwater from Greenland into the Northern Atlantic Ocean, which is stifling the Gulf Stream, a warm ocean current.
- Global Impacts of the Collapse of AMOC and the Gulf Stream:
- It will alter the atmospheric Pressure patterns and the movement of Jet Streams, wreaking havoc with the rainfall patterns in west Africa, south America, and India. (This can cause famine as a majority of farmers in these regions are involved in Rainfed Agriculture. It can also parch the Amazonian Rain forests)
- Cooling down of Western Europe (Warm current: Gulf Stream-> North Atlantic Drift -> Norwegian Current) and intensification of storms in the region.
- Sea level rise on the Eastern Coast of North America due to water pile up (as the currents that carry the water away, would have been weakened.)
- The changes in atmospheric and oceanic circulations due to this might also cause the weakening of Antarctic ice sheets, further exacerbating the sea level rise.

**Nut Graf:** Climate change and increased temperature is impacting various regions of the world and this era of global boiling can be solved only by taking urgent measures.



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# HEALTH ISSUES

## 1. Irrevocable connection between anaemia and maternal health

**Syllabus:** GS 2- Health and Welfare

**Prelims:** Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

### Details

- Anaemia in India has gained attention with the proposal to remove an anaemia-related question from the National Family Health Survey (NFHS) and replace it with a more extensive Diet and Biomarker (DAB) survey.
- A study recommending lower haemoglobin norms for India has faced criticism from nutritionists and obstetricians and gynaecologists, highlighting the importance of well-informed policies.
- A multi-country study in The Lancet emphasised the need for informed anaemia measurement, handling, and interventions in India.

### Anaemia and Pregnancy

- Anaemia is closely linked to postpartum haemorrhage, a significant risk factor for maternal mortality.
- Over 500 million women worldwide of reproductive age suffer from anaemia, leading to approximately 70,000 postpartum haemorrhage deaths annually, mostly in low and middle-income countries.
- The WOMAN-2 trial collaborators conducted a study focusing on the relationship between anaemia and the risk of postpartum haemorrhage in women from Pakistan, Nigeria, Tanzania, and Zambia.

### Association between Anaemia and Postpartum Haemorrhage

- The study examined pre-birth haemoglobin as a continuous variable to assess the risk of postpartum haemorrhage.
- Lower haemoglobin levels were found to have a direct relationship with volume blood loss and clinical postpartum haemorrhage.
- Anaemia reduces blood's oxygen-carrying capacity, making women with anaemia more susceptible to shock and complications after minor blood loss.

### Recommendations and Insights

- Attention should be given to preventing and treating anaemia in women of reproductive age to reduce the risk of postpartum haemorrhage and its associated mortality.
- The Indian government's project to provide iron and folic acid supplements to adolescent girls is a step towards combating anaemia, but challenges remain in rural areas with suboptimal nutrition.
- Public health programmes must consider cultural and social realities when devising outreach strategies, as elaborate blood draws may not be feasible for a large population.

## 2. Understanding Leptospirosis

**Syllabus:** GS 2 – Health and Welfare

**Prelims:** Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

### Leptospirosis overview:

- It is an emerging infectious disease with the potential for large outbreaks after heavy rain or flooding.
- Prevalent in warm, humid countries, affecting an estimated 1.03 million people annually, causing 60,000 deaths.
- Urban poor population growth in tropical countries may increase the burden of the disease.
- **Disease Transmission and Risk Factors:**
  - Caused by the bacterium *Leptospira interrogans*, transmitted from infected animals to humans.
  - Wild and domestic animals, including rodents, cattle, pigs, and dogs, act as carriers.
  - Humans are at risk through direct or indirect contact with infected animal urine, especially in occupations involving animals or contaminated water.
- **Symptoms and Misdiagnosis:**
  - Leptospirosis symptoms range from a mild flu-like illness to a life-threatening systemic infection.
  - Misdiagnosed due to resemblance to dengue, malaria, and hepatitis symptoms.
  - Awareness, reliable diagnostics, and environmental surveillance challenges contribute to underestimating global and regional cases.
- **Misconceptions and 'One Health' Approach:**
  - The misconception of leptospirosis as "rat fever" overlooks multiple animal reservoirs.
  - The 'One Health' approach emphasizes interconnectedness between human, animal, plant, and environmental health.

- Preventive measures include personal protective equipment, maintaining sanitary animal-keeping conditions, and health education.
- **Prevention Strategies:**
  - Encourage health literacy and public health interventions targeting both human and animal populations.
  - Collaboration between public health professionals and animal husbandry departments.
  - Precautions during monsoons, such as washing arms and legs after handling animal waste or working in water.

### 3. Centre-mandated health spending has positive impact: study

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation.

**Mains:** Government initiatives in health sector

**Prelims:** About National Health Mission

**Context:**

The National Health Mission (NHM) in India has made significant strides in improving the health sector over 15 years, as revealed in a study.

**Positive Impact of NHM Measures**

- A study published in the “Public Health For All” journal highlights the positive impact of National Health Mission (NHM) measures over the past 15 years.
- NHM’s conditional funding to States, based on compliance with the Central government’s schemes, encourages investment in primary healthcare.

**Increased Allocation to Health Budgets**

- Researchers studied four States – Tamil Nadu, Kerala, Haryana, and Bihar – and found that they have slowly increased allocation to their health budgets.
- The target of 8% of the total State budget for healthcare, envisaged in the National Health Policy of 2017, is yet to be achieved, with States spending an estimated 5.2% in 2018-2019.

**Impact on Infant Mortality Rate (IMR)**

- NHM’s conditional allocation has contributed to a steady decline in India’s infant mortality rate, reflecting the effectiveness of the measures taken.
- Per capita public spending disparity among States has also reduced due to NHM’s efforts.

**Challenges in Health Departments**

- Despite positive impacts, health departments still face underspending of allocated funds.
- NHM is unlikely to withdraw conditions for contributions to States in the near future, considering its role in implementing Centrally-sponsored schemes.

**Towards Universal Health Coverage**

- States must develop concrete plans to strengthen primary healthcare delivery, in line with the NHM’s objective of achieving universal health coverage.
- The Centre’s recommendation to create a National Database of Health System Cost will help States in developing clear roadmaps.

**Realistic Cost Estimates for Healthcare**

- The way forward involves making realistic estimates of the cost of delivering primary, secondary, and tertiary healthcare.
- Arriving at a threshold level of cost per year of quality-adjusted life year (QALY) gained through primary healthcare interventions is crucial for effective planning.

**Nut Graf:** A study published in the “Public Health For All” journal highlights NHM’s positive impact, including reduced infant mortality rate and decreased spending disparities. However, challenges in underspending remain, urging States to focus on strengthening primary healthcare for universal health coverage.

# HISTORY

## 1. Dharma Chakra Pravartana Divas

**Syllabus:** GS-1; History, Buddhism

**Prelims:** Dharma Chakra Pravartana Divas

### Why in the news?

- International Buddhist Confederation celebrated the Dharma Chakra Pravartana Divas on Ashadha Purnima (Guru Purnima; 3rd July 2023).
- Marks the day when Buddha gave his first sermon, known as the Dhammachakkappavattana Sutta or “Setting in Motion the Wheel of Dharma.”

### About Dhmmachakkappavattana

- This sermon was delivered to his first five disciples at Deer Park in Sarnath, near Varanasi in present-day Uttar Pradesh, India.
- Here he expounded the Four Noble Truths and the Noble Eightfold Path.
- Importance: It is the first time that Buddha started sharing his teachings.
- Led to formal establishment of Sanghas (Buddhist community).

### Major Teachings of Buddha

#### 4 noble truths:

- Dukkha (Suffering): Recognize and understand that suffering is an inherent part of life. It refers to the dissatisfaction, pain, and impermanence experienced in various forms.
- Samudaya (Origin of Suffering): Understand that suffering arises from desire and attachment. Our cravings and attachments to things, people, and circumstances lead to suffering.
- Nirodha (Cessation of Suffering): Realize that it is possible to overcome suffering by letting go of desires and attachments. Attaining freedom from suffering is achievable.
- Magga (Path to the Cessation of Suffering): Follow the Noble Eightfold Path, which consists of ethical conduct, mental discipline, and wisdom, as a way to attain liberation from suffering.

### Major Teachings of Buddha

#### 8 Fold Path:

- Right View: Develop a correct understanding of the nature of reality and the Four Noble Truths.
- Right Intention: Cultivate intentions of goodwill, compassion, and renunciation, aligning them with the path to liberation.
- Right Speech: Practice truthful, kind, and helpful speech while avoiding harmful or deceptive speech.
- Right Action: Engage in ethical conduct, refraining from harming living beings, stealing, or engaging in unwholesome behaviors.
- Right Livelihood: Choose a livelihood that is honest, ethical, and does not cause harm to oneself or others.
- Right Effort: Make a sustained effort to cultivate positive qualities, overcome negative habits, and develop wholesome states of mind.
- Right Mindfulness: Develop mindful awareness of the body, feelings, thoughts, and phenomena as they arise in the present moment.
- Right Concentration: Cultivate focused and one-pointed concentration through meditation, leading to deep insight and liberation.

### International Buddhist Confederation

- Global umbrella body for Buddhist organizations and institutions
- Aims to promote and preserve the teachings and principles of Buddhism.
- Founded in 2012 in New Delhi, India.
- Welcomes membership from Buddhist organizations, institutions, and individuals from around the world. It is open to both monastic and lay Buddhist communities, representing diverse traditions and sects within Buddhism.
- Leadership structure: President, General Secretary, and an Executive Council comprising representatives from different Buddhist traditions and regions.
- Organizes the International Buddhist Conclave.



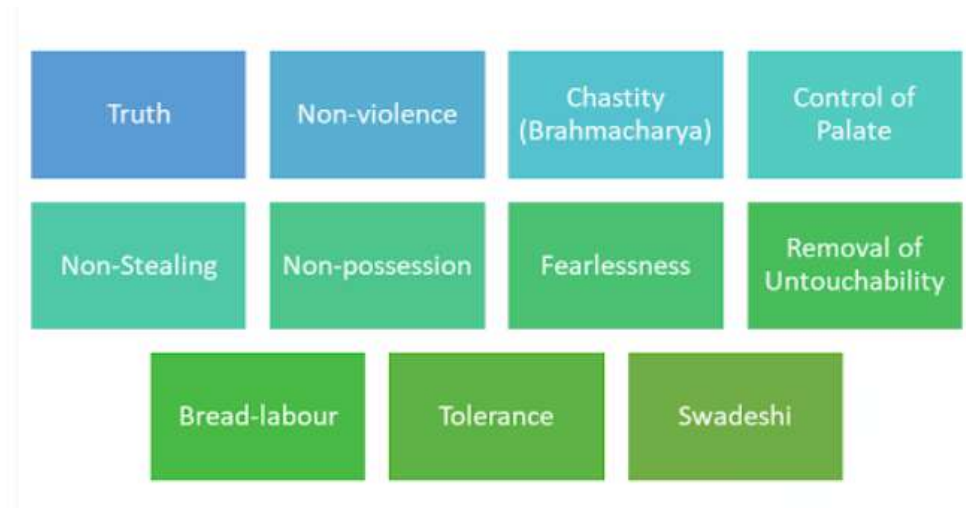
## 2. Non-Possession - Gandhian Thought

**Syllabus:** GS-1; History, Significant personalities

**Prelims:** Gandhian Thought

**Context:** While in Yerwada Central Prison in 1930, Gandhiji wrote weekly letters to the Satyagraha Ashram. The letters contained a cursory examination of the principal Ashram observances, popularly called Eleven vows

- The vows are signs of strength and cannot be practiced by the weak.
- Once promoted adequately, they can fetch foreign exchange earnings.
- It can give a competitive global advantage.
- It preserves India's rich culture and tradition.



- In the year 1928, Gandhi ji formulated rules for Ashram. They were:
- All ashramites should attend the morning prayers at 4 a.m.
- All should eat at the community kitchen.
- They should spin atleast 160 threads daily.
- No servants should be hired for household work.
- All adult men should engage in night vigilance.
- All young and adults should take turns cleaning toilets.
- All persons should work for atleast eight hours daily.
- One should maintain a daily diary and note all work done during the day.

### Conclusion:

The eleven vows mentioned earlier in the article are the best formula for living a simple and happy life. It is the best representation of 'Live and Let Others Live'.

# SOCIAL JUSTICE

## 1. World Investment Report

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** World Investment Report

**Context:**

- Recently, the United Nations Conference on Trade and Development (UNCTAD) published its World Investment Report 2023.

**The World Investment Report** focuses on trends in foreign direct investment (FDI) worldwide, at the regional and country levels and emerging measures to improve its contribution to development.

It also provides analysis on global value chains and the operations of multinational enterprises, with special attention to their development implications.

Overviews of the report are available in all official UN languages.

**Every issue of the Report has:**

- Analysis of the trends in FDI during the previous year, with especial emphasis on the development implications.
- Ranking of the largest transnational corporations in the world.
- In-depth analysis of a selected topic related to FDI.
- Policy analysis and recommendations.
- Statistical annex with data on FDI flows and stocks at the country level.

**Key findings:**

- India and ASEAN were the most buoyant recipients of the Foreign direct investment (FDI), with increases of 10 and 5%, respectively.
- FDI inflows were higher in developing countries compared with those in developed economies.
- China, the second largest FDI host country in the world, saw a 5% increase.
- FDI in the Gulf region declined, but the number of project announcements increased by two thirds.
- Inflows in many smaller developing countries were stagnant, and FDI to the least developed countries (LDCs) declined.
- Much of the growth in international investment in renewable energy has been concentrated in developed countries.
- The investment gap across all sectors of the Sustainable Development Goals has increased to more than \$4 trillion per year from \$2.5 trillion in 2015.
- The largest gaps are in energy, water and transport infrastructure.

**Key facts about the United Nations Conference on Trade and Development**

- It is a permanent **inter-governmental body** established by the United Nations General Assembly in 1964.
- It is responsible for dealing with development issues, particularly international trade.
- Framing policies in various domains such as trade, technology, finance, aid, and transport are the most important priorities of UNCTAD.
- The Conference ordinarily **meets once in four years**.
- The second UNCTAD Conference took place in New Delhi, India in 1968.
- **Members:** 195 countries
- **Headquarters:** Geneva, Switzerland
- **Reports published by the UNCTAD:** Trade and Development Report, The Least Developed Countries Report and Commodities and Development Report etc.

## 2. Global Peace Index

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** Global Peace Index

**Context:** It is released annually by the Institute for Economics and Peace (IEP).

### Details:

- 2023 Global Peace Index (GPI) ranked 163 independent states and territories according to their level of peacefulness. It measures the state of peace across three domains:
- Societal safety and security
- Ongoing domestic and international conflict
- Militarization

### Key Findings

- The average level of global peacefulness deteriorated by 0.42%.
- Iceland is the most peaceful country in the world – a title it has held since 2008.
- It is accompanied at the top by Denmark, Ireland, New Zealand, and Austria.
- Conversely, Afghanistan is the least peaceful country in the world for the eighth consecutive year. It is followed by Yemen, Syria, South Sudan, and the Democratic Republic of the Congo.
- India has occupied the 126th spot in the rankings, two higher than its previous position.
- The report stated that India experienced an improvement of 3.5% in overall peacefulness over the past year, owing to improvements in violent crime, neighbouring countries' relations, and political instability.
- Among other countries, Nepal, China, Sri Lanka, United States of America, and Pakistan, and have been ranked 79, 80, 107, 131, 146, respectively.

## 3. Universal basic income

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** Universal basic income

**Context:** The Rajasthan Minimum Guaranteed Income Bill, 2023, introduced by the Rajasthan government, aims to provide additional income support to people in the state. The Bill seeks to help citizens cope with inflation and improve their financial stability.

- The Bill has three broad categories: right to minimum guaranteed income, right to guaranteed employment, and right to guaranteed social security pension.



Source: Times of India

### What is UBI?

- A guaranteed income for all, regardless of employment status or income level
- Periodic, Individuals, Universal and Unconditional
- Universal basic income (UBI) is a socio-political financial transfer policy proposal in which all citizens of a given country receive a legally stipulated and equally set financial grant paid by the government.
- Could be funded through taxes, government borrowing, or a combination of both

### Benefits of UBI

- Reduces poverty
- Increases economic security
- Improves health and well-being
- Promotes entrepreneurship
- Frees up people to pursue their passions
- Cutdown other government schemes which will increase administrative efficiency

### Drawbacks of UBI

- Cost to Govt.
- Affect Fiscal prudence
- Potential disincentive to work
- Impact on the labor market
- Administrative challenges - Exclusion error and Leakages

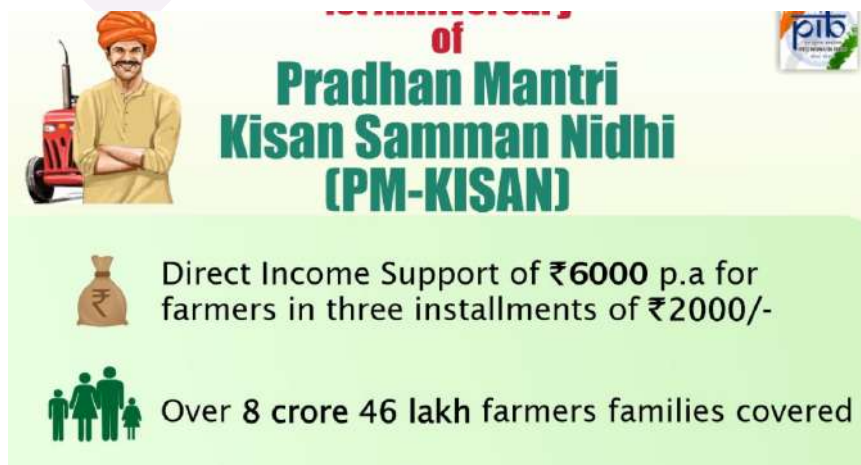
### UBI Status in India

## The Universal Basic Income debate

**CEA nixes the idea but more studies are needed to examine if a universal basic income incentivises working less**



- It should not be on the agenda over the near-term
- Creates “perverse incentives”
- Many Quasi-UBI schemes
- PM Kisan Samman Yojana
- Rythu Bandhu of Telangana
- KALIA of Odisha etc



**Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)**

Direct Income Support of ₹6000 p.a for farmers in three installments of ₹2000/-

Over 8 crore 46 lakh farmers families covered

- Quasi UBI- Not Universal, Conditional and Periodic

**Wayforward:**

- More Pilot Projects are needed
- Skilling
- Employment Generation

**4. Water mission may miss 2024 target**

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Mains:** Improving access to sanitation and public health and implications on Sustainable development goals.

**Introduction**

- The Government's 'Har Ghar Jal' initiative is likely to fall short of its target of providing potable water connections to all rural households in India by 2024. This initiative is part of the Jal Jeevan Mission.
- Only 75% of village homes are likely to have taps with access to drinking water by April 2024.

**About Jal Jeevan Mission**

- The Jal Jeevan Mission, with a financial outlay of ₹3.60 lakh crore, targets approximately 19.5 crore households.
- The mission's stated objective is to provide 'functional' tap connections that give at least 55 litres per person per day, of potable or drinking water.

**Reasons for the delay**

- **Pandemic:** Lockdowns and shift in priorities by the local administration caused significant delays.
- The Ukraine war resulted in severe shortages of steel and cement – these are crucial in manufacturing and linking metal pipes.
- **Administrative:** Revisions in prices and time lost in renegotiating contracts and improving supply.
- Shortage of skilled manpower in multiple states resulted in difficulties in creating tanks, cisterns, and water connections that meet acceptable quality standards.
- State Specific Issues – Availability of water in Rajasthan, water contamination in West Bengal and Kerala etc.

**Is there a gap between the reported and actual connections?****There are three ways to identify the gaps:**

1. **Certification:** Village administration should upload a video to verify the claims of being fully connected with drinking water – This data shows gaps between reported and verified connections. For example, only 58,357 villages have been certified compared to the 1,68,000 villages that are reported as 'Har Ghar Jal'.
2. **Independent audit agency:** To survey the households and see if the water is being delivered to satisfaction.
3. **Panel of National WASH:** To take stock of the quality of service under the initiative.
  - **Findings of a recent such survey** – Only 62% of the households reported as Har Ghar Jal had fully functional connections. Only eight States and Union Territories so far have reported all their villages as 100% connected, but nearly all of them were well connected in 2019 itself.

**Nut Graf:** The Government's 'Har Ghar Jal' initiative is likely to fall short of its target of providing potable water connections to all rural households in India by 2024. The pandemic, the Ukraine war, and state-specific issues have all contributed to the delays.

**5. An inclusive social policy for migrants**

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation.

**Mains:** Government policies and interventions, welfare schemes for vulnerable sections of the population.

**Prelims:** Economic and Social Development – Sustainable Development, Poverty, Inclusion, Demographics, Social Sector initiatives, etc.

**Context:**

The article discusses the challenges faced by migrant workers in Kerala and the need for inclusive policy-making to address their rights and ensure social justice.

**Introduction**

- Kerala is a major employment hub for inter-State migrant workers, attracting them with higher wages and better working conditions.
- The state has implemented welfare schemes for migrant workers, but there are concerns about the effective implementation and reach of these policies.



**Shortcomings in Policy Implementation**

- Preliminary findings of a study conducted by Mahatma Gandhi University reveal that many migrant workers do not benefit from existing policies.
- The lack of a disaggregated assessment of migrant workers' work and life situations contributes to this issue.

**Unity Trouble and Policy Critiques**

- "Unity trouble" refers to the absence of a comprehensive understanding of the migrant labour population's rights and challenges.
- The use of the term "guest worker" is seen as ambiguous and fails to address nuanced rights issues.
- Strikes by migrant labourers in Kerala highlight the need for inclusive policy-making and address core rights concerns.

**Rights and Dignity of Migrant Workers**

- Migrant workers face wage-related issues, unhygienic living conditions, lack of social security, and physical and verbal abuse.
- The phenomenon of the chain of exploitation, involving wage exploitation and theft, further exacerbates their plight.

**Enhancing Social Justice and Inclusivity**

- By addressing the social justice concerns of migrant workers, Kerala has the opportunity to reinforce its reputation as an inclusive space.
- Thematic data collection, grounded in rights-based principles, and collaboration with origin states are recommended.
- Awareness programs, cultural exchange initiatives, and multi-stakeholder dialogues can promote migrant workers' rights and social integration.
- Adopting a comprehensive vision for sustainable workers' human rights aligned with global instruments like the Global Compact on Migration is crucial.

**The Way Forward: Recommendations**

- Shift to a thematic approach for data collection on migrant workers at the panchayat level.
- Ensure government decisions on health, employment, and social situations are rights-based.
- Establish mechanisms for enhanced access to justice and legal remedies in collaboration with origin states.
- Promote awareness among migrants about their rights and available legal remedies.
- Implement initiatives for cultural exchange, community engagement, and mutual understanding.
- Foster multi-stakeholder policy and monitor dialogues for migrant workers' rights and welfare.
- Prioritise the establishment of a comprehensive vision for sustainable workers' human rights.

**Nut Graf:** Kerala's status as an employment hub for migrant workers raises concerns about the effective implementation of welfare policies, highlighting the necessity for an inclusive approach to protect their rights and promote social integration.

**6. Wastewater surveillance**

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Mains:** Improving access to sanitation and public health and implications on Sustainable development goals.

**Prelims:** Economic and Social Development- Poverty, Inclusion, Demographics, Social Sector Initiatives, etc.

**Context:**

The article explores the potential of wastewater surveillance as a tool for enhanced public health surveillance in India, highlighting its relevance during the COVID-19 pandemic and its benefits in disease monitoring.

**Introduction:**

- The historical case of John Snow's cholera investigation highlights the potential of disease prevention and control.
- A recently published study in The Lancet Global Health emphasizes the promise of using wastewater for public health surveillance.
- Wastewater surveillance has gained relevance during the COVID-19 pandemic and can be a valuable tool for tracking the spread of diseases.

**Benefits of Wastewater Surveillance:**

- Cost-effective approach that does not rely on invasive samples from individuals with clinical symptoms.
- Complements existing public health surveillance systems and provides real-time insights into community-level disease patterns.
- Helps reduce reliance on any one source of data and offers early detection capabilities.

**Integration of Wastewater Surveillance in India:**

- Systematic sampling and analysis of wastewater from varied sources, including rural areas and urban localities.
- Testing of samples in designated laboratories to identify disease-causing agents.
- Integration with existing surveillance mechanisms, such as public health laboratory networks and the Ayushman Bharat Digital Mission.

**Role of Trained Public Health Professionals:**

- Requires professionals trained in traditional epidemiological methods and data interpretation from wastewater surveillance.
- Ensuring public health departments at all levels have access to wastewater surveillance data to enhance disease monitoring and response.

**Importance of Data Sharing and International Collaboration:**

- Cultivating an environment of accessibility and cooperative strategies within and beyond borders.
- Sharing wastewater surveillance data with global health agencies for collaborative efforts in disease tracking and mitigation.
- Advocating for international commitments and support through platforms like the G20.

**Political Backing and Funding:**

- India's leadership at international platforms provides an opportunity to elevate the significance of innovative approaches to disease surveillance.
- Leveraging India's position to advocate for enhanced public health surveillance integrating wastewater sampling.
- Positioning India as a leader and coordinator in integrated public health surveillance through strategic collaborations and proactive leadership.

**NutGraf:** Wastewater surveillance has emerged as a promising approach for public health surveillance in India, offering real-time insights into disease patterns and complementing existing systems. Integrating this method can strengthen disease monitoring, early detection, and targeted responses, positioning India as a leader in integrated public health surveillance.

**7. Multidimensional Poverty Index of UNDP**

**Syllabus:** GS 2- Issues relating to poverty and hunger.

**Prelims:** Issues relating to poverty and hunger.

**Introduction:**

- The United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI) released the latest update of the global Multidimensional Poverty Index (MPI).
- The report highlights the remarkable progress made by India in reducing poverty, with 415 million people lifted out of poverty between 2005-06 and 2019-21.

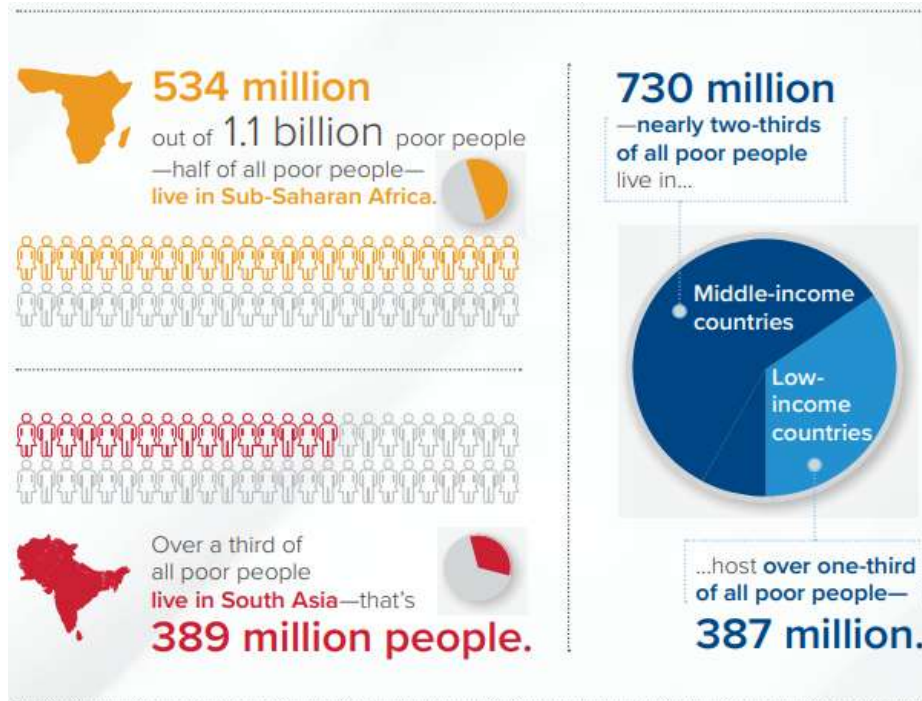
Dimensions of Poverty	Indicator	Deprived if living in the household where...	Weight
Health	Nutrition	An adult under 70 years of age or a child is undernourished.	1/6
	Child mortality	Any child under the age of 18 years has died in the five years preceding the survey.	1/6
Education	Years of schooling	No household member aged 10 years or older has completed six years of schooling.	1/6
	School attendance	Any school-aged child is not attending school up to the age at which he/she would complete class 8.	1/6
Standard of living	Cooking Fuel	The household cooks with dung, wood, charcoal or coal.	1/18
	Sanitation	The household's sanitation facility is not improved (according to SDG guidelines) or it is improved but shared with other households.	1/18
	Drinking Water	The household does not have access to improved drinking water (according to SDG guidelines) or safe drinking water is at least a 30-minute walk from home, round trip.	1/18
	Electricity	The household has no electricity.	1/18
	Housing	Housing materials for at least one of roof, walls and floor are inadequate: the floor is of natural materials and/or the roof and/or walls are of natural or rudimentary materials.	1/18
	Assets	The household does not own more than one of these assets: radio, TV, telephone, computer, animal cart, bicycle, motorbike or refrigerator, and does not own a car or truck.	1/18

#### India's Poverty Reduction Success:

- The incidence of poverty in India declined from 55.1% to 16.4% during the 15-year period.
- In 2005-06, around 645 million people were in multidimensional poverty, which decreased to approximately 370 million in 2015-16 and 230 million in 2019-21.
- India is among 25 countries that successfully halved their global MPI values within 15 years, including Cambodia, China, Congo, Honduras, Indonesia, Morocco, Serbia, and Vietnam.

#### Positive Trends and Fast Progress:

- Deprivation in all indicators declined in India, with the poorest states and disadvantaged groups experiencing the fastest progress.
- The percentage of people deprived under various indicators significantly decreased:
  - Nutrition: 44.3% (2005-06) to 11.8% (2019-21)
  - Child mortality: 4.5% to 1.5%
  - Cooking fuel deprivation: 52.9% to 13.9%
  - Sanitation deprivation: 50.4% (2005-06) to 11.3% (2019-21)
  - Drinking water deprivation: 16.4% to 2.7%
  - Electricity deprivation: 29% to 2.1%
  - Housing deprivation: 44.9% to 13.6%



#### Global Impact:

- Countries with different poverty incidences were successful in halving their global MPI values.
- Despite starting with an incidence above 50%, both India and Congo achieved this milestone.
- The 2023 release of the report reveals that 1.1 billion people, approximately 18% of the global population, live in acute multidimensional poverty across 110 countries.

#### Challenges and Future Prospects:

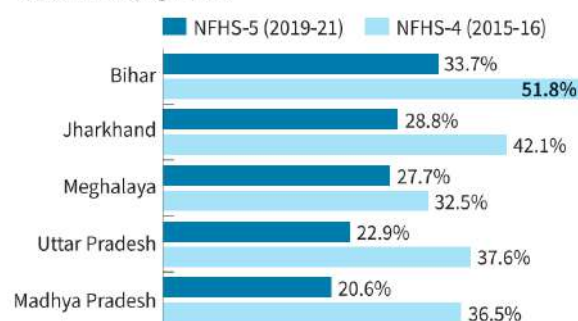
- The report recognizes that the absence of extensive data during the COVID-19 pandemic presents difficulties in evaluating the immediate outlook for poverty alleviation.
- Continued efforts are necessary to sustain progress and address ongoing poverty-related issues.

#### NITI Aayog's National Multidimensional Poverty Index 2023

- Based on NFHS data and modelled on UNDP GMPI.
- India has registered a significant decline of 9.89% in the number of multidimensionally poor, from 24.85% in 2015-16 to 14.96% in 2019-2021.
- Nearly 13.5 crore people came out of multidimensional poverty during the period.
- Rural areas witnessed the fastest decline in poverty from 32.59% to 19.28%.
- Poverty in urban areas, during the same period, saw a decrease from 8.65% to 5.27%.

#### Poverty score

The chart shows the top-five States with the highest share of population with multidimensional poverty, according to the latest NITI Aayog report



**8. NITI Aayog - MDPI**

**Syllabus:** GS 2- Issues relating to poverty and hunger.

**Prelims:** NITI Aayog - MDPI

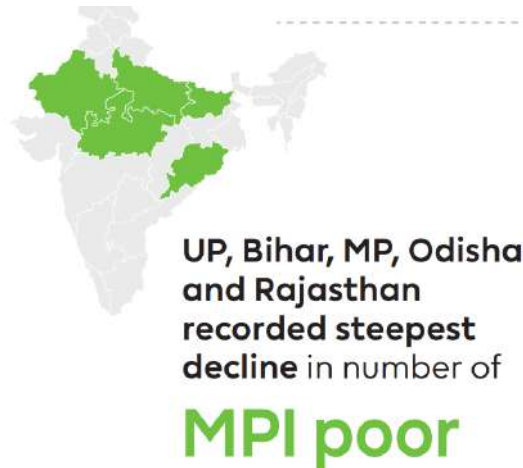
**Context:** According to a report by the Niti Aayog, India has made remarkable progress in reducing multidimensional poverty in the last four years. The report, titled 'National Multidimensional Poverty Index: A Progress of Review 2023', was unveiled by the Vice-Chairman of Niti Aayog.

**Details**

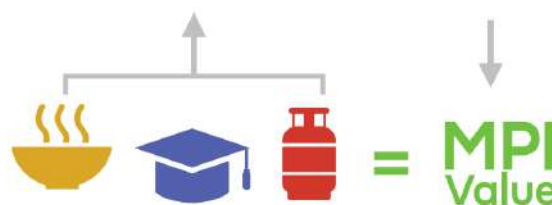
- The report presents the National MPI, a comprehensive measure of poverty that captures multiple deprivations in health, education, and living standards. The indicators used for the National MPI are aligned with the Sustainable Development Goals (SDGs).

**Highlights of the Report**

- The Niti Aayog report titled 'National Multidimensional Poverty Index: A Progress of Review 2023' revealed that India's multidimensional poverty rate, which measures the deprivations faced by people in health, education and living standards, fell from 24.85% in 2015-16 to 14.96% in 2019-21.
- This means that about 135 million people moved out of multidimensional poverty during this period.
- It highlighted that Uttar Pradesh, Bihar, Madhya Pradesh, Odisha and Rajasthan witnessed the fastest reduction in multidimensional poverty among all states.



- According to the report, poverty in both rural and urban areas declined significantly between 2015-16 and 2020-21. The rural poverty rate fell from 32.59% to 19.28%, while the urban poverty rate dropped from 8.65% to 5.27%.
- The MPI value decreased from 0.117 to 0.066, and the intensity of poverty decreased from 47% to 44%, in the five years. This means that India is on track to achieve the SDG target 1.2 (of reducing multidimensional poverty by at least half) well before the deadline of 2030.



Improvement in **nutrition**,  
**years of schooling**,  
**sanitation**, and **cooking**  
**fuel** played a significant role  
in reducing the MPI value



- The report showed that India made significant improvements in all the indicators, especially in nutrition, child mortality, years of schooling, school attendance, cooking fuel, sanitation and electricity. It states that “All 12 parameters of the MPI have shown marked improvements.”
- The report attributed this progress to various government schemes and initiatives such as the National Nutrition Mission, Ayushman Bharat, Swachh Bharat Mission, Ujjwala Yojana, Saubhagya Yojana and others.
- The report highlights the importance of using the National MPI as a policy tool to identify and address the multiple dimensions of poverty and inequality in India.

**Concern:**

- The report also highlighted the regional disparities and inequalities in multidimensional poverty across states, districts, social groups and genders.
- It found that Bihar, Jharkhand, Uttar Pradesh and Madhya Pradesh had the highest MPI values, while Kerala, Goa, Delhi and Punjab had the lowest.
- It found that rural areas had a higher MPI than urban areas, Scheduled Tribes had a higher MPI than other social groups, and females had a higher MPI than males.

**Why is the MPI important?**

- The MPI is important because it provides a more comprehensive picture of poverty than income alone. It helps to identify the multiple and overlapping deprivations faced by poor people and their specific needs and priorities.
- It helps to monitor and evaluate the impact of policies and programs on different dimensions of poverty and well-being.
- It helps to foster accountability and transparency among stakeholders and to promote dialogue and collaboration among different sectors and levels of government.
- The MPI is also important because it aligns with India's vision of achieving inclusive and sustainable development as envisaged in the SDGs. The SDGs aim to end poverty in all its forms and dimensions by 2030 and to ensure that no one is left behind.
- The MPI can help India to track its progress towards these goals and to identify the gaps and challenges that need to be addressed.

**What are the challenges and way forward?**

- Reducing the regional disparities and inequalities in multidimensional poverty across states, districts, social groups and genders.
- Enhancing the quality and availability of data on multidimensional poverty at more disaggregated levels and more frequent intervals.
- Strengthening the coordination and convergence among different ministries, departments, agencies and stakeholders involved in addressing multidimensional poverty.
- Increasing the awareness and participation of civil society, media, academia and other actors in advocating for and monitoring multidimensional poverty reduction.
- Integrating the MPI into planning, budgeting, implementation and evaluation processes at all levels of government.
- Leveraging innovation, technology, partnerships and best practices to accelerate multidimensional poverty reduction.

**Conclusion**

India has made remarkable strides in reducing multidimensional poverty in recent years. However, there is still a long way to go to achieve the SDGs and ensure that no one is left behind. The MPI can serve as a useful tool to guide India's efforts towards this end.

**9. Progress towards Zero Hunger**

**Syllabus:** GS 2- Issues relating to poverty and hunger.

**Prelims:** Zero Hunger

**Context:** Recently the Global Report on the Food Crises, 2023 was released.

Global Report on Food Crisis is an <b>annual report</b> to achieve a <b>consensus-based assessment</b> of acute food insecurity in the world	
<b>Released by</b>	Food Security Information Network (FSIN) and Global Network against Food Crises (GNAFC)
<b>Key Highlights</b>	The number of people experiencing acute food insecurity increased for the <b>fourth consecutive year in 2022</b>
	<b>Key drivers:</b> Economic shocks (including due to COVID-19 and Ukraine War), Conflict/insecurity, Weather/Climate extremes, etc.
<b>What is Acute Food Insecurity?</b>	It refers to a situation where a <b>person's or household's access to adequate food and nutrition is severely limited</b> , resulting in a high risk of starvation or death.
<b>What is FSIN?</b>	A global initiative co-sponsored by <b>Food and Agriculture Organization (FAO), World Food Programme (WFP), and International Food Policy Research Institute (IFPRI)</b> to strengthen <b>food and nutrition security information systems</b> for producing reliable and accurate data to guide analysis and decision-making.
<b>What is GNAFC?</b>	An alliance of <b>humanitarian and development actors founded</b> by the European Union, FAO, and WFP in 2016 to prevent, prepare for and respond to food crises and support the Sustainable Development Goal to End Hunger (SDG 2)

- The report has estimated that between 691 million and 783 million people in the world will suffer from hunger in 2022.
- The report projects that almost 600 million people will be undernourished in 2030.

#### What is food security?

- Food security is defined (from the World Food Summit of 1996) thus: "When all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active, and healthy life".
- The prevalence of moderate or severe food insecurity in the population is based on the Food Insecurity Experience Scale (FIES).

#### What are the key drivers of food insecurity?

- The report notes the following reasons as being responsible:
- Economic slow down - thanks to lockdowns, economic downturns, and other pandemic-related disruptions in 2020 that led to job losses and reduced incomes for many people
- The Russia-Ukraine war
- Governmental policies that may not be entirely favourable
- Increasing urbanization that drives changes through the agrifood systems.
- The report's comparison of food insecurity among rural, peri-urban and urban populations reveals that global food insecurity is lower in urban areas.

#### What are the solutions ahead?

- The report helps "identify vulnerable population groups, contributing to evidence to inform decision-making and effective action through the appropriate targeting and design of policies and programmes."
- Nutrition as a fundamental goal must be supported by government policy, civil society and the private sector.
- Policy incentives are necessary to encourage shops to sell greater amounts of fresh and minimally processed foods.
- Street foods, which an estimated 2.5 billion people worldwide consume every day. The report calls for addressing multiple infrastructure and regulatory gaps to improve nutritional safety and quality of street food.
- The GRFC also suggests building rural infrastructure, including quality rural and feeder roads to connect remote farms and enterprises to main road networks.
- Other public investments to support linkages between (mainly small) farms and small and medium enterprises could include warehousing, cold storage, dependable electrification, access to digital tools and water supply.

### 10. Cong. brings in Bill promising minimum income in Rajasthan

**Syllabus:** Welfare schemes for vulnerable sections of the population by the Centre and the States and the performance of these schemes.

**Mains:** Welfare Schemes for Vulnerable Sections.

**Prelims:** About Minimum Guaranteed Income and MGNREGA

#### Context:

The Rajasthan government has introduced 'The Rajasthan Minimum Guaranteed Income Bill, 2023,' aiming to provide legislative backing for urban employment guarantee schemes and make pension a legal right with an annual increment.

#### Introduction:

- The Rajasthan government has introduced 'The Rajasthan Minimum Guaranteed Income Bill, 2023' in the Assembly, becoming the first state to provide legislative backing for urban employment guarantee schemes and make pension a legal right with a 15% annual increment.

**Legislative Backing for Urban Employment Guarantee Schemes:**

- The bill offers legislative support to urban employment guarantee schemes, a first in the country.
- Every adult resident in rural areas of the state is entitled to guaranteed employment for at least 25 additional days per financial year, following the completion of the maximum workdays prescribed under the Union government's MGNREGA Scheme.

**Legal Right to Pension:**

- The bill ensures pension as a legal right for individuals falling under specific categories, including old age, specially-abled, widows, and single women.
- The pension amount will be subject to a 15% annual increment.

**National Implementation Demanded:**

- Chief Minister Ashok Gehlot has written to the Prime Minister, urging the enactment of a similar law across the entire country.
- The State Cabinet passed a resolution supporting the demand.

**Unique Approach for Vulnerable Families:**

- Social activist Nikhil Dey highlights the bill's innovative approach to minimum income guarantees for vulnerable families nationwide.
- It combines employment guarantees for those able to work, both in rural and urban areas, and minimum social security pensions for those unable to work, ensuring income security for all.

**First Legislative Backing for Urban Employment Guarantee Scheme:**

- Other states have introduced employment guarantee schemes for urban areas via executive orders, but this bill provides legislative support for the first time.

**Significance of Legalising Social Security Pensions:**

- The bill makes social security pensions a legal guarantee, a first in the country.
- It includes a minimum pension amount of ₹1,000 with automatic annual increments of 15%, covering a broader scope.

**Nut Graf:** Rajasthan becomes the first state to introduce a groundbreaking bill, assuring urban employment guarantee schemes and legalising pensions with an annual 15% increment.

**11. No quick fix**

**Syllabus:** Issues Relating to the Development and Management of Social Sector/Services relating to Health, Education, and Human Resources.

**Mains:** Reason for low spending on research and steps taken by the government in this regard, Features of NRF

**Context:** Government plans to table the National Research Foundation (NRF) Bill in the monsoon session to fund research and attract private sector funding.

**About NRF and its provisions:**

- The National Research Foundation (NRF) Bill, 2023, is a significant piece of legislation set to be tabled in the current monsoon session of the Indian Parliament.
- The NRF aims to establish a new centralized body with a budget of ₹50,000 crore over the next five years to fund research in India.
- The proposed model draws inspiration from institutions like the United States National Science Foundation and the European Research Council.
- The NRF's plan is to source the majority of its budget, ₹36,000 crore, from the private sector, which has historically contributed about 36% of India's total research expenditure.

**Comparison with other countries:**

- India's spending on research has been relatively low, around 0.6%-0.8% of GDP, in contrast to countries with strong science and technology foundations spending 1%-2% of their GDP on research.
- Notably, countries like China, the U.S., and Israel have seen a significant contribution (nearly 70%) from the private sector in research funding, while in India, it has been comparatively lower.
- The higher private sector contribution in other nations can be attributed to sustained government support to universities and research institutions, encouraging the development of companies and organizations that invest in research and development.

### How to attract the private sector to NRF:

- The Indian government believes that attracting more private funding is vital to galvanize university research in the country.
- One proposal to achieve this is by directing funds from private companies' annual Corporate Social Responsibility (CSR) obligations to the NRF.
  - However, this approach faces challenges as most CSR funds are typically spent on education, healthcare, and sanitation projects within the companies' own communities, with little government control over their allocation.
- The government may explore options like providing tax benefits or offering incentives to encourage private companies to contribute to the NRF.
- To enhance private sector research in India, the NRF should focus on creating conditions that incentivize the growth of companies that see value in investing in research and developing proprietary technology.
- Merely relying on philanthropy is unlikely to be sufficient to address the current gap in private-sector research in the country.

**Nut Graf:** The National Research Foundation (NRF) Bill, forming an integral part of the National Education Policy (NEP), will create a central body with a ₹50,000 crore budget to fund research. It aims to boost private sector participation, to be presented in the ongoing monsoon session.

## 12. What has to be done to get to Zero Hunger?

**Syllabus:** Issues relating to Poverty and Hunger.

**Prelims:** Global Report on Food Crises, Global Hunger, Malnourishment

**Mains:** Sustainable development goals, Causes of Hunger

### Context:

- The **Global Report on Food Crises (GRFC) 2023** released by **Food Security Information Network** found that 691 million to 783 million people worldwide suffered from hunger in 2022, with levels higher than pre-pandemic i.e 2019.

### Defining food security?

- According to the **World Food Summit**, food security is defined as having access to sufficient, safe, and nutritious food to lead an active and healthy life.
- Extent of food insecurity is defined by the **Food Insecurity Experience Scale**. This is an analysis technique where 8 questions are directly asked to the target groups to assess difficulties in accessing food.
- **Global Hunger** is tracked by the prevalence of undernourishment in the country.

### Key Findings of the Report?

- While prevalence of Hunger is not showing an ever-increasing path year on year, absolute levels of hunger are still above the pre-pandemic levels. This has major implications on achievement of the SDG goal 2 (Zero Hunger Programme).
- The GRFC report found that nearly 2.4 billion people did not have adequate access to food in 2022 (i.e food insecurity)
- Around 9.2% of the world population are affected by hunger in 2022. In comparison, around 7.9% of the population were hungry in 2019.
- **The report shows a decline** in stunting (being short for one's age) among children under five and in wasting (being too thin for a height) in comparison to levels in 2000.
- Almost 3.2 billion people worldwide could not afford a healthy diet in 2020. The cost of a healthy diet increased globally by 6.7% between 2019 and 2021.
- It is projected that almost 600 million people will be chronically undernourished in 2030.

### Drivers of food insecurity?

1. **COVID – 19:** The pandemic caused disruptions in food supply due to lockdowns. Recession and economic slowdown associated with it led to unemployment and reduced disposable income.
2. **Ukraine Crisis:** Global supply chain disruptions associated with the conflict have led to reduced access to agricultural commodities. Food inflation is also high affecting the affordability of food.
3. **Government Policies:** Export and import restrictions in world trade, increase in interest rates to curb inflation etc have also affected the access to food.
4. **Urbanisation:** Food insecurity is lower in urban areas as available resources are shipped to urban areas in search of better returns. This leaves the rural areas with very limited food resources.

### Possible Solutions?

- Identification of vulnerable populations for a targeted response. Multi Stakeholder approach with government, civil society working together for delivery of government schemes and programmes.
- State support to outlets providing healthier foods which are fresh and minimally processed.
- Provide infrastructure support to street food outlets to improve nutritional quality and safety of food.

- Building rural infrastructure, warehousing and cold storage facilities for better food management and reduced wastage.
- Empowering the local governments in implementing policies for making healthy diets available and affordable for all.

**Nut Graf:** *The Global Report on Food Crises (GRFC) showed prevalence of hunger in 2022, with levels higher than 2019. The drivers of food insecurity include the COVID-19 pandemic, the Ukraine crisis, government policies, and urbanization. Identifying vulnerable populations for a targeted response, providing state support to outlets providing healthier foods, and building rural infrastructure is key to address this challenge.*

### 13. Drawn from gig workers' struggles, hewn in Rajasthan

**Syllabus:** Welfare schemes, mechanisms, laws, institutions and bodies constituted for the protection and betterment of the vulnerable sections of the population.

**Mains:** Challenges faced by gig workers in India, labour rights, and the impact of the gig economy on employment patterns.

**Prelims:** About Gig economy

#### Context:

The Rajasthan Assembly approved the Rajasthan Platform Based Gig Workers (Registration and Welfare) Act 2023, exemplifying a commitment to ensuring social security for gig workers and setting a noteworthy precedent for equitable work practices.

#### Understanding the Gig Economy

- The gig economy, characterised by minute contractualization of work, allows employers to escape responsibility for wages, working conditions, and social security.
- Companies like Uber and Ola use app-based platforms to connect customers with drivers, taking a commission without providing basic benefits.

#### Rajasthan's Pioneering Law

- The Rajasthan law addresses the social security rights of gig workers, focusing on a welfare board and social security fund funded through transaction fees.
- Gig workers' demands for social security found support from the government, leading to the passage of the Act, which is the first of its kind in India.

#### Inspiration from the Past

- The law draws inspiration from the Hamal Panchayat, a union of people who carried sacks in Maharashtra over 60 years ago.
- The Hamal Panchayat successfully fought for a law that set up a "Mathadi board," ensuring social security benefits and fair working conditions for workers.

#### Effective Application of Mathadi Act Principles

- The gig economy's app-based nature allows accurate and efficient application of Mathadi Act principles.
- All aggregators and workers must be registered with the board, and workers have access to their data and transactions, promoting transparency.

#### A Model for Fair Work and Social Security

- The Rajasthan law serves as an important step forward in providing social security and fair working conditions to gig workers.
- It can inspire more progressive laws for gig workers globally and can adapt to address the challenges posed by artificial intelligence and automation.

**Nut Graf:** *The Rajasthan Assembly's passage of the Rajasthan Platform Based Gig Workers Act 2023 is a crucial step in safeguarding gig workers' social security rights, drawing inspiration from past workers' struggles and creating a foundation for fair work practices.*



**14. 530 districts reported as free from manual scavenging**

**Syllabus:** Welfare schemes for vulnerable sections of the population by the Centre and the States

**Mains:** Welfare schemes, mechanisms, laws, institutions and bodies constituted for the protection and betterment of the vulnerable sections.

**Prelims:** About NAMASTE Scheme and manual scavenging.

**Context:**

The Social Justice Ministry presented data in the Rajya Sabha on manual scavenging and sewer cleaning deaths in India. Disparities exist among states, and the focus is now on addressing hazardous cleaning practices.

**Data on Manual Scavenging and Deaths Related to Sewer Cleaning**

- The Social Justice Ministry provided data in the Rajya Sabha indicating that several Indian states and union territories have districts yet to declare themselves free of manual scavenging.
- Over the past five years, India reported no deaths due to manual scavenging, but 330 people lost their lives during the cleaning of sewers and septic tanks.
- So far, 530 districts have reported being free of manual scavenging, while others are yet to do so.
- The Ministry claimed that manual scavenging is no longer practised in the country.

**Disparities in States and Union Territories**

- States such as Bihar, Rajasthan, and Tamil Nadu have achieved 100% declaration of being free of manual scavenging.
- However, several states and union territories, including Manipur, Jammu and Kashmir, Telangana, Odisha, and West Bengal, have a lower percentage of districts declaring themselves free (ranging from 15% to 60%).
- Manipur had only two out of 16 districts reporting as free of manual scavenging, while Jammu and Kashmir and Telangana had just 30% of their districts declaring themselves free.

**Role of District Sanitation Committees**

- Each district is required to declare itself free of manual scavenging or identify locations of insanitary latrines and associated manual scavenging.
- The district sanitation committees analyse data on insanitary latrines to determine the existence of manual scavenging.

**Complaints and Swachata Mobile App**

- The Ministry examined over 6,000 complaints received through the Swachata mobile app, alleging possible instances of manual scavenging, but no complaint was substantiated.
- The government data reveal that deaths from hazardous cleaning of sewers and septic tanks continue to occur.

**NAMASTE Scheme and Focus on Addressing Hazards**

- The Ministry's principal focus is now to address deaths related to hazardous cleaning.
- The NAMASTE scheme was launched for this purpose, with an emphasis on holding employers responsible for hazardous cleaning practices.
- Government data indicate that over 90% of identified manual scavengers belong to Scheduled Caste communities.

**Nut Graf:** Several Indian states and union territories have districts yet to declare themselves free of manual scavenging. It is imperative to get rid of this inhuman practice entirely in all regions of the country if we intend to become a "Vishwaguru" and ensure that all citizens lead lives of dignity and safety.

# EDUCATION

## 1. QS and NIRF Rankings

**Syllabus:** GS 2- Government initiatives for the development and management of Social Sector/Services relating to Health, Education, Human Resources etc.

**Prelims:** QS and NIRF Rankings

**Context:** QS World Rankings for Universities have been released recently. The NIRF Rankings by the Department of Higher Education last month.

### QS Ranking

- By Quacquarelli Symonds, a UK based agency.
- Published annually for universities across the world.
- Parameters:
  - Academic Reputation (30%)
  - Citations per faculty (20%)
  - Employer Reputation (15%)
  - Faculty/Student Ratio (10%)
  - International Faculty Ratio (5%)
  - International Student Ratio (5%)
  - Sustainability (5%)
  - Employment Outcomes (5%)
  - International research network (5%)
- Changes in parameters this year have caused a lot of variations compared to 2023 rankings.

### Status of Indian Institutes in QS Rankings

- 2024 edition: 45 Indian universities were ranked.
- 7th most represented country globally.

#### QS RANKING (INDIAN INSTITUTIONS)

National Rank	2024 Rank	2023 Rank	Institution Name
1	149	172	IIT, Bombay (IITB)
2	197	174	IIT, Delhi (IITD)
3	225	155	Indian Institute of Science
4	271	270	IIT, Kharagpur (IIT-KGP)
5	278	264	IIT, Kanpur (IITK)
6	285	250	IIT, Madras (IITM)
7	364	384	IIT, Guwahati (IITG)
8	369	369	IIT, Roorkee (IITR)
9	407	521-530	University of Delhi
10	427	551-560	Anna University

Source: QS

Source: Indian Express

### NIRF Rankings

- By the Ministry of Education since 2015.
- First effort by the government to rank institutes of Higher Education.
- Consists of overall rankings, and separate ranks for Universities, Research Institutions, Degree colleges.
- Also discipline specific rankings.
- This year's addition of "Agriculture and Allied Sectors" discipline.
- Atal Ranking of Institutions on Innovation Achievements integrated with NIRF now.

### NIRF Parameters

- Teaching, Learning & Resources (TLR)
  - Student Strength including Doctoral Students (SS)
  - Faculty-student ratio with emphasis on permanent faculty (FSR)
  - Combined metric for Faculty with PhD (or equivalent) and Experience (FQE)
  - Financial Resources and their Utilisation (FRU)
- Research and Professional Practice (RP)
  - Combined metric for Publications (PU)
  - Combined metric for Quality of Publications (QP)
  - IPR and Patents: Published and Granted (IPR)
  - Footprint of Projects and Professional Practice (FPPP)

- Graduation Outcomes (GO)
  - Metric for University Examinations (GUE)
  - Metric for Number of Ph.D. Students Graduated (GPHD)
- Outreach and Inclusivity (OI)
  - Percentage of Students from Other States/Countries (Region Diversity RD)
  - Percentage of Women (Women Diversity WD)
  - Economically and Socially Challenged Students (ESCS)
  - Facilities for Physically Challenged Students (PCS)
  - Perception (PR) Ranking
- Peer Perception
  - Academic Peers and Employers (PR)

## 2. National Research Foundation (NRF)

**Syllabus:** GS 2- Government initiatives for the development and management of Social Sector/Services relating to Health, Education, Human Resources etc.

**Prelims:** Major government initiatives for the promotion of science and technology developments, research funding, and coordination mechanisms.

### Introduction of the NRF Bill in Parliament:

- The Union Cabinet has approved the introduction of the National Research Foundation (NRF) Bill in Parliament, following the recommendations of the National Education Policy 2020.
- The NRF aims to address the funding challenges in science and technology and act as a coordinating agency between researchers, government bodies, and industry.

### Objectives of the NRF:

- The NRF aims to facilitate research in India's universities, particularly State universities, by funding research infrastructure and researchers.
- It intends to bring industry into the mainstream of research and serve as a platform for collaboration between academia and industry.

### Funding of the NRF:

- The NRF will operate with a budget of ₹50,000 crore for five years, with 28% (₹14,000 crore) funded by the government and 72% (₹36,000 crore) from the private sector.
- The government's share is proposed to increase to ₹20,000 crore per year, with ₹4,000 crore sourced from the existing Science and Engineering Research Board's budget.

### Concerns over funding:

- The allocated funding for the NRF, less than 2% of the nation's gross domestic expenditure on research and development (GERD), is considered inadequate compared to other major economies like the U.S. and China.
- India's GERD was significantly lower than the U.S. and China in 2017-18, highlighting the need for increased investment in research and development.

### Facilitating the "ease of doing science":

- The NRF needs to minimise the time between grant application and fund disbursement, ensuring a maximum turnaround time of six months.
- Digital processing of paperwork and financial transactions should be implemented to eliminate the need for physical copies and streamline administrative processes.
- The NRF should have independent spending guidelines to provide flexibility while maintaining accountability, separate from the General Financial Rules and the government e-Marketplace (GeM).
- Timely release of funds should be ensured, and mechanisms should be established to facilitate and implement this effectively.

### Private sector participation and funding:

- While the involvement of the private industry in the NRF is welcome, the mechanisms for raising ₹36,000 crore from the industry require more detailed planning and the establishment of secure mechanisms, such as escrow accounts.

### Learning from international models:

- The NRF draws inspiration from international science agencies like the U.S. National Science Foundation and science agencies in Germany, the U.K., Switzerland, Norway, South Korea, and Singapore.
- The success of the NRF will depend on the government's ability to set and implement transparent rules that differ from existing practices, with a focus on critical thinking, creativity, and innovation.

### 3. Use any Indian language as optional medium, says CBSE

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** National Education Policy 2020

**Context:** The Union government has been trying to adopt these principles as part of the recommendations of the National Education Policy.

#### National Education Policy

- The National Education Policy (NEP) 2020 aims to transform India's education system by ensuring universal access to quality education from pre-primary to secondary levels by 2030.
- The policy emphasizes multilingualism and Indian languages will be given priority. The medium of instruction until at least grade 5 will be the home language/mother tongue/local language/regional language.
- The policy also focuses on foundational literacy and numeracy, and a new National Assessment Centre, PARAKH, will be established to improve assessment reforms.
- The policy aims to increase the Gross Enrolment Ratio (GER) in higher education to 50% by 2035.
- The Centre and states will work together to increase public investment in the education sector to reach 6% of GDP at the earliest.
- The policy also emphasizes teacher education and a separate Gender Inclusion Fund and Special Education Zones for disadvantaged regions and groups will be established.
- The policy aims to promote holistic and multidisciplinary education with multiple entry/exit options, and the National Research Foundation (NRF) will be established to support research and innovation.
- The Higher Education Commission of India (HECI) will be set up as an overarching umbrella body for the promotion of the higher education sector, excluding medical and legal education.

## IAS टेबलेट कार्यक्रम

सर्वोत्तम व्याख्यान की  
कहीं भी और कभी भी उपलब्धता



500 से अधिक घंटों का प्रारंभिक और मुख्य परीक्षा के पाठ्यक्रम को आवृत करता हुआ व्याख्यान



हमारे मार्गदर्शकों द्वारा प्रत्येक छात्र हेतु मार्गदर्शन और व्यक्तिगत प्रतिपुष्टि



मानक पुस्तकों सहित समय और अद्यतन अध्ययन सामग्री



पुनरीक्षण नोट्स के साथ चर्चित मुद्दों पर सप्ताह में दो बार लाइव वेबिनार व्याख्यान



साप्ताहिक वेबिनार, चर्चित मुद्दे, समसामयिकी पत्र/पत्रिका और प्रैक्टिस सेट का छात्र पोर्टल उपलब्ध

# GOVERNANCE

## 1. Antibiotics with promise — A lifeline India awaits

**Syllabus:** GS-2, Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

**Mains:** Need for Emergency Use Authorisation (EUA)

### Context

The recent extraordinary case of using promising antibiotics, cefepime/zidebactam, underscores the urgent importance of granting Emergency Use Authorisation (EUA) for antibiotics.

### What is Emergency Use Authorisation (EUA)?

- The Emergency Use Authorization (EUA) authority assists in strengthening the nation's public health defenses against chemical, biological, radiological, and nuclear (CBRN) threats.
- It also deals with infectious diseases, by facilitating the availability and use of medical countermeasures (MCMs) required during public health emergencies.

**Cefepime/zidebactam:** Cefepime/zidebactam is a promising antibiotic option that has activity against diverse antibiotic-resistant mechanisms.

**Cefiderocol:** Cefiderocol is a licensed antibiotic in multiple countries that was created by a Japanese business. It has proven to be extremely effective against infections with medication resistance.

### Need for Emergency Use Authorisation (EUA)

- Antibiotics that have been properly tested or confirmed to be effective in the fight against superbugs are critical.
- Millions of lives are lost each year as a result of the inadequacy of current antibiotics in the face of these tough infections.
- The lack of effective antibiotics to tackle drug-resistant diseases endangers countless lives.
- It is heartbreaking to see patients suffer from diseases simply because available antibiotics have lost their efficacy due to developing resistance.
- Drug resistance has rendered previously successful therapies ineffective.

### Way Forward

- India must show the same urgency and dedication to saving the lives of people who might otherwise die from infections resistant to all currently available antibiotics.
- We want the authorities to understand the critical need for action and the enormous potential of these life-saving medications.
- We may improve our armoury against drug-resistant illnesses by getting EUA for cefepime/zidebactam, an Indian discovery, and cefiderocol, a widely acknowledged antibiotic.
- Their placement on the EUA list would not only empower doctors but would also instill hope and confidence in patients and their families.
- As a country famed for its scientific achievements, we have the potential to have a significant effect on the global arena.

**Nut Graf:** Recognising the importance of promising antibiotics like cefepime/zidebactam and expediting its EUA, India will not only save lives within its borders but will also benefit countless others around the world who are in dire need of viable treatment alternatives.

## 2. Understanding Dark Patterns

**Syllabus:** Government policies, transparency and accountability

**Mains:** Government policies and interventions: Development in various sectors, transparency, accountability, and welfare schemes

**Prelims:** Concept of dark patterns, deceptive design techniques, and their impact on consumer rights

### Context:

The Department of Consumer Affairs and the Advertising Standards Council of India (ASCI) have addressed the issue of 'dark patterns,' deceptive design techniques used to manipulate users. Guidelines have been issued, and the government is working on regulations.



**Introduction:**

- The Department of Consumer Affairs and the Advertising Standards Council of India (ASCI) have held a joint consultation on the issue of 'dark patterns.'
- **Dark patterns refer to deceptive design techniques used to manipulate or deceive users into making choices that benefit the company.**
- Guidelines have been developed by ASCI, and the central government is working on norms against dark patterns.

**Understanding Dark Patterns:**

- Dark patterns are intentionally crafted designs or user interface techniques used to manipulate or deceive users.
- They influence user behaviour in ways that may not be in their best interest, benefiting the company implementing them.
- Examples include "sneak into basket" techniques in e-commerce and subtle positioning of "reject" links for personal information requests.

**Types of Dark Patterns:**

- Businesses use various deceptive patterns, such as creating a sense of urgency, confirming shaming, forced sign-ups, bait and switch, hidden costs, and disguised advertisements.
- These practices violate consumer rights, impede informed decision-making, and are prohibited under the Consumer Protection Act 2019.

**Legality of Dark Patterns:**

- The legality of dark patterns is complex, as distinguishing manipulation from fraudulent intent is challenging.
- Currently, most nations lack specific regulations against dark patterns.
- However, individuals harmed by dark patterns may seek compensation, as seen in cases involving Google and Facebook violating EU and French regulations.

**Global Regulatory Actions:**

- Major international authorities, such as the Competition and Markets Authority (CMA) in the UK and the European Data Protection Board, are formulating rules and guidelines to address dark patterns.
- CMA lists pressure-selling techniques violating consumer protection laws, while the European Data Protection Board offers guidance on identifying dark patterns that violate GDPR laws.

**Addressing Dark Patterns in India:**

- The Department of Consumer Affairs and the ASCI have taken steps to address dark patterns, warning major Indian online marketplaces against unfair trade practices.
- Companies are urged to refrain from using dark patterns, but a robust legal mechanism is needed with the growing use of e-platforms.
- Amending existing laws, introducing rules against deceptive design practices, and updating consumer protection and data protection legislation are necessary.

**Nut Graf:** The Department of Consumer Affairs and the ASCI have taken steps to combat 'dark patterns,' deceptive design techniques that manipulate users. Guidelines have been established, and efforts are being made to introduce regulations to protect consumers from such practices.

**3. Coming, women-only courts for alternative dispute resolution**

**Syllabus:** Welfare Schemes for Vulnerable Sections of the population by the Centre and States and the Performance of these Schemes; Mechanisms, Laws, Institutions and Bodies constituted for the Protection and Betterment of these Vulnerable Sections.

**Prelims:** Nari Adalats, Nyaya Sakhis

**Mains:** Alternate Dispute Resolution Mechanism, Welfare Schemes, Women empowerment

**Context:**

The government is launching a new initiative called **Nari Adalats** that are women-only courts at the village level as an alternate dispute settlement mechanism.

**What are Nari Adalats?**

- The courts will focus on resolving cases related to domestic violence, property rights etc
- The courts will be established in Assam and Jammu and Kashmir in the first phase.
- The Nari Adalats will be composed of seven-nine members. Half of the members will be elected members of the gram panchayat and the other half will be women of eminence such as doctors, teachers etc.
- All the women and girls within the local communities who are in need of assistance will have access to Nari Adalats.
- The courts will not have any legal status, but will focus on reconciliation, grievance redressal, and creating awareness of women's rights. They will provide a platform for women to raise awareness about their rights and entitlements and collect feedback from women about the effectiveness of government schemes.

- The scheme will be run by the Ministry of Women and Child Development (under the Mission Shakti) in collaboration with the Ministry of Panchayati Raj, the Ministry of Rural Development, and the Ministry of Electronics and Information Technology.
  - Mission Shakti is an integrated women empowerment programme at strengthening interventions for women safety, security and empowerment.
  - The scheme will be implemented till 2025-26.
  - **Mission Shakti has two sub-schemes:**
    - **Sambal:** for safety and security of women
    - **Samarthya:** for empowerment of women
  - **The components of Sambal sub-scheme include:**
    - One Stop Centre (OSC)
    - Women Helpline (WHL)
    - Beti Bachao Beti Padhao (BBBP)
    - **Nari Adalats**
  - **The components of Samarthya sub-scheme include:**
    - Ujjwala
    - Swadhar Greh
    - Working Women Hostel
    - National Creche Scheme for children of working mothers
    - Pradhan Mantri Matru Vandana Yojana (PMMVY)
    - Gap Funding for Economic Empowerment

#### Who are Nyaya Sakhis?

- "Nyaya Sakhis" will be nominated or selected by the gram panchayat who will act as the legal friends to women in need.
- The head of the Nari Adalat will be called the Mukhya Nyaya Sakhi, or chief legal friend.
- The Mukhya Nyaya Sakhi will be chosen from among the Nyaya Sakhis.
- The tenure of the Mukhya Nyaya Sakhi will generally be six months, after which a new one will be selected.

#### Parivarik Mahila Lok Adalats(PMLA) – Case Study

- Nari Adalats takes inspiration from the Parivarik Mahila Lok Adalats(PMLA), which were run by the National Commission for Women until 2014-15.
- PMLA dealt with family affairs, matrimonial disputes, bigamy, succession, and other women issues.
- The NGOs in association with District Legal Aid and Advisory Boards, activists, advocates and other stakeholders, used to organize PMLAs.
- A total of 298 such Adalats were held until the scheme was discontinued in 2014-15.

**Nut Graf:** As part of the Mission Shakti program, the Government has started the Nari Adalats as an alternate dispute resolution mechanism with focus on women empowerment and access to legal services.

## 4. Forest (Conservation) Amendment Bill

**Syllabus:** Government policies, transparency and accountability

**Mains:** Government policies and interventions aimed at development in various sectors

**Prelims:** Indian Polity and Governance

#### Context:

A parliamentary committee has endorsed the Forest (Conservation) Amendment Bill, which seeks to amend the 1980 law to protect India's forest land from unauthorised non-forestry activities.

#### Introduction:

- A parliamentary committee examining proposed amendments to the Forest (Conservation) Act, 1980, has endorsed the amendment Bill in its entirety.
- The committee's draft report is expected to be tabled in Parliament during the Monsoon Session starting on July 20.

#### Analysis of the Bill:

- The Forest (Conservation) Amendment Bill, 2023, aims to amend the 1980 law to safeguard forest land from unauthorised non-forestry activities.
- The joint committee analysed the Bill clause by clause and sought input from various stakeholders.
- Objections were raised, claiming that the proposed amendments diluted the Supreme Court's 1996 judgement in the Godavarman case, which extended protection to non-classified forest areas.
- In order to expedite important national initiatives relating to strategy and security, it exempts some types of lands from its coverage.

- The measure will also remove the protection and status of forests from tree plantations on private properties and woods that are next to government-maintained public roads or rail lines.
- The “non-forest purpose” exclusions under Section 2 of the Forest (Conservation) Amendment are also proposed to be redefined by the amendment bill.

### Need for the Amendment

- According to the Forest Survey of India's biennial reports, India's forest cover has barely slightly increased.
- Within legally recognised forests, the amount of forest growth is stable or at most incremental.
- The increase in tree cover in orchards, plantations, and rural homesteads supports India's assertion that 24% of its land is covered with trees and forests.
- As part of its international climate commitments, India has promised to raise this percentage to 33% and add a carbon sink that will absorb 2.5 billion to 3 billion tonnes of CO<sub>2</sub> in this way by 2030.
- As private agroforestry and tree plantation activities were not encouraged by the existing Forest (Conservation) Act, 1980, it was insufficient for achieving these goals.

### Controversial Amendments:

- Exemption from forest clearance for construction projects within 100 km of International Borders or the Line of Control was considered “deeply problematic.”
- Proposed name change of the law to Van (Sanrakshan Evam Samvardhan) Adhiniyam received objections for being non-inclusive.
- The Environment Ministry defended the name change, emphasising the need to augment forests and clarifying that forest conservation involves more than clearances.
- These changes actually encourage afforestation for commercial purposes rather than helping to regenerate natural forests.
- Environmental specialists worry that destroying these forests without an assessment and a mitigation plan may endanger the region's biodiversity because the bill exempted some forest properties from the FCA.
- The forest cover and wildlife in the northeastern states may be negatively impacted by exempting land near border areas for national security projects.
- A general exemption for initiatives like zoos, eco-tourism facilities, and reconnaissance surveys could have a negative impact on wildlife and forest land.

### Amendments' Objectives:

- The amendments aim to remove ambiguities and provide clarity about the Act's applicability to different lands.
- Specific provisions encourage cultivating plantations on non-forest land to increase tree cover and act as a carbon sink.
- The amendments also remove restrictions on creating infrastructure for national security and livelihood opportunities near forests.

### Supreme court Judgment

- In the Godavarman Thirumulpad case, the Supreme Court increased the extent of such protection in 1996.
- Even locations that were not officially designated as “forests” but met the “dictionary” definition of forests were protected under it.
- The Thirumulpad judgment instructed States to identify and demarcate forests using their own criteria because there is no universal definition of what constitutes a “forest.”
- The extent to which the judgment aided forest protection has not been hotly contested in all States.

### India's Forest policy

- According to India's 1988 forest policy, a third of the nation's land must be covered in forests.
- If one takes into account tree cover outside of regions under registered forest, plantations, and orchards, the percentage drops to roughly 24%. Realistically, only 21% of the land is under such cover.
- According to the Environment Ministry, the Act needed to be amended in order to solve this latter problem.

### About the Amendments

- The Act has undergone significant revisions, including the addition of a “preamble” that highlights India's commitment to protecting forests, their biodiversity, and addressing issues related to climate change.
- According to the revisions, the Act would only be applicable to lands designated as “forest” in any government record on or after 1980.
- According to the Environment Ministry, these changes were required because private parties were being discouraged from restoring tree areas or creating plantations in degraded forests.

**Objections to the changes**

- Significant forests in the Himalayan, trans-Himalayan, and northeastern regions may suffer as a result of the exemptions, according to the main arguments against them.
- Other criticisms include limiting the legislation's application to only those areas designated as woods.
- Experts who were asked to testify before the committee raised certain concerns, claiming that the Act weakens the Godavarman ruling.
- According to a few State governments, forest protection is a matter for both the Centre and States, making it a Concurrent List item. The revisions tipped the scales in the Center's favor.

**Environment Ministry Response**

- The Environment Ministry has provided the Committee with thorough justifications in an effort to allay worries.
- It adds that the Godavarman ruling is not affected by the new modifications and that safeguards have been put in place to prevent "misuse" of the land.

**Public Opposition:**

- The draft amendments were made available for public comment since June 2022, leading to opposition from various quarters.
- Northeastern states expressed concerns about unilateral taking away of forest land for defence purposes.
- Environmental groups opposed the removal of central protection from deemed forests, potentially compromising their integrity.

**Referral to Joint Committee:**

- The Lok Sabha referred the Bill to a Joint Committee, with objections raised by Jairam Ramesh MP.
- The decision to refer the Bill to a Joint Committee instead of the Standing Committee drew criticism.

**Nut Graf:** *The parliamentary committee examining the Forest (Conservation) Amendment Bill has endorsed the proposed amendments, despite objections raised regarding dilution of forest protection and concerns about unilateral land acquisition for defence purposes.*

**5. Report highlights impact of pandemic on education**

**Syllabus:** Issues relating to development and management of Social Sector/Services

**Mains:** Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** About Performance Grading Index for Districts

**Context:**

The Ministry of Education's report on the Performance Grading Index for Districts (PGID) reveals a decline in educational performance in many districts due to the pandemic.

**Introduction:**

- A report from the Education Ministry reveals a decline in the educational performance of many districts in the country due to the pandemic.
- The Performance Grading Index for Districts (PGID) assesses the school education system's performance at the district level.

**Grading Categories:**

- The report categorises districts into 10 grades based on their performance.
- Grades from highest to lowest: Daksh, Utkarsh, Ati-Uttam, Uttam, Prachesta-1, Prachesta-2, Prachesta-3, Akanshi-1, Akanshi-2, and Akanshi-3.

**Impact of the Pandemic:**

- None of the districts achieved the highest grades (Daksh and Utkarsh) in the latest report.
- The number of districts graded as Ati-Uttam decreased from 121 in 2020-21 to 51 in 2021-22.
- The number of districts under Prachesta-2 increased from 86 in 2020-21 to 117 in 2021-22.

**Examples of Districts:**

- Chandigarh, Delhi, Gujarat, Maharashtra (Satara, Kolhapur, Nashik, Mumbai), and Kolkata achieved Ati-Uttam status.
- Tamil Nadu has several districts in the Uttam grade and three districts in Prachesta-1.
- Uttar Pradesh has districts under Uttam, Prachesta-1, and Prachesta-2.
- Most districts in Jammu and Kashmir fall under Prachesta-1 and Prachesta-2.
- South Salmara-Mankachar district in Assam was the only district under Akanshi-1 for 2021-22.

**Importance of the PGID Report:**

- The report helps State education departments identify gaps at the district level and improve performance.
- It provides indicator-wise PGI scores to highlight areas requiring improvement.
- The PGI-D structure includes six categories and 12 domains to assess various aspects of the education system.

**Nut Graf:** The PGID report assesses the performance of the school education system at the district level, categorising districts into grades. The report highlights the impact of the pandemic on educational performance and aims to help districts identify areas for improvement and prioritise interventions.

**6. SC asks ED chief to quit**

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation

**Mains:** Issues relating to governance, transparency, and accountability; Role of civil services in a democracy

**Prelims:** About Enforcement Directorate

**Context:**

The Supreme Court has directed the Enforcement Directorate (ED) Director to resign four months before his third extension ends while upholding amendments allowing extensions for CBI and ED Directors.

**Introduction:**

- The Supreme Court has directed the Enforcement Directorate (ED) Director, Sanjay Kumar Mishra, to resign four months before his third extension ends in November.
- The court has upheld statutory amendments allowing extensions for Directors of the Central Bureau of Investigation (CBI) and the ED, despite concerns.

**Invalid Extensions and Time to Quit:**

- The court declared the back-to-back extensions given to Mr. Mishra in 2021 and 2022 as invalid and illegal.
- However, the court granted Mr. Mishra time until July 31 to step down to ensure a smooth transition of responsibilities to his successor.

**Upholding the Amendments:**

- The court upheld the amendments introduced in 2021 to the Central Vigilance Commission Act, the Delhi Special Police Establishment Act, and the Fundamental Rules.
- These amendments allow for three annual extensions to the tenures of CBI and ED Directors.
- The court disagreed with the submissions made by its amicus curiae, who urged the court to strike down the amendments.

**High-Level Committees and Trust:**

- The 2021 amendments require high-level committees, composed of the Central Vigilance Commissioner and Vigilance Commissioners, to recommend officers for service extensions.
- The court reasoned that if the same committees were trusted with the initial appointments of ED and CBI Directors, they could be relied upon to advise the government on extensions.

**Enacted Amendments and Judicial Prudence:**

- The court highlighted that the 2021 amendments were enacted by Parliament and passed by elected representatives.
- It stated that the court cannot question the wisdom of the elected representatives in enacting the amendments.

**Nut Graf:** The Supreme Court has declared the back-to-back extensions given to the ED Director as invalid, granting him time to quit, while upholding amendments facilitating extended tenures for CBI and ED Directors.

**7. Legal dispute between farmers & Pepsico**

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation

**Mains:** Issues relating to intellectual property rights

**Prelims:** About Intellectual property rights

**Context:**

The Delhi High Court rejects PepsiCo's appeal over patent rights for its 'unique potato' variety, revoking its registration.



**Introduction:**

- The Delhi High Court dismissed PepsiCo's appeal against the revocation of its patent rights for the 'FL 2027' potato variety.
- The Protection of Plant Varieties and Farmers Rights' Authority (PPVFRA) had revoked PepsiCo's registration of the unique potato variety.

**Background of the Case:**

- The PPVFRA revoked PepsiCo's registration of the potato plant variety 'FL 2027,' used in Lay's chips, under Section 34 of the Protection of Plant Varieties and Farmers Rights Act, 2001.
- FL 2027 is a 'chipping potato' variety with specific characteristics suitable for chip manufacturing.
- PepsiCo claimed that the variety was developed by Robert W. Hoopes, a former employee of Frito-Lay Agricultural Research.
- Kavitha Kurungati, a farmers' rights activist, filed an application leading to the revocation of PepsiCo's registration.

**The Protection of Plant Varieties and Farmers Rights Act:**

- The PPV&FR Act promotes the conservation and development of plant varieties, safeguarding the rights of breeders, researchers, and farmers.
- It supports agricultural development and the availability of high-quality seeds and planting materials.

**Grounds for Revocation:**

- Section 34 of the PPV&FR Act lists various grounds for revocation, including incorrect information, registration granted to an ineligible person, failure to comply with required documents, and non-compliance with regulations and directions.

**Court's Rejection of the Appeal:**

- PepsiCo had erroneously classified FL 2027 as a "new variant" instead of an "extant variant" in its registration application.
- The court found that FL 2027 did not meet the novelty requirement for a "new variant" registration and could only be registered as an "extant variety."

**Implications and Considerations:**

- India's agricultural sector plays a crucial role in the economy and employs a significant workforce.
- Multinational food processing companies and investors must prioritise farmer welfare and understand local laws, particularly the PPV&FR Act, to ensure compliance and respect for farmers' rights and safeguards.
- Recognizing the safeguards and protections provided by the Act is crucial for responsible engagement in the agriculture sector.

**Nut Graf:** The Protection of Plant Varieties and Farmers Rights' Authority (PPVFRA) revoked PepsiCo's registration for its potato plant variety, leading to the dismissal of the company's appeal by the Delhi High Court. The decision highlights the importance of understanding local laws and prioritizing farmers' rights in India's agriculture sector.

## 8. Partial app bans

**Syllabus:** Government policies and interventions, and issues arising out of their design and implementation. Statutory, regulatory and various quasi-judicial bodies.

**Mains:** Issues relating to governance, transparency, and accountability. Statutory body

**Prelims:** About TRAI

**Context:**

The Telecom Regulatory Authority of India (TRAI) is exploring the possibility of implementing "selective" app bans instead of complete internet shutdowns in order to minimise the negative impact on communication during tense periods.

**Introduction:**

- The Telecom Regulatory Authority of India (TRAI) has sought inputs on the feasibility of implementing "selective" app bans instead of complete internet shutdowns.
- Internet shutdowns are frequently imposed in various states and districts in India to control the dissemination of provocative content during periods of communal tension.
- TRAI's objective is to minimise the adverse effects of widespread communication lockdowns while maintaining law and order.

### India's History of Internet Shutdowns:

- Internet shutdowns have been considered a legitimate tool by the Indian government to maintain law and order.
- These shutdowns can be prolonged, causing difficulties in accessing education, work, banking, and information.
- Authorities and courts in Jammu and Kashmir and Manipur have gradually eased long-term restrictions by permitting wired and limited wireless internet access.

### TRAI's Proposed Approach:

- TRAI's suggested approach involves cooperation between telecom operators and messaging app firms, such as WhatsApp, to suspend services during a shutdown.
- Inputs are being sought on licensing messaging apps, potentially subjecting firms to surveillance and blocking requirements.

### TRAI's Previous Consideration of App Regulation:

- In 2015 and 2018, TRAI held consultations on regulating messaging apps, leading to net neutrality protections.
- Telecom operators called for regulation, citing concerns about security, surveillance, and revenue loss due to online calls and messages.
- Since 2016, the DoT and TRAI have rejected the argument for regulation, emphasising non-discrimination between categories of consumer data.
- The focus on regulating messaging apps has shifted toward security and policing, aiming to combat misinformation and provocative content.

### Challenges with VPNs:

- Virtual Private Networks (VPNs) enable users to bypass website and app blocks imposed by telecom operators.
- VPNs encrypt internet traffic and route it through servers located in other countries, making it challenging for the government to monitor connections.
- The government views VPNs with growing suspicion due to concerns about privacy, terrorism, and cybercrime.

### VPNs and Indian Regulations:

- The Indian Computer Emergency Response Team (CERT-in) issued directions in 2022 requiring VPN firms to retain user records, prompting some providers to stop offering servers physically located in India.
- Despite this, VPNs continue to serve Indian users, allowing them to access blocked sites via encrypted connections to foreign servers.

### The Difficulty of Blocking VPNs:

- Blocking VPNs is not straightforward due to frequent IP address changes by VPN service providers.
- While the websites of VPN services can be blocked, installation files can still be found elsewhere online.
- Telecom operators have stated that blocking VPNs is technically unfeasible.

### Debates Surrounding VPN Blocking:

- Internet rights activists argue that blocking VPNs would harm online privacy, as they play a crucial role in securing digital rights for journalists, whistleblowers, and activists.
- VPNs protect confidential information, safeguard user identities, and provide defense against surveillance and censorship.

**Nut Graf:** TRAI seeks input on using targeted app bans as an alternative to internet shutdowns in India, aiming to reduce the impact of wholesale communication lockdowns while maintaining law and order during communal tensions.

## 9. India's conglomerates are getting too big for comfort

**Syllabus:** Government policies, transparency and accountability

**Mains:** India's conglomerates and State interference

### Context:

- The Adani Group is able to convince financial markets to extend more credit to it as it continues to make acquisitions.
- In order to create a new company, Reliance Industries Limited has announced the demerger of its financial services division.
- The Tata group and the Aditya Birla empire appear to be performing well, among other corporate organisations.

### Concerns:

- Rapid industrial concentration growth encourages excessive wealth and income inequality by inflating profits or profiteering.
- It sparks attempts to sway democratic institutions and weakens the role that civil society can play as a countervailing force.
- It results in excessive corporate influence on political decisions and policy making, with tendencies like state capture.

- Governments in democracies have fought valiantly to keep a certain distance from private capital in general and big business in particular.
- In certain historical situations, their attempts have had some degree of success, resulting, among other things, in forceful action against monopoly and trustification.

#### Trends that have signalled narrowing of political distance between the state and big business

- **Acceptance of neoliberalism:** This implies acceptance of the viewpoint that the state's purpose is to support private capital's growth rather than regulate it as a method of achieving overall economic improvement. In fact, proponents of neoliberalism contend that concentration will be resisted by the competition that a liberalised system will promote.
- **Impact of state policies:** State policy, diplomacy, and public resources, particularly those routed through public banks, have to be used as tools for this aim. While market liberalisation exposed much of Indian companies to international competition, governmental intervention was changed to safeguard and support some sectors of big business.
- **Refusal to decrease the role of money in politics:** In the end, political parties' ties to big industry have proven to be a must for obtaining the funds required to "manage" elections and win support from the electorate. Policy has evolved over time to make business contributions to political parties acceptable, including through the infamous electoral bonds system.

#### Way Forward

The state must carry out the necessary policies, and its nature shouldn't be independent of the influence that societal structures have. This should have sparked widespread dissatisfaction and discontent under normal conditions. State power is being utilised to repress any such dissent under the guise of national interest. The end outcome is an almost unrelenting march towards enormous wealth and power concentration.

**Nut Graf:** *The state actively supports a few business groupings in the guise of strengthening Indian enterprise and promoting national interest.*

### 10. 40% of districts do not have nursing colleges, Health Ministry data show

**Syllabus:** Issues relating to development and management of Social Sector/Services relating to Health.

**Mains:** Challenges in the healthcare sector, availability of healthcare institutions in various districts, and measures to improve healthcare infrastructure.

#### Context:

Health Ministry data reveals regional disparities in nursing education and services in India, with 40% of districts lacking nursing colleges.

#### Introduction:

- Health Ministry data reveals regional disparities in nursing education and services in India.
- 40% of districts lack nursing colleges, and there is a concentration of institutions in certain states.
- The Central government has introduced a scheme to establish new nursing colleges and provide short-term training.

#### Regional Disparities in Nursing Education:

- **Geographic Concentration:**
  - 42% of nursing institutions are concentrated in five southern states namely Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Telangana.
  - Three western states have 17% of nursing institutions, and northeastern states have only 2% representation.
- **Underutilization of Scheme:**
  - Some states have underutilised the scheme to establish new nursing colleges.
  - States like Kerala, Manipur, Delhi and Mizoram have benefited from the short-term training scheme, but Uttar Pradesh, Karnataka, and Telangana have underutilised the opportunity.

#### Nurse-to-Population Ratio and Global Comparison:

- India's nurse-to-population ratio is 2.06:1000, falling short of the global benchmark of 3:1000.
- The global shortage of health workers, with nurses and midwives, is affected the most.

#### Central Government's Scheme and Concerns:

- **Scheme Funding:**
  - The Central government has allocated ₹10 crore per college to establish 157 new nursing colleges co-located with medical colleges. This initiative aims to expedite nursing education and services across the country.
- **Monitoring and Progress:**
  - States are advised to send proposals for establishing nursing colleges and create state-level monitoring committees to ensure the timely completion of the project.
- **Poor Uptake:**
  - The Centre has expressed concerns over the underutilization of the Development of Nursing Services scheme in some states, indicating a need for greater participation and engagement in the initiative.

**Conclusion:**

- Urgent measures are needed to address regional disparities in nursing education and services.
- Co-locating nursing colleges and providing training can bridge the gap in the nursing workforce.
- State governments must actively participate to enhance healthcare delivery and meet the growing demand for skilled healthcare professionals.

**Nut Graf:** India's nurse-to-population ratio falls short of the global benchmark. The Central government aims to address the issue by establishing new nursing colleges and providing training, but concerns remain over poor utilisation in some states.

**11. India's data protection law needs refinement**

**Syllabus:** E-governance- applications, Government Policies and Interventions for Development in various sectors

**Mains:** Critical analysis of data protection bill in protecting citizen's rights in the digital era

**Context:** The government plans to table the data protection bill during this monsoon session of Parliament.

**The Draft Bill:**

- **India's Data Protection Law:** India is in the process of formulating a data protection law for its vast population of over 1.4 billion individuals. The European Union's General Data Protection Regulation (GDPR) served as a model for comprehensive data privacy laws worldwide, but it also faced implementation challenges, raising concerns about the effectiveness of India's forthcoming law.
- **The Digital Personal Data Protection (DPDP) Bill, 2022:** The Indian government released the DPDP Bill for public consultation, marking its third attempt at drafting a data protection law. While this version is not as comprehensive as previous ones, it is expected to bear similarities to the draft presented earlier.
- **Scope of the DPDP Bill:** The DPDP Bill focuses solely on protecting personal data, which is information that can directly or indirectly identify an individual. However, it does not adequately address the risks associated with combining non-personal data with other datasets to re-identify individuals, impacting user privacy.

**Issues with the Bill:**

- **Inadequate Protection of Non-Personal Data:** The DPDP Bill fails to address the potential risks arising from the re-identification of non-personal data as personal data. Entities in the data economy often use both personal and non-personal data to target, profile, and monitor users. The combination of non-personal data with other information can inadvertently lead to the identification of individuals, posing significant privacy risks.
- **Limited Reach of the Data Protection Board:** The proposed data protection board, responsible for enforcing the law, lacks the power to initiate proceedings on its own. It can only take action when someone affected files a complaint, or if directed to do so by the government or a court. This limitation places users at a disadvantage, as they have limited control and knowledge over data transfers and exchanges, while entities possess greater resources and leverage.

**Possible Solutions:**

- **Expanding Scope for Non-Personal Data Protection:** To enhance the DPDP Bill's effectiveness, it is essential to recognize the risks posed by the re-identification of non-personal data. By adding a penal provision that imposes financial penalties on data-processing entities for re-identifying non-personal data into personal data, the legislation can provide more meaningful privacy protection to Indian citizens.
- **Empowering the Data Protection Board:** To address the inherent imbalance in the data economy, the data protection board should have the authority to initiate proceedings on its own accord, rather than relying solely on complaints from affected individuals. This approach would allow the board to take action against data-processing entities that violate user rights on behalf of all affected users, similar to the Competition Commission of India's enforcement approach.

**Impact of Digital Personal Data Protection Bill on Right to Information**

- The proposed Digital Personal Data Protection Bill contains provisions that will significantly curtail the right to information for Indian citizens.
- The Right To Information Act's Section 8(1)(j) will be changed by the proposed Data Protection Bill to read as exempting information under (j), which relates to personal information.
- All information that can be attributed to a person could be legally denied if this amendment is approved.
- The term "person" is used quite broadly throughout the proposed Bill to refer to people, businesses, and the state.
- Most data would be connected to one of these, with the exception of budgets. As a result, the RTI would turn into a Right to Deny Information, making it a useless tool.

### RTI and Refusal of Information

- Right To Information acknowledges that each citizen has the right to access practically all of the information held by the government by default.
- The most frequently misunderstood exemption is Section 8(1)(j), which exempts personal information that does not relate to a public activity or that violates an individual's privacy.
- According to the law, personal information may be excluded if it: is unrelated to a public activity or interest; or would result in an unjustified breach of an individual's privacy.
- Many information requests were turned down with the bland justification that they would not provide the information because it was personal information, in violation of the law. Although prohibited, this has been frequently used to justify arbitrary, dishonest, or unlawful actions by government employees.

### Conclusion

Democracy demands informed citizens and transparency in the business of their government so that they can hold it accountable and fight corruption. It balances the requirement for an effective government with the preservation of democratic ideals.

One of the best transparency laws in the world, the Indian Right to Information (RTI) Act gives citizens more power and formally acknowledges their status as India's owners and rulers. Refining India's data protection law by addressing the scope of protection and empowering the data protection board would play a crucial role in ensuring its successful implementation and creating more future-proof legislation.

**Nut Graf:** *The attempt to modify the RTI Act in the proposed Digital Personal Data Protection Bill will significantly weaken the freedom to access information for Indian citizens and will result in a significant retreat for democracy. During the ongoing monsoon session, the Indian government is set to present a data protection bill. As the bill's scope and the data protection board's limited powers raise concerns, proposed solutions seek to bolster its impact in safeguarding user privacy and addressing implementation challenges.*

## 12. Is there a rural bias in national surveys?

**Syllabus:** GS-2; Government policies, transparency and accountability

**Mains:** National Surveys and Rural Bias

### Context:

The Government of India recently appointed a panel to review the methodology of the National Statistical Organisation (NSO).

### Need for Review:

- **Arguments in Favour:** Many experts contend that national surveys like the National Sample Survey (NSS), National Family Health Survey (NFHS), and Periodic Labour Force Survey (PLFS) use out-of-date survey methodologies.
- **Arguments Against:** According to some experts, these national surveys do not systematically underestimate development. Because some development narratives do not fit with the survey technique, there is no need to restructure and redesign it. They acknowledge, however, that mistakes could happen and should be avoided. They also support the use of suitable sample weights to properly reflect the nation through the national sample.

### NFHS Survey and Rural Bias

- "Rural bias in terms of representation" is one of the ways that national surveys like the NFHS underestimate Indian development.
- In other words, the survey's methodology, which mainly relies on data from the most recent Census, routinely overestimates the population in rural areas.
- The analysis of five rounds of NFHS data, however, does not reveal any such overrepresentation of rural areas.
- There is no indication of any systematic rural bias, according to the NFHS estimates of the urban population and the related World Bank estimates.
- On the other hand, there is evidence that the NFHS-3 underestimated the population of rural areas.
- By NFHS-2 and NFHS-5, the population of rural areas appears to have been overestimated.
- On the basis of Census data, only the NFHS-1 and NFHS-4 estimations appear to be particularly close to World Bank estimates and projections. But rather than being systematic, these mistakes seem arbitrary.

### Way Forward

- National-level data is an important source for research, policymaking, and development planning.
- In order to ensure that the sample is appropriately representative, the Pronab Sen Committee should address these issues rather than completely changing the survey's methodology.
- The reduction of mistakes and the method used to determine sample weights both appear to have space for improvement.
- A quick peek at the percentages of the urban sample in the unweighted sample shows that applying the right weights could greatly aid in correcting the inaccuracies.



- Underrepresentation of either rural or urban populations appears to be greatly reduced if the sample weights are properly chosen, after accounting for all potential sources of error.
- Let's avoid introducing systemic urban bias, which is pervasive in policymaking, planning, and financing, to national-level surveys in the name of eliminating systematic rural bias in survey methods, which doesn't seem to exist in the first place.

**Nut Graf:** Understanding and analysing claims of a rural bias in national surveys in the context of the available evidence is crucial since data from such surveys are crucial resources for research, policymaking, and development planning.

### 13. Lok Sabha passes the contentious biodiversity bill

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation.

**Mains:** Significance of the biodiversity bill

**Prelims:** About Biodiversity and the Biodiversity bill

#### Context:

The Lok Sabha has passed the Biological Diversity (Amendment) Bill, 2021, to amend the Biological Diversity Act, 2002. The Bill aims to address concerns raised by traditional medicine practitioners and industry about compliance burdens and promote Ayurveda.

#### Introduction

- The Lok Sabha passed the Biological Diversity (Amendment) Bill, 2021.
- The Bill aims to amend the existing Biological Diversity Act of 2002.

#### Purpose of the Amendments

- The purpose of the amendments is to guarantee that tribes and vulnerable communities derive benefits from the revenue generated by medicinal forest products, while also fostering the growth of Ayurveda and facilitating business operations.
- Complaints from traditional Indian medicine practitioners, the seed sector, industry, and researchers led to the recognition of a heavy "compliance burden" imposed by the Act.

#### Exemptions Introduced by the Amended Bill

- The revised Bill aims to grant exemptions to registered AYUSH medical practitioners and individuals accessing codified traditional knowledge, among others, from the obligation of providing prior intimation to State Biodiversity Boards when accessing biological resources for particular purposes.
- Environmental organisations, such as Legal Initiative for Forests and Environment (LIFE), have raised concerns that these exemptions would primarily benefit AYUSH firms and could pave the way for "biopiracy."

#### Decriminalization and Monetary Penalties

- The Bill decriminalises several offences under the Act and replaces them with monetary penalties.
- This move aims to make the implementation of the Act less punitive and encourage compliance.

#### Analysis of Implementation and Shortcomings

- A joint analysis by the Centre for Science and Environment and Down To Earth magazine reveals significant shortcomings in the practical implementation of the Biodiversity Act.
- There is a lack of data, except in a few states, regarding the money received from companies and traders for accessing traditional knowledge and resources and sharing benefits.

#### Parliamentary Committee Review

- A Joint Parliamentary Committee was constituted in December 2021 to analyse the amendment Bill.
- Some of the members of this committee expressed concerns that the exemptions introduced in the Bill could potentially lead to abuse of the law.

**Nut Graf:** The Lok Sabha passed the Biological Diversity (Amendment) Bill, 2021, seeking to amend the Biological Diversity Act, 2002. The amendments aim to address compliance burdens, benefit traditional medicine practitioners, and promote Ayurveda, but environmental organisations and opposition members have raised concerns over potential bio-piracy and misuse.

#### 14. Rap on the knuckles

**Syllabus:** Government policies and interventions aimed at development of vulnerable sections of the societies.

**Mains:** Mechanisms, laws, institutions and bodies constituted for the protection and betterment of the vulnerable sections of the society.

**Context:**

The Supreme Court has expressed concern over the failure of the Union Government and several State governments to address mob violence and lynching against marginalized sections by “cow vigilantes” over the past five years.

**Supreme Court's Concerns**

- The Supreme Court expresses disappointment at the Union Government and several State governments for their consistent failure to take action against lynching and mob violence, especially marginalized communities by “cow vigilantes.”
- The National Federation of Indian Women's petition highlights the government's inaction in dealing with such incidents.

**Court's Previous Ruling**

- In the 2018 case of Tehseen S. Poonawalla vs Union of India, the Supreme Court deemed it the state's “sacrosanct duty” to protect citizens' lives and prevent vigilantism of any form.
- The Court issued guidelines, including appointing nodal officers in each district to coordinate efforts against mob violence and lynching with the help of police intelligence and other government agencies.

**Continuing Menace**

- Despite the Court's guidelines, lynching, mob violence, and “cow vigilantism” still occur, especially in north India, due to the nonchalance of the Union government and the mentioned States.
- The ideology of certain parties that stereotypes and demonises minorities contributes to the problem.
- Social and economic boycotts of minority communities persist in states with political patronage.

**Government Accountability**

- The Court's orders hold the concerned state agencies accountable for the non-implementation of the 2018 judgement's guidelines.
- However, addressing the menace of mob violence requires concerted civil society action, promoting fraternal relations with other communities, and avoiding type casting them as the “other.”
- In states like Tamil Nadu, with a history of secular and rational movements, such incidents are rare, and dominant political representatives face civil society outrage if they occur.

**The Need for Civil Society Involvement**

- Judicial fiat alone is insufficient to prevent atrocities caused by mob violence on ordinary citizens.
- Tackling this issue demands proactive involvement from civil society to sensitise people about peaceful coexistence and respect for other communities.

**Nut Graf:** The Supreme Court's recent reminder to the Union Government and several State governments highlights their consistent failure in combating mob violence and lynching against minorities by “cow vigilantes.” Despite previous guidelines, little action has been taken, requiring concerted civil society efforts to tackle the menace effectively.

# DISASTER MANAGEMENT

## 1. North India floods & landslides

**Syllabus:** GS-3, Disaster and disaster management.

**Prelims:** Floods & landslides

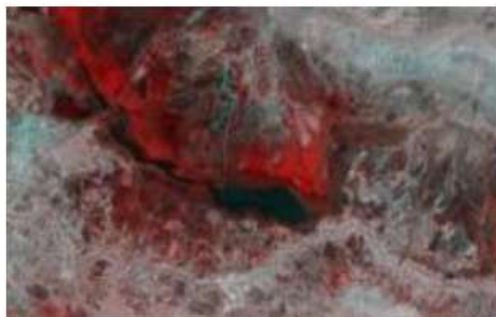
**Context:** Massive floods & landslides in Himachal Pradesh, Uttarakhand, Delhi-NCR region, Punjab. Several reported deaths & injuries. Severe damage to key public infrastructure.

### Meteorological Hazard Triggering Hydrological Hazards

- Heavy rains, which is a Extreme Weather Event could lead to secondary & tertiary disasters such as – Flash Floods & Landslides.

## Hydrological

Flood

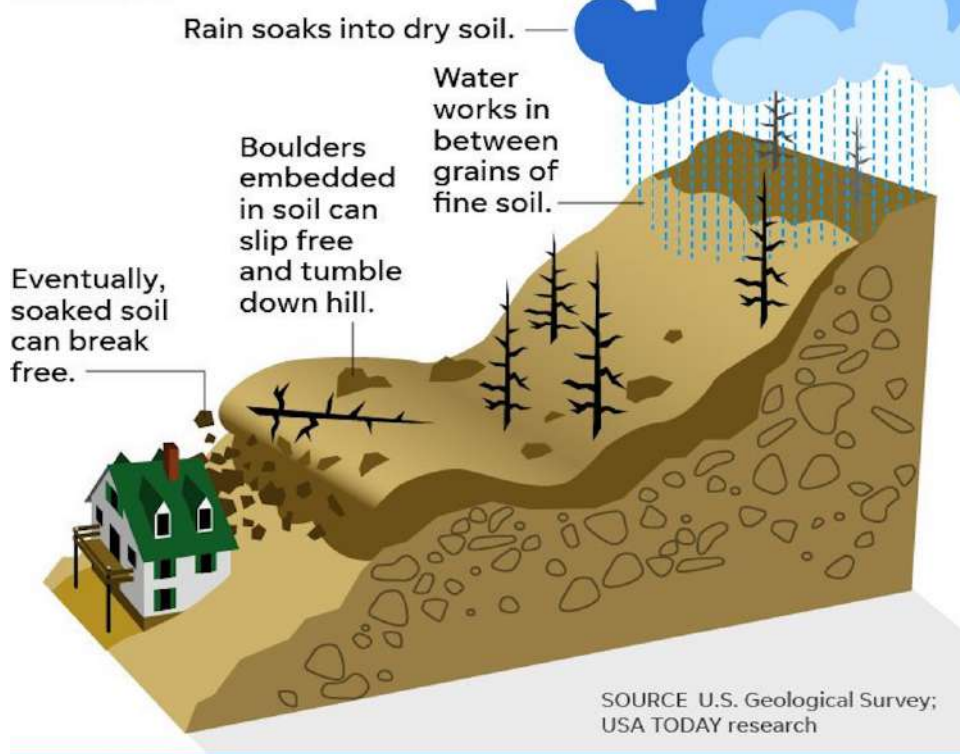


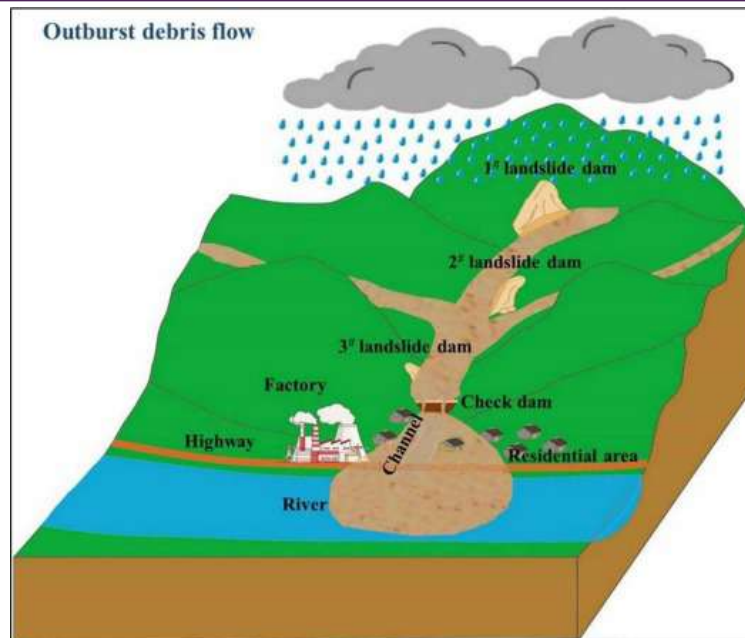
Landslide



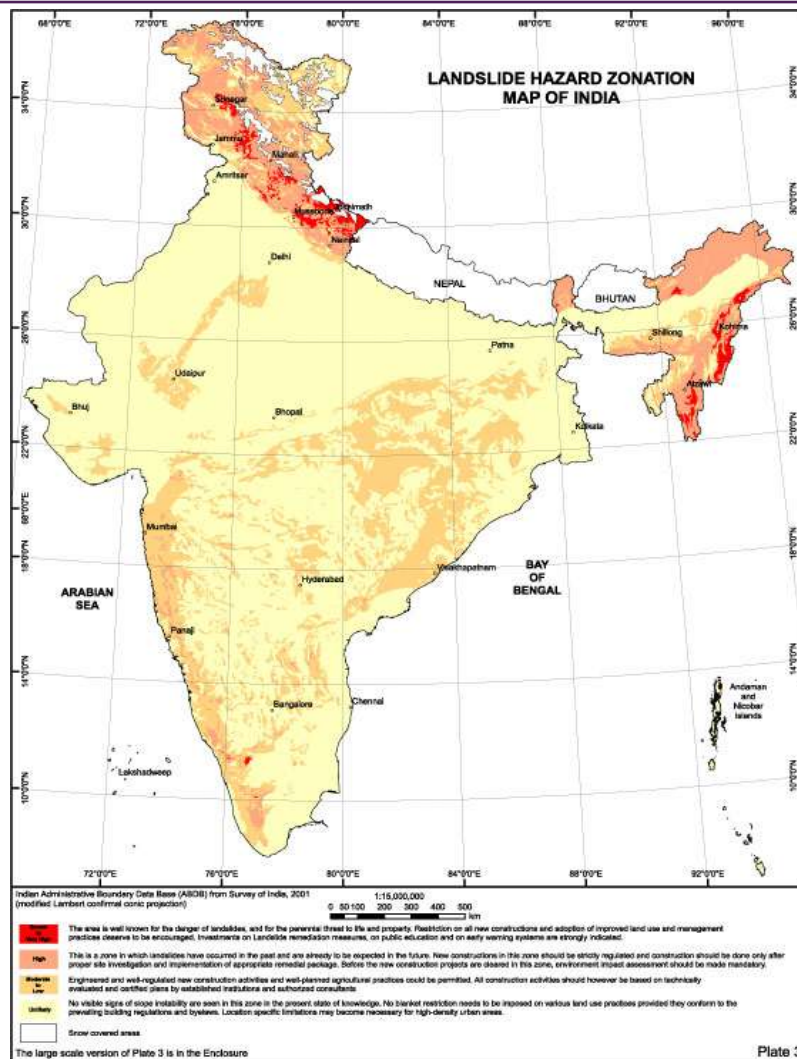
### Anatomy of a mudslide

How heavy rain can cause mud- and rockslides:









### Flood Disaster Management

- Flood risk analysis
- Flood forecasting
- Reducing runoff
- Flood diversion
- Construction of embankments
- Flood plain zoning
- Conservation of natural buffers
- Risk transfer
- Integrated watershed management
- Post disaster management

### Disaster Risk Management - Landslides

- Early warning system
- Preparedness
- Landslide zonation map
- Land Use regulation
- Afforestation
- Structural & Non-structural measures



## 2. A big step in reducing the risk of disasters

**Syllabus:** Disaster Management (Laws, Acts, etc.)

**Mains:** Policies and measures for disaster risk reduction, recent developments in disaster management, laws and acts related to disaster management.

**Prelims:** About G20, Sendai Framework for Disaster Risk Reduction, and Disaster Risk Reduction

**Context:**

The world faces increasing disasters due to climate change. India's G20 presidency prioritises disaster risk reduction, aiming for concrete actions to protect lives and economies.

**The Need for Disaster Risk Reduction**

- Disasters around the world are becoming more frequent, including heatwaves, forest fires, floods, and pandemics like COVID-19.
- Countries have historically focused on response rather than prevention, leading to significant financial burden and loss of life.
- The Sendai Framework for Disaster Risk Reduction 2015-2030 aims to reduce disaster risks and losses globally.

**India's Initiative at G20**

- India has recognized the importance of disaster risk reduction and prioritised it during its G20 presidency.
- The establishment of the first G20 Disaster Risk Reduction Working Group demonstrates India's commitment to addressing disaster risks.
- G20 countries represent a significant portion of the global GDP and population, making them crucial in shaping disaster risk-informed decision-making.

**Priorities of G20 Disaster Risk Reduction Working Group**

- The G20 Disaster Risk Reduction Working Group has identified priorities to address disaster risks.
- Early warning systems, resilient infrastructure, and financing for disaster risk reduction are key areas of focus.

**Expanding Early Warning Systems**

- Inclusive and multi-hazard early warning systems are effective in reducing disaster deaths and economic losses.
- Adoption of disruptive technologies can improve forecasting and enhance early warning capabilities.
- The UN Secretary General's Early Warnings for All Initiative aims to achieve universal coverage by the end of 2027.

**Enhancing Resilient Infrastructure**

- Countries must assess and enhance the resilience of critical infrastructure to withstand climate and disaster risks.
- Resilient infrastructure is essential for recovery during crises and supports sustainable development outcomes.
- The Coalition for Disaster Resilient Infrastructure, launched by India and the UN, promotes policy development and capacity support for disaster-resilient infrastructure.

**Transforming Risk Reduction Plans into Concrete Actions**

- A new approach to financing disaster risk reduction is needed, involving finance and economy ministries and the private sector.
- G20 nations like Indonesia and India have used risk metrics to allocate resources for disaster risk reduction at sub-national and local levels.
- Scaling up ecosystem-based approaches and enhancing response capacities will be crucial in future G20 presidencies.

**Nut Graf:** India's G20 presidency emphasises disaster risk reduction, with a focus on early warning systems, resilient infrastructure, and innovative financing to protect people and promote sustainable development. The G20's collaborative efforts could significantly reduce disaster losses by 2030.

### 3. Himachal floods: a man-made disaster?

**Syllabus:** GS-3, Disaster and disaster management.

**Mains:** Anthropogenic Factors for increased Himalayan floods

**Context:**

Recently, flash floods have caused unprecedented damage to both lives and assets in Himachal Pradesh.

**Climate Change and Increased Rains:**

- The IPCC (Intergovernmental Panel on Climate Change) VI report clearly highlighted that climate change will have the greatest impact on India's Himalayas and the coastal regions.
- The combined impact of the southwest monsoon and western disturbances is thought to be responsible for the increased precipitation in the Himalayas.

**Anthropogenic Factors:**

- Anthropogenic factors have greatly contributed to the disaster in addition to climate change.
- The Dr. Parmar model, the state's development strategy, was successful in making Himachal Pradesh a role model for development in mountain states.
- Due to this, hydroelectric projects were built quickly, frequently harming rivers and their ecosystems, and farming practices were changed to focus on cash crops, which had an impact on the environment and river systems.
- **Hydropower Projects:**
  - The unregulated building of these hydropower facilities is a major factor in the region's disastrous flood effects.
  - The pursuit of hydroelectric projects, with their capacity quantified in terms of megawatts (MW) to attract investments, became a predominant priority for hill States.
  - The increase in hydropower development raises questions about the likelihood of looming calamities in the area.
- **Unprecedented Road Expansion:**
  - The purpose of the development-driven road expansion is to increase traffic and promote tourism. However, this has led to the neglect of crucial geological knowledge and mountain engineering abilities.
  - The mountains have been vertically cut in both the four-lane projects in Manali and Shimla, causing significant landslides and harm to the pre-existing roadways.
  - Such road expansions have negative effects that are obvious even during light rain because they increase the likelihood of slips and slides, which magnifies the damage caused by heavy rain or flooding.
- **Development of Cement Plants:**
  - Large-scale cement plant construction and widespread mountain-chopping in regions like Bilaspur, Solan, and Chamba have led to severe land use changes that exacerbate flash floods during rainy seasons.
  - The natural environment is changed by cement plants, and the loss of vegetation lowers the soil's ability to absorb water.

**Change in crop patterns**

- Agriculture and horticulture practices are undergoing a stealthy metamorphosis that will result in significant changes to both land ownership and output.
- A cash crop economy is currently being preferred by more farmers over conventional cereal production.
- However, due to their perishable nature, this move has repercussions for the quick transit of these commodities to markets.

**Way Forward**

- To give local communities more control over their resources, a new architecture is needed. It is necessary to make up for the losses suffered in the form of culverts, village drains, tiny bridges, schools, and other social infrastructure.
- The assets will be rebuilt more quickly as a result. To involve the key players and analyse both the shortcomings of the policy framework and the odd features of the projects undertaken, a commission of inquiry must be established.

**Nut Graf:** Humans should not exacerbate climate change; instead, they should make the necessary adjustments to infrastructure design to stop the tragedies that the mountainous regions have been experiencing.

# GEOGRAPHY

## 1. Anthropocene epoch

**Syllabus:** GS-1, Important Geographical phenomena

**Prelims:** Anthropocene epoch

**Context:** Earlier this week, scientists announced that sediments from Crawford Lake, located in Canada's Ontario, have provided evidence of the beginning of the Anthropocene epoch.

- It is a proposed geological epoch that began when the human impact started to radically alter the Earth's ecosystem and geology.
- The Anthropocene Working Group (AWG) has proposed that the Anthropocene began in 1950.

### What is the geological time scale?

The Earth's geological time scale is a fundamental tool used by geologists, palaeontologists and other scientists to study the planet's past. It is a system that divides the history of the Earth into discrete intervals of time, based on events, such as the evolution and extinction of different living beings and processes that have occurred.

It is divided into five broad categories: eons, eras, periods, and ages. As of now, at least officially, we're in the Phanerozoic eon, Cenozoic era, Quaternary period, Holocene epoch and the Meghalayan age.



- Geologists divide up the 4.6-billion-year existence of Earth into slices of time.
- Each slice corresponds to significant happenings - such as the break-up of continents, dramatic shifts in climate, and even the emergence of particular types of animals and plant life.
- We currently live in what is called the Holocene Epoch, which reflects everything that has happened over the past 11,700 years - since a dramatic warming kicked us out of the last ice age.

- But the Holocene itself can be subdivided, according to the International Commission on Stratigraphy (ICS). It is the official keeper of geologic time.
- The Meghalayan, the youngest stage, runs from 4,200 years ago to the present. It began with a destructive drought, whose effects lasted two centuries, and severely disrupted civilizations in Egypt, Greece, Syria, Palestine, Mesopotamia, the Indus Valley, and the Yangtze River Valley.

### What is the Anthropocene?

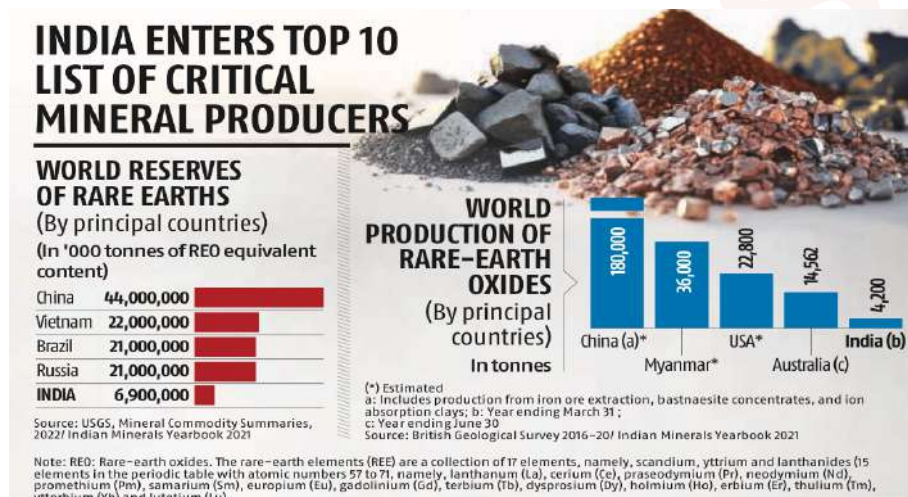
- The Anthropocene epoch as a term was first coined by Nobel Prize-winning chemist Paul Crutzen and biology professor Eugene Stoermer in 2000 to denote the present geological time interval, in which the Earth's ecosystem has gone through radical changes due to human impact, especially since the onset of the Industrial Revolution.
- There are numerous phenomena associated with this epoch, such as Global Warming, Sea-Level Rise, Ocean Acidification, mass-scale soil erosion, the advent of deadly Heat Waves, deterioration of the biosphere and other detrimental changes in the environment.

## 2. India publishes the first list of Critical Minerals

**Syllabus:** GS-1, Important Geographical resources

**Prelims:** Critical Minerals

**Context:** In a strategic move, the Centre has identified 30 critical minerals, including lithium, cobalt, nickel, graphite, tin and copper, which are essential for the country's economic development and national security.



Source: Business Standard

### India publishes the 1st list of critical minerals

- Critical minerals are those which may be short of supply and may have a larger impact on the economy compared to other raw materials
- Important countries
- **China**
  - Produces around 60% of the global Rare Earth Elements (REEs)
  - It has taken the lead in importing and processing critical minerals that it does not produce
- Australia produces 52% of the global lithium and China is major importer and processor of 58% of the global supply
- Argentina together with Chile and Bolivia for the Lithium Triangle and is currently the 4th largest and has third largest world reserve of lithium
- Indian govt in November 2022 had set up a committee to look into the of critical minerals - headed by Veena Kumari Dermal

### Demand for critical minerals in India would be rising

- Promotion of renewable energy
- Promotion of electric vehicles
- PLI in electronics etc

### Govt has released the list of 30 critical minerals- This is aimed at

- Reducing import dependence
- Enhancing supply chain resilience
- Support country's net zero objectives
- The ministry will be revising the list periodically

**Importance of this list**

- These are used in various industries such as high-tech electronics, telecommunications, transport, defence, renewable energy technology etc
- Lack of such a list has become a deterrent towards production of minerals
- The list will be acting as a guiding framework for policy formulation, strategic planning, investment decisions in the mining sector

**Issues**

- Lack of private sector participation
- Lags in utilisation of advanced technology

**Is India the first country to do so?**

- US has declared 50 minerals critical considering their role in national security and growth and development
- UK has classified 18 as critical minerals
- Canada has classified 31 as critical minerals

**Reforms**

- Is encouraging public and private investments in exploration, mining and processing facilities
- Facilitate adoption of advanced technologies and international collaborations
- KABIL (Khanij Bidesh Limited)
- Auctioning of lithium reserves
- Entry into Mineral Security Partnership (MSP)
- India and Australia have decided to jointly invest \$3 mn each for 5 critical mineral exploration projects in Australia

**3. Places in news: Mapping Locations**

**Syllabus:** GS-1, Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclones. etc., geographical features and their location – changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

**Prelims:** Places in news

**Belize:**

- Certified Malaria Free by WHO.
- Central American Nation.







**Egypt:** Prime Minister made an official visit and was awarded the highest civilian honour (the order of Nile)



#### 4. North India's monsoon mayhem

**Syllabus:** GS-1, Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclones. etc., geographical features and their location – changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

**Mains:** North India's monsoons and Impact of climate change

##### Background

- The monsoon season was delayed due to unexpected interactions between typhoons and cyclones.
- The development of Cyclone Biporjoy, which lingered above Mumbai for a longer period of time than usual, delayed the arrival of the monsoon.
- This resulted in an accentuated curve of the monsoon trough over northwest India.

##### Impact of climate change on Monsoon

- **Change in Weather Patterns:** Global warming now plays a role in every weather event. In addition, other variables can also alter weather patterns. Recent El Nino events have been making headlines, as wildfires have burned an area more than three times larger than usual and have released around three times as much carbon dioxide.
- **Atmosphere Instability:** Large-scale rainfall during the pre-monsoon season is not caused by the same atmospheric instabilities that cause convection. The Arabian Sea has warmed by around 1.5 degrees Celsius, which is consistent with the excess rainfall across northwest India.

- **Western Disturbances:** Due to a combination of the warm Arabian Sea and an abnormally high number of western disturbances, rainfall during this pre-monsoon was above average. Soils were left with higher levels of moisture than usual which had an impact on how the monsoon developed.
- **Uneven Rainfall:** Even when rainfall is averaged over a month, a season, or even several seasons, the distribution of rainfall is still uneven. The likely culprits include uneven topography and varied land-use patterns.
- **Upper Atmospheric Circulation:** The monsoon is affected by the Atlantic Ocean and the higher atmospheric circulation. In order to feed the upper-level outflow, strong clockwise winds in the upper atmosphere necessitate an anticlockwise circulation close to the surface. Excessive rainfall may result from such a convergence close to the surface.
- **Warming over the Himalayas:** The mountain range in some places is speeding up local warming by amplifying global warming. Due to the monsoon winds' expansion or compression as they rush up and down the short valleys, irregular weather patterns superimpose on these regional features.

### Conclusion

Even though every single weather occurrence occurs in a warmer and wetter environment, not everything can be directly attributed to global warming. Only more accurate forecasts with adequate spatial and temporal granularity will lessen the element of surprise brought on by these weather monsters.

**Nut Graf:** The delayed beginning of the monsoon has largely eliminated the deficit, although rainfall distribution remains patchy. Flash flood and landslide warnings have been issued for Himachal Pradesh and Uttarakhand due to the ongoing intense monsoon rains in North India that are inflicting destruction and fatalities.

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# INDIAN SOCIETY & SOCIAL ISSUES

## 1. Atal Vayo Abhyuday Yojana

**Syllabus:** Oldage, their problems and their remedies

**Prelims:** Atal Vayo Abhyuday Yojana

### About:

- Earlier the AVYAY, was known as National Action Plan for Senior Citizens (NAPSrc), which was revamped, renamed as Atal Vayo Abhyuday Yojana in April 2021.
- It is a Centrally Sponsored Scheme aimed at empowering senior citizens in India.
- It recognizes the invaluable contribution made by the elderly to society and seeks to ensure their well-being and social inclusion.
- By recognizing the invaluable contributions of the elderly to society, the government aims to empower and uplift them, ensuring their active participation and inclusion in all aspects of life.
- Financial criteria for beneficiaries are either the Senior Citizen belongs to 'Below Poverty Line' (BPL) category, or he/she has income up to Rs. 15,000 per month.

### Key Features:

- Under the umbrella Scheme, an Integrated Programme for Senior Citizens (IPSrC) provides financial assistance to eligible organization's for running and maintenance of Senior Citizen Homes/ Continuous Care Homes to improve the quality of life of the senior citizens, especially indigent senior citizens by providing basic amenities, entertainment opportunities and by encouraging productive and active ageing.
- Another component under the AVYAY Scheme is Rashtriya Vayoshri Yojana (RVY), to provide eligible senior citizens suffering from any of the age-related disability/infirmity, with assisted living devices which can restore near normalcy in their bodily functions, overcoming the disability/ infirmity manifested such as low vision, hearing impairment, loss of teeth and loco-motor disabilities.

## 2. The master plan and the Slaves

**Syllabus:** Urbanization, their problems and their remedies

**Mains:** Master Plan and its Significance And Challenges

**Context:** At a recent Urban-20 City Sherpas' meeting, India's G20 Sherpa emphasized the importance of having a master plan in place for any city to handle urbanization.

### About Master Plan and its Significance

- A master plan is a tool used by urban local bodies (ULBs) for governance. It has, very properly, recently drawn a lot of attention in national policy discussions.
- Revision of city master plans has been advised by the Ministry of Housing and Urban Affairs for better city governance.
- A master plan is just a spatial plan for distributing land uses that is backed by bylaws and development control rules. In essence, it represents a spatial vision for cities.
- The administrative structures, cultural norms, and practices of urban governance are all centered on the master plan vision. The objective of controlling spatial growth cultivates and shapes ULBs, who continue to be subject to these concepts.

### Concerns associated with Master Plan

- **Stress on Urban Governance:** Urban local authorities frequently experience a wide range of inabilities and tensions as a result of the master plan's requirements. These answers are frequently motivated by political expediency and short-term objectives.
- **Dependency:** Numerous efforts to increase infrastructure, social inclusion, and sanitation rely on specific schemes. The programming plans, particularly the ones that are physically related, like the plans for the preservation of water bodies, may be constrained by the legislative and spatial structure of the master plan.
- **Outdated Idea:** The master plan instrument is out of date because it was created using model laws created in the 1950s. The fact that the master plan is an outdated idea whose sales pitch is more impressive than its performance adds another layer of complexity.
- **Exclusion of Environmental concerns:** The master plan's conceptualizations don't take into account modern sensitivities, such as the need for environmental preservation. With its antiquated notions of land development for urban service rationalities, the master plan's legal and institutional framework remained unaltered.
- **Lot of Ambiguity:** According to NITI Aayog, only about 65% of urban settlements in India have master plans. A cursory review of related regulations reveals that there are no predetermined requirements for requiring a spatial plan to control urban growth.
- **Delays:** Such announcements of required master plans are delayed for a number of reasons, most notably a lack of human and financial resources.

### Solutions

- India's urban planning urgently needs to be rethought.
- Accept the possibility that the master plan instrument may be constrained by its antiquated ideas and ingrained institutional cultures.
- Learn from Indian cities, which can provide enough examples, such as how to complement the master plan's shortcomings with creative bye-laws.
- Prioritize the shortcomings in urban planning and governance outlined in the NITI Aayog report from 2021.
- Make sure that the profession and education of spatial (town) planning receive increased emphasis.

### Conclusion

The era of planetary urbanization brings spatial planning into sharp focus and necessitates reimagining the spatial planning framework in India. The Indian spatial planning framework needs to be reevaluated, and the Centre and States must collaborate.

**Nut Graf:** Recent initiatives, such as the Gati Shakti and Model Rural Transformation Acts, demonstrate the growing demand for a spatial planning framework. Master Plans might not be a cure-all. In order to handle the expanding and new governance difficulties brought on by urbanisation, India needs to rethink spatial planning.

## 3. States' Lax response to lynching

**Syllabus:** Salient features of Indian Society, Diversity of India.

**Mains:** Mob Lynching and State's Response

### Background

- The National Federation of Indian Women (NFIW) filed a plea, and the Supreme Court has ordered the Ministry of Home Affairs and the governments of Maharashtra, Odisha, Rajasthan, Bihar, Madhya Pradesh, and Haryana to answer.
- Despite a prior Supreme Court ruling in Tehseen Poonawala v. Union of India in 2018 against vigilantism, the petition criticises their inaction against mob violence and the lynching of Muslims by cow vigilantes over the past five years.

### About Tehseen Poonawala's judgment

- The Supreme Court's decision, authored by Justice Dipak Misra, stated that it was the State's sacred duty to defend the lives of its inhabitants.
- The court was required to consider whether the populace of a great Republic like ours had lost the virtues of tolerance to support a diversified culture in light of the rising number of lynching instances, according to the statement.
- The inability of the legal system to stop such crimes in their tracks and the criminals' tendency to dramatize incidents only make the situation worse.
- According to the court, it is the primary responsibility of the State's government to prevent vigilantism, whether it be against cows or against anyone else.
- According to the ruling, vigilantes bring about anarchy, turmoil, and disorder as well as the formation of a violent society.

### Cases were Highlighted in the NFIW petition

- In Rajasthan, two men named Junaid and Nasir were allegedly lynched and set on fire as they travelled from their home.
- In Bihar's Saran district, a 56-year-old man is said to have been lynched on the grounds that he was carrying meat.

### Remedial directions given by the SC to States

- Remedial directions include the designation of a designated nodal officer with a minimum rank of Superintendent of Police to take action against crimes motivated by prejudice, such as lynching and mob violence.
- The local police must file a FIR right away if they become aware of a lynching or other act of mob violence.
- The Station House Officer who filed the FIR has a responsibility to notify the district's nodal officer, who in turn must make sure that the victims' families are not subjected to any additional harassment.

### Way Forward

The Supreme Court is currently hearing a separate contempt case against the Centre and the States for failing to follow the Tehseen Poonawala ruling.

The status report should include information on the preventive and corrective measures that the State governments have implemented in response to the 2018 ruling.

In order to discuss the compliance measures mandated by the court in the Tehseen Poonawala verdict, the Ministry of Home Affairs would call a meeting of the department heads of the State governments.

**Nut Graf:** The NFIW demands an investigation into police indifference, constitutional infractions, and a violation of the victims' duty of care, as well as prompt interim compensation and a minimum uniform amount for those who have been the victims of such violence.

# MISCELLANEOUS

## 1. World Competitiveness Index and Global Liveability Index

**Syllabus:** GS-2, Important reports

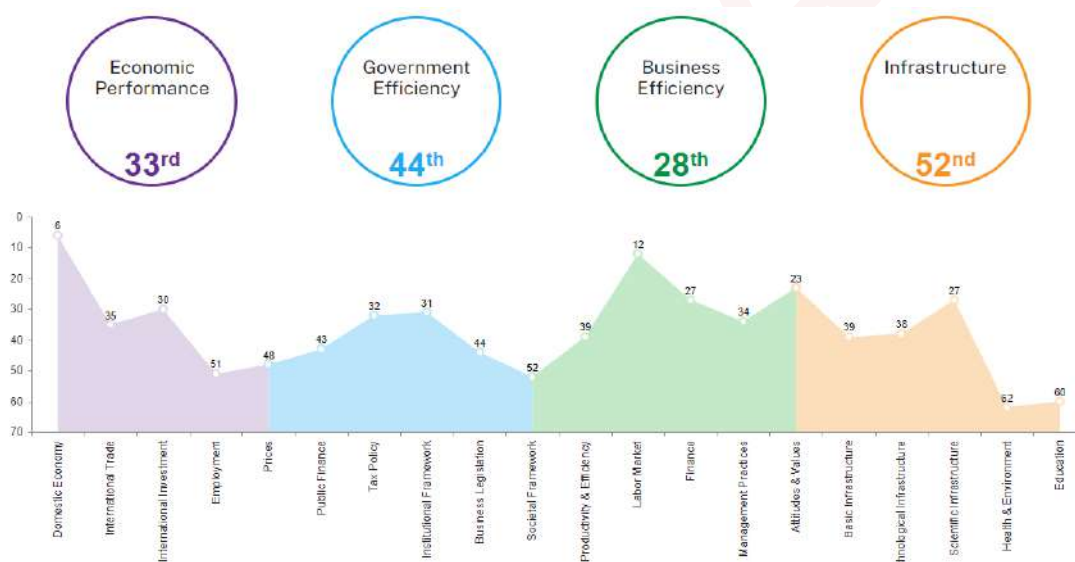
**Prelims:** World Competitiveness Index and Global Liveability Index

### World Competitiveness Index

- Released in July 2023.
- By Institute for Management Development (IMD) since 1989 in its World Competitiveness Yearbook.
- Analyzes how the countries manage their competencies to create long term value.
- For 2023, 64 economies measured, based on 336 competitiveness criteria categorized into:
  - Economic Performance
  - Government Efficiency
  - Business Efficiency
  - Infrastructure
- Top 3: Denmark, Ireland and Switzerland

### India's status

- Overall Rank dropped from 37th (2022) to 40th.
- Economic Category: 28th (2022) to 33rd.
- Government Efficiency: 14th (2022) to 19th.
- Business Efficiency: 23rd (2022) to 28th.
- Infrastructure: 49th (2022) to 52nd.



- Improvements in exchange rate stability, compensation levels, and pollution control.
- Challenges: Sustaining high GDP growth, managing financial market volatility, controlling inflation and fiscal deficit, accelerating digital transformation, and mobilizing resources for infrastructure development.

### Global Liveability Index

- By the Economist Intelligence Unit.
- Ranks cities on the basis of how liveable are they.
- 5 broad categories of parameters:
  - Stability (25%)
  - Healthcare (20%)
  - Culture and Environment (25%)
  - Education (10%)
  - Infrastructure (20%)
- 5 category of ratings for each factor: acceptable, tolerable, uncomfortable, undesirable or intolerable
- 2023 Rankings
  - 178 cities ranked.
  - Top 3: Vienna, Copenhagen, Melbourne.
  - Osaka: only Asian city in top 10.
  - Progress made by Asian-Pacific region, while European region saw an overall decline.
  - Indian Cities: Delhi & Mumbai- 141, Chennai- 144, Ahmedabad- 147, Bengaluru- 148.



## 2. Colonial loot & reparations

**Syllabus:** GS-4, Ethical Issues in International Relations

**Mains:** Justice for the wrongdoing by colonisers in past

**Context:** Recent incidents of announcement of the return of artefacts by countries like the Netherlands have started a debate surrounding the return of cultural artefacts looted during the colonial period. The issue of cultural artefacts looted during the colonial period and the growing demand for the return of stolen treasures to their original homelands has come into focus.

### Background:

- Recently, the Netherlands made an announcement about returning looted artefacts from Indonesia and Sri Lanka. But not all colonial powers show the same attitude.
- The British, for example, have refused to return items such as the Elgin Marbles and the Rosetta Stone. However, they have repatriated some Benin Bronzes to Nigeria.
- In the case of Indian artefacts, from the Kohinoor diamond to sculptures from the Amaravati stupa, the British have been reluctant to return them due to fears of setting a precedent and potentially emptying their museums.

### Moral Obligation in Returning Looted Cultural Artifacts:

- Former colonial powers have a moral obligation to acknowledge the historical wrongs committed through the looting of cultural artefacts during colonial rule.
- Returning looted cultural artefacts symbolizes the recognition of past injustices and the commitment to rectify them.
- It represents justice and reconciliation for affected communities and nations.
- By returning looted artefacts, former colonial powers set a moral precedent that encourages global recognition of historical injustices.
- It prompts other nations to confront their own colonial legacies and work towards rectifying past wrongs.

### Preservation of Cultural Heritage:

- **Healing and Reconciliation:** Artefacts are part of cultural and religious identity. Some historical artefacts have deep cultural significance. Repatriation of cultural artefacts offers a path towards healing and reconciliation for affected communities.
- Repatriation allows nations to **reclaim and preserve their cultural heritage**, which was wrongfully taken away.
- It enables future generations to connect with their history and fosters a sense of **pride in their cultural identity**.

### Beyond Financial Reparations:

- The restitution of cultural artefacts goes beyond financial reparations and addresses the intangible aspects of colonialism's impact.
- It offers a form of moral redemption, providing closure and healing for the communities that suffered under colonial rule.

### Limitations and Challenges

Despite moral, financial and other obligations and benefits, return is not easy. It has many challenges and limitations such as:

- **Legal Constraints:** De-accessioning laws may prevent the return of items currently held in museums, creating legal barriers to repatriation.
- **Affect Museum Collections:** Fear of opening floodgates and losing significant cultural treasures may deter some countries from initiating widespread repatriation efforts.
- **Lack of Consensus:** Disagreements and differing perspectives among nations and cultural institutions regarding the rightful ownership and claims over looted artefacts make the process complex.
- **Balancing Historical Responsibility:** Striking a balance between addressing historical injustices and preserving the educational value of cultural artefacts in global museums is a complex challenge.
- **Financial and Logistical Considerations:** Assessing costs, and logistics, and ensuring the safe transport and preservation of delicate artefacts pose practical challenges in the repatriation process.

**Conclusion:** To address these limitations the role of leadership and international cooperation is crucial. The actions of leaders like Willy Brandt and Justin Trudeau are examples of atonement. Further, encouraging the British government to follow suit, making a significant gesture of atonement and strengthening international cooperation for the repatriation of stolen cultural artefacts can facilitate the process.

**Nut Graf:** The return of looted cultural artefacts by former colonial powers acknowledges historical wrongs, fosters healing, and preserves cultural heritage, but legal, logistical, and consensus challenges hinder the process. Leadership and international cooperation are crucial for successful repatriation efforts.

### 3. Chashma-V nuclear plant

**Syllabus:** GS 2- International Relations

**Prelims:** Effect of policies and politics of developed and developing countries on India's interests

**Details:**

- Recently, the Prime Minister of Pakistan laid the foundation stone of the Chashma-V Nuclear Power Plant in Islamabad.
- This move aimed to strengthen economic cooperation between Pakistan and China.
- Chashma-V, the power plant, is being built in accordance with a USD 3.5 billion contract made with China.



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## YOJANA JULY 2023

## 1. Sahakar se Samridhi: From Planning to Realisation

## Introduction:

To harness cooperation for prosperity and progress, the Ministry of Cooperation (MoC) was established as a separate administrative body in July 2021, with a call for “Sahakar se Samridhi” (prosperity through cooperation).

- By embracing the cooperative-led movement, India has the potential to promote balanced regional development and empower local entrepreneurs to expand globally.

## Overview of the cooperative movement

- India is home to 8.54 lakh cooperatives present in 98% of the villages and has 29 crore members. 80% of these cooperatives are non-credit cooperatives and 20% are credit cooperatives.
- The first recognition of the cooperative movement started in 1904 with the promulgation of the Cooperative Credit Societies Act.
- After the MacLagan Committee Report on Cooperatives (1914-15), the cooperative movement underwent a transition from primarily focusing on providing relief to becoming a movement with the aim of improving socio-economic welfare.
- Post-independence, the cooperative movement received due recognition in the prospective plans of the Government of India.

## Eternal Principles of Indian Cooperatives



Figure: Eternal Principles of Indian Cooperatives

- Addressing hurdles and challenges through appropriate policies and effective government interventions is necessary to unleash the full potential of cooperatives. This can be achieved by utilizing the 4 Ps and 4 Es framework.



Figure: Prosperity through Cooperation  
Source: Yojana

#### Government commitments to Indian cooperative movements

- **Cooperative 'SQUAD':** The government has formulated a plan which prioritises and explores new emerging areas for cooperatives through the 'SQUAD' framework.



Image: Squad Cooperation  
Source: Yojana

- **National cooperation policy:** Suresh Prabhu committee has been set up to formulate an all-inclusive policy for the uniform cooperative movement.
- **Strengthening Primary Agriculture Credit Societies (PACS):**
  - Model By-laws for PACS: 22 states have adopted model-by-laws to enhance operational efficiency, transparency, and responsibility towards collective community development.
  - PACS as Common Service Centres (CSC): PACS can register as CSCs to diversify their business for self-sustenance.
  - Integrating PACS with FPOs: This will help PACS to extend their scope of activities and take up high-income enterprises like beekeeping, mushroom cultivation, etc.
  - PACS in the Oil and Energy Business: PACS can avail licenses for petrol and diesel dealerships and LPG distributorships, and they will also be engaged in the implementation of various renewable energy schemes.



- **National Cooperative University:** It will help to establish a comprehensive, integrated, and standardized structure of cooperative teaching and training and meet the demand for capacity building of the existing workforce.
- **Cooperative database:** The Ministry of Cooperation is developing a comprehensive cooperative database to capture authentic and updated data on cooperatives of all sectors to support policy formulation.
- **Other initiatives:**
  - Computerization of 63,000 functional primary agricultural credit societies.
  - Cooperative societies as registered buyers and sellers on the Government e-market platform (GeM).
  - Setting up the National Export Cooperative Society to promote exports from cooperatives.
  - Establishing a national organics cooperative society to promote organic products.
  - Setting up the National Export Seed Cooperative Society to promote production preservation certification and distribution of quality seeds.
  - Creating 2 lakh new multi-purpose PACs to cover all 2.54 lakh panchayats.

#### Challenges in ensuring smooth and sustainable growth of the cooperative sector:

- Addressing regional and sectoral imbalances in cooperative expansion.
- Navigating complex regulatory landscapes across states.
- Enhancing governance, leadership, and operational systems and ensuring professional management of cooperatives.
- Establishing effective dialogue and coordination among central, regional, and state registrars of cooperatives.
- Strengthening basic infrastructure and fostering the formation and promotion of new cooperative societies and social cooperatives.

#### Conclusion:

- The contribution of cooperatives will have a multiplier effect on the goal of achieving a five trillion dollar Indian economy while boosting farmers' income.
- The true fulfilment of the Sahakar se Samridhi vision hinges on community business units effectively tapping into the inherent potential of people's collective action and aligning with the core philosophy of the cooperative-based model for socio-economic progress.

## 2. Empowering Agriculture Cooperatives through Digitisation

**Introduction:** Cooperative credit institutions have long been instrumental in driving social and economic development in India. These institutions, particularly in rural areas, play a crucial role in credit mobilization for agricultural production.

#### About Cooperative Credit Institutions:

- The short-term rural cooperative credit structure (STCCS) is a 3 tier structure which comprises State Cooperative Banks (StBs), District Central Cooperative Banks (DCCBs) and Primary Agriculture Credit Societies (PACs) at the village level.
- They are regulated by the Reserve Bank of India (RBI) and supervised by the National Bank for Agriculture and Rural Development (NABARD).
- They provide essential credit mobilization in agriculture production but also serve as catalysts for self-help, grassroots community participation, and social control over resource allocation and mobilization.

#### Challenges Confronting Cooperative Credit Institutions

- Face stiff competition from commercial banks and microfinance institutions in the rural credit sphere.
- Inability to adopt cutting-edge technologies.
- Reliance on conventional services (short-term loans) rather than tapping into services such as financial advisory and marketing.
- Lack of innovation.

**Way Forward:** Empowering Cooperative Credit Institutions through Technology Technological adoption and process digitisation can empower cooperative institutions.

#### ● Digitization of STCCS:

- Centralized Online Real-time Exchange (CORE) based Banking Solutions (CBS) have automated State Cooperative Banks (StBs) and District Central Cooperative Banks (DCCBs), improving regulatory mechanisms and enabling anytime, anywhere banking.
- Efficiency and governance across cooperative banks can be improved by adopting standardized technology-driven office management systems.

#### ● Technology Adoption for PACS:

- While DCCBs require the digitization of business processes, PACS need to be computerized as a fundamental step towards efficiency.
- The computerization of PACS aims to enhance service delivery, digitize operations, and integrate them with DCCBs and StBs.
- However, challenges such as inadequate rural infrastructure, power supply, internet connectivity, and computer skills must be addressed.



### ● **Technology Adoption for Customer Interface, Service Delivery, and Decision Making:**

- Need to adopt technologies such as mobile banking, internet banking, drones for field monitoring, and blockchain for cybersecurity and transparency.
- Need for collaborative partnerships with fintech firms to facilitate customer acquisition, credit profiling, advisory services, financial products, and development of user-friendly digital interfaces

### **Conclusion:**

Digitization holds immense potential for empowering cooperative credit institutions and driving rural development. Digitization enables seamless integration, better service delivery, and financial inclusion. With the right policy support and a focused approach, cooperative credit institutions can leverage digitization to effectively address the evolving needs of Indian agriculture, contributing to the prosperity of rural communities.

## **3. Developing Pathways for Non-Credit Cooperatives**

### **Introduction:**

- With approximately 8.5 lakh cooperative societies and a membership of 29 crore people, cooperatives have played a significant role in the Indian economy.
- However, the growth and evolution of cooperatives vary across states due to diverse focus areas adopted by state administrative machinery.

### **Structure of Cooperatives in India:**

- Cooperatives operate under the Cooperative Society Act 1912, which includes the Cooperative Thrift Society Act and the Multi-State Cooperative Societies Act 2002.
- There are two types of cooperative structures:
  - State Cooperative Societies (come under state government)
  - Multi-State Cooperative Societies (come under the central government)

### **Impact of Globalization on Cooperatives:**

- Amul, HOPCOMS, and IFFCO have been success stories despite the fear that globalization would affect the growth of cooperatives.
- Their success can be attributed to
  - Well-functioning end-to-end supply integration chain
  - Diversification of products and marketing
  - Technological advancements
  - Professional management
- These success stories highlight the potential of cooperatives, especially in the food processing sector, to contribute to India's economy.

### **Way Forward:**

Non-credit cooperatives in India require a tailored approach due to their diversity. Recognizing this, it was decided to establish a national-level cooperative society for agriculture products.

#### ● **Convergence:**

- Cooperatives in India can register as MSMEs on the Udyam Portal
- Cluster-based programs provide funding for common facilities, processing centers, and skill development.
- Udyam certification can be considered as the primary document to access program benefits.
- This streamlined approach aligns with the "Whole of the Government Approach" and grants cooperatives MSME status for priority sector lending.

#### ● **Awareness, Training, and Mentoring:**

- Creating awareness about cooperatives among students as a viable career option.
- Capacity building through training programs and skill development to cooperative staff.
- Mentorship programs can foster collaboration between larger cooperatives and state-level cooperatives engaged in similar activities.
- Promoting knowledge exchange and creative cooperation.

### **In this regard, the Government of India has announced formation of**

(a) National level Multistate Cooperative Seed Society, which would act as an apex organization for production, procurement, processing, branding, labeling, packaging, storage, marketing and distribution of quality seeds; and strategic research and development.

(b) A Multi State Cooperative Organic Society to act as an umbrella organization for aggregation, certification, testing, procurement, storage, processing, branding, labeling, packaging, logistic facilities, and marketing of organic products.

#### ● **Technology and Digitization:**

- Upgrading technology, production, and business models while embracing digitization are vital for cooperatives to remain competitive.
- Government support, including subsidies and credit facilities, can assist cooperatives in this transition.
- Creating physical infrastructure and linking cooperatives with relevant cluster schemes.

**Conclusion:**

The government's focus on cooperation and development underscores its commitment to community-led socioeconomic progress. By integrating state cooperatives into multi-state entities and emphasizing convergence, awareness, training, mentoring, technology upgradation, and digitization, India can unlock their full potential.

**4. Fishery Cooperatives****Introduction:**

- The fisheries sector in India is diverse, with sub-sectors like marine, inland, and brackish water, besides cold water and ornamental fisheries.
- The sector has immense economic potential in India, with a coastline of over 8,000 km, an exclusive economic zone of over 2 million square km, and extensive freshwater bodies.

**Role of Fishery Cooperatives:**

- Fishery cooperatives can provide livelihood security, nutritional security, and social security to vulnerable groups in society.
- Around 4 million people are economically benefited through primary fishery cooperatives in India.
- The role of fishery cooperatives must be considered at every level in the changed economic scenario, and they should be supported with funds to develop infrastructures and a progressive supply and value chain for sustainability.

**Fishery Development: Government of India's Thrust:**

- Atmanirbhar Bharat Abhiyaan: The Prime Minister announced a Rs 20 lakh crore economic package to create jobs in the fisheries sector.
- The Pradhan Mantri Matsya Sampada Yojana (PMMSY): Launched in 2019-20 with a total project outlay of Rs 20,050 crore to boost India's economy through the fisheries sector.
- Fisheries & Aquaculture Infrastructure Development Fund (FIDF): A dedicated fund of Rs 7,522 crore was established to develop fisheries and aquaculture infrastructure.
- Blue Revolution: Introduced in 2014, it promotes fish production and infrastructure development in the fisheries sector. Read more about the blue revolution in the link.

**Fishery Cooperative Movement in India:**

- The fishery cooperative movement in India began as early as 1913 when the first fishermen's society was organised under the name of the 'Karla Machhimar Cooperative Society' in Maharashtra.
- With the establishment of the Ministry of Cooperation, fisheries cooperatives have received priority attention and real focus.

**National Database of Fisheries Cooperatives:**

- A decision has been taken to organise fishery cooperatives covering each panchayat of the country to reach a figure of 2 lakhs in the coming five years.
- The National Fisheries Development Board (NFDB) and FISHCOPFED have been assigned to speed up the work in coordination with the concerned State/UT authorities.
- The database can help identify the gaps in the sector, and efforts will be made to bridge the gaps.

**Fishery Success Stories:**

- Fishery cooperatives have received priority attention and real focus since the establishment of the Ministry of Cooperation in 2021.
- Matsyafed-Kerala: Established in 1984, this state-level federation excels in fish sales, exports, and retail outlets, and operates its own mat-making and processing plants.
- Gujarat Fisheries Central Cooperative Association (GFCCA): Registered in 1956, GFCCA operates diesel outlets for fishing boats and successful fish retail outlets in Delhi.

**Conclusion:**

- The fisheries sector is a sunrise sector in India with immense economic potential.
- Fishery cooperatives can play a key role in providing nutritious food to people and generating employment opportunities.
- The government of India is committed to uplifting the fishery cooperative sector through adequate policy and financial support.
- The synergy between the Ministries of Cooperation and Fisheries is expected to drive the sector's growth.

## 5. One Pacs One Drone

### Introduction:

- The article discusses the use of technology, specifically drones, in the cooperative sector in India.
- A drone is an unmanned aerial vehicle (UAV) that operates without a human pilot, crew, or passengers onboard and can be operated remotely or autonomously.
- The Indian government's initiatives to promote the manufacturing of drones and strengthen Primary Agricultural Credit Societies (PACS) are paving the way for a brighter future for the rural economy.

### Indian Government's Initiatives:

- **Strengthening Primary Agricultural Credit Societies (PACS):**
  - Financial assistance and training are being provided to strengthen PACS.
  - This will enhance services to farmers and promote rural development.
- **Liberalised Drone Rules 2021:**
  - The Ministry of Civil Aviation announced the liberalised Drone Rules 2021.
  - The rules aim to make India a global drone hub by 2030.
  - Easier and faster approvals for drone operations in India.
  - Creation of a drone promotion council to facilitate a regulatory environment for the drone industry.
- **Production-Linked Incentive (PLI) Scheme:**
  - The Central Government approved a PLI scheme worth Rs 120 crore for drones and components.
  - Aims to boost drone manufacturing in India and reduce import dependence.
- **Strengthening Cooperative Movement:**
  - The government is giving increasing focus to strengthen the cooperative movement nationwide.

### Drone in Agriculture:

- Challenges in the agriculture sector: Low yield, soil erosion, lack of irrigation facilities, inefficient use of inputs, unscientific use of fertilizers, lack of post-harvest management, and limited access to financial services.
- Potential of Fourth Industrial Revolution technologies: Digital tech-based agriculture can unlock a value of \$65 billion by 2025, with a significant impact on GDP.
- Role of drones in agriculture: Drones offer solutions such as land mapping, agrochemical spraying, seeding, crop yield assessment, and drone-based analytics.
- Benefits of agrochemical spraying with drones: Cost savings of 25-90% on inputs, 90% reduction in skin exposure, and improved crop yield.
- Importance of mapping: Precision agriculture and the reduction of land disputes can be achieved through drone-based land mapping.
- Low levels of farm mechanization in India: Northern states have adoption rates of 70-80%, but still lower compared to countries like China, Brazil, and the United States. Drones can help increase productivity and minimize input costs.
- Pest control: Drones can effectively spray pesticides, fungicides, and liquid fertilizers to combat pest infestations and their impact on crops.
- Support for farmers: Drones offer cost reduction and optimization of input use, with various applications like surveying, seeding, spraying, and pollination.

### One PACS One Drone: Action Required & Benefits

- Multipurpose PACS establishment nationwide with one drone each
- Grant of 75% of agricultural drone cost for PACS, similar to FPOs
- Drones can transform Indian agriculture, increase GDP by 1-1.5%
- Create 5 lakh new jobs and usher in a digital era of prosperity
- Eligible rural entrepreneurs with pilot licenses can fly agricultural drones
- Guidelines provide a net annual profit range of Rs 5 to 6 lakhs for PACS members.

### Conclusion:

- The use of drones in the cooperative sector in India has the potential to revolutionize the rural economy. The government's initiatives to promote the manufacturing of drones and strengthen PACS are steps in the right direction. With the right policies and investments, India can become a global leader in the drone industry and achieve its goal of 'Sahakar se Samridhi'.

## 6. Regenerative Agri-Supply Chain management

### Introduction:

- Agriculture Supply Chain Management (ASCM) is concerned with the effective flow of agricultural commodities from farm to fork via logistics flows, transporters, shops, procurement, warehousing, inventory management, and processing.
- Factors such as climate change, supply chain disruptions, market volatility create challenges for the supply chain.
- The transition to a smart regenerative supply chain relieves agriculture from social and environmental pressures.

### Importance of Supply Chain Management:

- It provides food security and long-term agricultural development by connecting stakeholders.
- It helps farmers in procuring, marketing, and distributing commodities.
- It necessitates the proper allocation of resources to deal with storage issues, transportation issues, and inventory management.

### Role of Cooperatives in Agriculture Supply Chain:

- Cooperatives help the agricultural supply chain by offering technical, financial, and operational support services.
- Cooperatives like Farmer Producer Organizations (FPOs) are responsible for business activities such as bulk purchasing of agricultural inputs, and facilitating credit requirements.
- They serve as a platform for information transmission, marketing, transportation, and distribution of commodities.
- They help to get quality produce by supplying agri input (seeds, fertilisers, etc.) and extending credit facilities. Their focus has shifted to quality produce in addition to marketing and processing.
- Cooperative marketing societies have progressed towards better storage facilities, efficient management of resources, timely payment to farmers and minimisation of waste.
- They have transformed to regenerative supply chains by adopting sustainable practices.

### World's largest grain storage plan:

- The Union Cabinet has approved the formation of the Inter-Ministerial Committee (IMC) to develop the world's largest cooperative grain storage plan.

### Benefits of decentralized storage system:

- Reduction of food grain waste and strengthening food security
- Addresses distress sales and facilitates price discovery
- Reduction in transportation costs involved from procurement centres to fair-priced retailers
- Expands the role of the PACS and diversifies commercial activities

### Primary Agricultural Credit Society (PACS) Storage & Supply Chain Management:

- Multi-service centres: Primary Agricultural Credit Society (PACS) act as multi-service centres that assist the farmers in procuring and marketing of agricultural produce along with meeting the credit requirements.
- Quality inputs for farmers: The storage of agriculture implements, and agri-inputs by PACS can help ensure availability of quality inputs for farmers.
- Common service centers: PACS are functioning as common service centres by facilitating the delivery of services to villages.



**Figure 1: Managing Supply Chain through Cooperatives**

Source: Yojana

**Initiatives taken:**

- The Ministry of Cooperation has set up of three sector-specific national level cooperative societies:
  - Seed societies: helps with seed production, processing, storage and distribution
  - Export societies: helps in procurement, storage, processing, marketing, branding, packaging
  - Organic societies: offers certification and standardization to the market via laboratory networks

**Way Forward:**

- Expansion of knowledge on the by-products and their use needs to be explored.
- Sensitisation: Success depends upon how well the members are sensitized about the recent advances in supply chain and their applications towards effective management.
- Managing supply chain risk: Cooperatives need to manage supply chain risks attached to quality standards, available human resources, climate factors, marketing, etc. Supply chain risk can be managed through digitalisation and data analytics.

**Conclusion:** The transformation towards a regenerative supply chain has provided cooperatives with economic, social, and environmental benefits.



## 7. Strategic diversification of cooperatives and business competitiveness

### Introduction:

The Union government is placing emphasis on strengthening the existing primary cooperatives and creating additional 200,000 primary-level cooperatives within the next 4 to 5 years. In this context, it is crucial to strategically diversify cooperatives, from the community level to the national level, to ensure their competitiveness and continued relevance in the market.

### Need for Business Diversification:

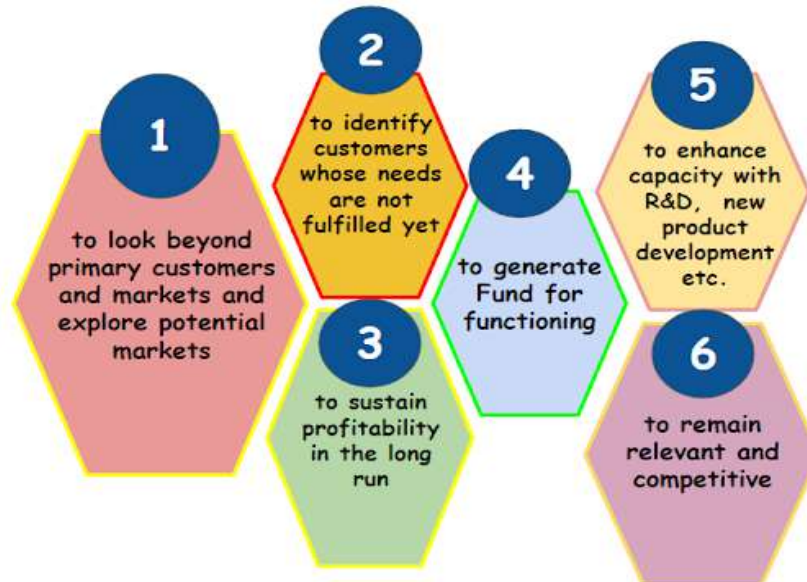


Figure: Need for business diversification

### Types of diversification cooperatives can incorporate:

Types	Ways of diversification	Example
Product Diversification	Diversify products and services to meet new market needs or changing customer preferences.	Amul introduced ice creams and other frozen milk confectionaries.
Geographic diversification	Diversify product offerings to reach new markets and satisfy customer needs.	Karnataka Milk Federation's milk brand 'Nandini Goodlife' is available across various states.
Service diversification	Offer additional services alongside primary products and services.	Anjarakandi Urban Cooperative Bank in Kerala sells coconut-based products in addition to banking services.
Joint ventures	Cooperatives can form joint ventures to combine resources and expertise	IFFCO and Spain's Congelados De Navarra have a joint venture to set up a food processing unit in Punjab.
Vertical integration	Cooperatives can vertically integrate by adding upstream or downstream activities.	Amerli District Cooperative Milk Producers Union and IFFCO Kisan Sanchar have a joint venture for high-quality animal feed supply.
Horizontal integration	Cooperatives can horizontally integrate by merging or acquiring other cooperatives or companies for economies of scale.	Centrum Finance Ltd acquired Punjab and Maharashtra Cooperative Bank to expand their market.

### Advantages of Strategic Diversification for Cooperatives

- Achieve growth and competitive advantage in new markets and product lines by leveraging the unique strengths and capabilities of cooperatives.
- Expand customer base and reduce reliance on specific markets.
- By aligning diversification opportunities with their mission and values, cooperatives can better serve their members' needs.
- It allows cooperatives to develop advantageous positions in the market compared with corporates.
- Through strategic diversification, they can generate business profits while promoting inclusiveness in their activities.

## 8. Cooperative Entrepreneurships for Economic Development

### Introduction:

India has a long history of both entrepreneurship and cooperative movements. In India, the cooperative movement has always used financial and social resources to promote inclusion and community growth.

#### Cooperative Entrepreneurship:

Cooperative entrepreneurship is a type of collective or joint entrepreneurship. A “cooperative entrepreneur” is a social leader with the vision to develop effective plans for running businesses democratically rather than just for one's benefit. Democratic governance based on one person, one vote, and equality are the pillars of governance of cooperatives.

### Focus and Importance of Cooperative Entrepreneurship:

- Focuses on quality employment generation.
- Wealth creation.
- Optimal use of available resources at the community level.
- Potential to deliver goods and services at the grassroots.
- Social bonding and cohesion.
- Control and dignity of the workplace.

### Current Situation:

- In India, cooperatives account for:
  - 19% of our agricultural financing
  - 35% of fertiliser distribution and 30% of fertiliser production
  - 40% of sugar production
  - 13% of wheat procurement and 20% of paddy procurement
- Numerous cooperative business models exist around the country that serve the requirements of both members and non-members.
  - Sixteen Indian cooperatives have been featured in the ‘Turnover over GDP Per Capita’ category of the World Cooperative Monitor 2022. This includes:
    - Indian Farmers Fertiliser Cooperative Limited, New Delhi (IFFCO)
    - Gujarat State Cooperative Milk and Marketing Federation, Anand, Gujarat
    - Seven state cooperative banks e.g. Kerala, Maharashtra Karnataka and Pradesh, etc.

### Growth Potential:

- Finding opportunities for the formation of cooperatives can be done effectively through the solving of community problems and the observation of sectoral trends.
- There is a substantial opportunity to establish and grow cooperatives in developing economic sectors such as manufacturing, services, renewable energy, tourism, transportation, handloom, handicraft, health, student/campus consumer cooperatives, etc.
- There is tremendous potential in the social welfare sector that is usually not economically viable for other types of commercial enterprises.

### Challenges:

- Difficulty in gaining access to capital.
- There are often legal restrictions on the range of operations or membership.
- The operations and processes are expensive and time-consuming due to democratic decision-making, etc.

### Way Forward:

- Cooperative entrepreneurship must aim to improve cooperative society operations through strategic management, innovation, and creativity.
- The governance mechanisms of the cooperative society must be dynamic.
- Qualified, competent, and committed human resources must be employed.
- Modern management techniques to realize the goals of unity.

### Conclusion:

- Better expansion of the sector is expected with government backing through campaigns like Sahakar se Samridhi and the creation of a separate Ministry of Cooperation, etc.
- Additionally, the inclusion of women and young people with cooperative values and knowledge can be helpful for faster growth.
- The eleven vows mentioned earlier in the article are the best formula for living a simple and happy life. It is the best representation of ‘Live and Let Others Live’.

# KURUKSHETRA JULY 2023

## 1. Millets: Future of Sustainable Agriculture

Millets are a type of small-seeded grass that is also known as nutri-cereals or dry-land cereals. They have the potential to improve nutritional balance, reduce dependence on water-intensive crops like rice, and ensure food security for all.

### Overview of millet cultivation in India

- India is the world's leading producer of millet, accounting for 19% of global production and 20% of the world's millet-growing area.
- The three most popular varieties of millet produced in India are pearl millet (bajra), sorghum (jowar), and finger millet (ragi).
- The top 10 millet-producing states in India are Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, and Uttarakhand. These 10 states account for 98% of millet production in India.
- Of these states, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh account for 83% share of millet production.
- The recent drive for the promotion of millet is due to nutritional values, environment-friendly cropping patterns, and its remunerative potential.

### Nutritional value of millets

- Most millets have a high content of proteins, fibres, vitamins, and essential minerals. They are also an attractive gluten-free substitute for cereals and have the benefits of low absorption of fats and low glycemic indices. This makes them a good source of nutrition for people of all ages.

Grains	Energy (kcal)	Protein (g)	Carbohydrate (g)	Starch (g)	Fat (g)	Dietary Fibre (g)	Minerals (g)
Sorghum	334	10.4	67.6	59	1.9	10.2	1.6
Pearl millet	363	11.6	61.7	55	5	11.4	2.3
Finger millet	320	7.3	66.8	62	1.3	11.1	2.7
Proso millet	341	12.5	70.0	-	1.1	-	1.9
Foxtail millet	331	12.3	60.0	-	4.3	-	3.3
Kodo millet	353	8.3	66.1	64	1.4	6.3	2.6
Little millet	329	8.7	65.5	56	5.3	6.3	1.7
Barnyard millet	307	11.6	65.5	-	5.8	-	4.7
Maize	334	11.5	64.7	59	3.6	12.2	1.5
Wheat	321	11.8	64.7	56	1.5	11.2	1.5
Rice	353	6.8	74.8	71	0.5	4.4	0.6

Figure: Nutritional profile of millets and cereals  
Source: Kurukshetra

### Environmental Sustainability

- **Adaptability:** Millets are versatile crops that can be grown in a variety of conditions. They are drought-resistant and can tolerate a wide range of temperatures.
- **Mixed cropping:** Millets can be grown in mixed cropping systems, which helps to improve soil fertility and reduce pest pressure.
- **Irrigation:** Millets require less irrigation than other cereals, such as rice and wheat. This makes them a good choice for farmers in areas with limited water resources. Eg: Paddy requires a temperature above 25 degrees with an annual rainfall of above 100 cm whereas jowar can be grown even in areas with less than 20 cm of annual rainfall.
- **Cropping duration:** Millets have a shorter cropping duration than other cereals thereby making them ideal for adopting crop rotation.

### Initiatives for promoting millet production and consumption:

#### Production:

- Millets are supported under the Minimum Support Price scheme of the government which ensures that farmers receive a fair price for their crops and reduces risks in growing millet.
- Return over cost for the crops covered under MSP is higher for millets when compared to other crops like paddy.

Crop	MSP 2014-15	MSP 2022-23	MSP 2023-24	Cost* of production 2022-23	Increase in MSP (Absolute)	Return over cost (in per cent)
Paddy	1,360	2,040	2,183	1,455	143	50
Jowar	1,530	2,970	3,180	2,120	210	50
Bajra	1,250	2,350	2,500	1,371	150	82
Ragi	1,550	3,578	3,846	2,564	268	50

**Figure: Minimum support price for millets**

- The total production of millets in India has increased from 137 lakh tons in 2018-19 to 160 lakh tons in 2021-22. The total area under cultivation has also increased during this period.

#### Consumption:

- The government of India is promoting the consumption of millet through various programs, such as the Targeted Public Distribution System (TPDS), Pradhan Mantri Poshan Shakti Nirman (PM-POSHAN), Integrated Child Development Scheme (ICDS), One District One Product (ODOP) scheme and Sub-mission on Nutri-Cereals under National Food Security Mission.
- The Indian Institute of Millets Research (IIMR) will be established in Hyderabad to conduct research on millets and to share best practices with other countries.
- Awareness campaigns like publishing commemorative coins and stamps on millet, nutritional programmes by the Food Corporation of India, etc. are being conducted to raise awareness about the benefits of millet to consumers.

#### Conclusion:

- To boost the export of Indian millets, they should comply with the sanitary and phytosanitary standards of the West. Additionally, a robust supply and value chain from pre-production to processing and marketing needs to be established.
- The renewed emphasis on millets has the potential to create positive externalities such as improved nutrition for citizens, environmental sustainability, retention of soil fertility, and better incomes for cultivators.

## 2. Technologies for Sustainable Agriculture Development

#### Introduction:

- Agriculture is the backbone of the Indian economy employing 42.1% of the Indian population. However, traditional agricultural practices in India are unsustainable and negatively affect the environment and human health.
- **Sustainable agricultural practices** (which focus on soil, environment and community's long-term health) are required to ensure the long-term viability of agriculture in India.

#### Role of Technology in Developing Sustainable Agriculture:

- Technology can help in **reducing the use of fertilizers and pesticides, improves water management, and increases yields, benefits soil, bio-conservation and carbon sequestration.**
- **Precision Farming:** It involves sensors, GPS mapping and data analytics to monitor and optimize crop performance.
- **Agroforestry:** Agroforestry is a land-use integrated management system that combines trees and shrubs with crops and livestock to create a more sustainable and productive farming system.
- **Vertical Farming:** It cultivates crops in stacked controlled conditions.
- **Hydroponics:** It involves growing plants in nutrient-rich water without soil. This approach can allow for year-round crop production.
- **Renewable Energy:** Renewable energy can be used to power farming operations. This approach can reduce greenhouse gas emissions and dependence on fossil fuels.
- **Robotics and Automation:** These can help reduce labour costs, improve crop yields.

#### Gaps in Adopting Sustainable Agriculture:

- **Lack of Awareness and Knowledge:** Many farmers do not know the benefits of sustainable agriculture or implement it effectively.
- **Limited Access to Finance:** Sustainable agriculture requires significant investments in infrastructure and technology. This is difficult for tiny and marginal farmers.
- **Inadequate Policy and Regulatory Framework:** Lack of support through policy and the regulatory framework.
  - For example, the National Mission for Sustainable Agriculture receives only 0.8% of the Ministry of Agriculture and Farmers' Welfare (MOAFW) budget.
- **Limited Research and Development:** There is a need for more research and development in sustainable agriculture practices that are appropriate for the Indian context.
- **Lack of Infrastructure and Technical Support:** Inadequate infrastructure, such as rural roads, storage facilities, and cold chains, is a significant challenge for the agriculture sector in India.
- **Low Productivity:** Agriculture in India is characterized by low productivity.
- **Fragmented Landholdings:** With the average landholding size being small, it becomes difficult to adopt modern farming techniques.



- **Lack of Market Access:** The lack of access to markets is a significant challenge for farmers in India.
- **Climate Change:** Climate change poses significant challenges in terms of water availability, pest and disease management, and crop yields.
  - The changing weather patterns, including erratic rainfall and rising temperatures, affect crop productivity and increase farmers' vulnerability.

#### Initiatives:

- **National Mission for Sustainable Agriculture (NMSA)**
- **Pradhan Mantri Krishi Sinchayee Yojana**
- **Integrated Watershed Management Programme**
- Initiatives to promote sustainable agriculture practices:
  - National Food Security Mission,
  - Pradhan Mantri Fasal Bima Yojana
  - Soil Health Card Scheme

#### Agri Tech Start-up Case Studies:

- **AgriApp Technologies:** It works to make the farmers ready for high-efficiency technology-enabled agriculture production and marketing.
- **Khetee** promotes agroecological farming through the agroforestry model.
- **Pudhuvai Green Gas:** It produces organic waste agro-raw materials and bio-fertilisers.

#### Conclusion:

Farmers can develop sustainable farming systems that promote environmental, social, and economic sustainability by adopting advanced technologies. However, it must be implemented with other sustainable farming practices to achieve sustainable farming systems.

### 3. Climate Sustainable Agriculture

#### Introduction:

- Agriculture faces formidable challenges due to climate change and population growth.
- There is a need for sustainable agriculture to address food security and environmental concerns.

#### Challenges in Agriculture:

- Food production needs to increase by 70% by 2050 for global food security.
- Rising temperatures decrease crop yields: maize (-7.4%), wheat (-6.0%), rice (-6.2%), soybeans (-3.1%).
- Climate change causes annual agriculture losses of US\$ 9-10 billion, with potential cereal grain reductions of 20-40%.
- Agriculture, forestry, and land-use changes contribute 25% of human-induced greenhouse gas emissions.

#### Climate-Smart Agriculture (CSA):

- Climate-Smart Agriculture (CSA) aims to achieve sustainable agriculture by addressing climate change and environmental concerns.
- CSA focuses on three main outcomes: increased productivity, enhanced resilience, and reduced emissions.
- Breeding resilient crop varieties is crucial to combat climate change impacts on agriculture.
- Climate-smart crops should tackle various challenges like pests, frosts, and extreme weather events.
- Efficient production and distribution are necessary to make climate-smart crop varieties accessible to farmers.

#### To effectively implement a climate-smart agriculture strategy, there are some components that are recommended by FAO:

- Develop climate-resistant crop varieties and involve farmers in decision-making.
- Diversify crops and organisms to promote farm resilience and profitability.
- Holistically combat climate change effects on pests, diseases, and weeds.
- Prioritize water resource management to address increasing water scarcity.
- Protect soil through integrated landscape planning and sustainable management practices.
- Enhance productivity and reduce emissions through appropriate machinery and precision farming.

#### Initiatives by the Government of India:

- **National Innovation on Climate Resilient Agriculture (NICRA):** Launched in 2011 with an outlay of Rs. 350 crore with the aim to enhance the resilience of Indian agriculture to climate change. Focuses on research and development of climate-resilient technologies and practices.
- **Sub-Mission on Agro-forestry:** Launched in 2016-17 with the objective of planting trees on farm bunds and aims to bring sustainability in agriculture and mitigate the impact of climate change.
- **National Livestock Mission:** Launched in 2014-15 with a focus on livestock development through sustainable approach and aims to protect the natural environment, conserve animal biodiversity, and ensure farmers' livelihood.
- **National Water Mission (NWM):** Launched to ensure Integrated Water Resource Management (IWRM) for conserving water sources and minimizing wastage. Aims to optimize Water Use Efficiency (WUE) by 20% including the agriculture sector.



### Other Initiatives:

- **Biotech-KISAN Hubs:** Established under the National Biotechnology Development Strategy 2015-2020. Aims to provide farmers with access to modern agricultural technologies and practices.
- **Pradhan Mantri Fasal Bima Yojana (PMFBY):** Launched in 2016 to provide insurance coverage and financial support to farmers in case of crop loss due to natural calamities. Aims to promote sustainable agriculture and reduce the burden of risk on farmers.

### Conclusion

- Sustainable agriculture is crucial for addressing food security and environmental concerns and it requires a comprehensive overhaul of the entire production cycle.
- India's government has evaluated climate change's impact on agriculture, implementing interventions and contingency plans. Fertilizer policies and agro-forestry promote sustainable practices, reducing emissions and improving adaptation.

## 4. Contribution of Women to Sustainable Agriculture Development

### Introduction

- The agriculture sector in India employs **45.6 percent of the workforce and contributes 17.32 percent to gross value added.**
- Recognizing the importance of **gender dividend (contribution of women) in agriculture** is crucial as it could **boost agri productivity by 2.5% and increase farm yields by 20 to 30 percent.**

### The Importance of Women in Agriculture and Allied Services

- With the '**feminisation of agriculture**,' women's roles have been growing as they work as paid workers, unpaid workers (on family owned land) and as managers in agricultural production and post harvest operations.
- Women also play a crucial role in land and **water management, collecting water, firewood, and fodder**, which are essential for agriculture.
- They undertake a wide range of activities related to **livestock production, vegetable cultivation, fish processing, dairy production**, etc.

### Challenges Faced by Rural Women in Agriculture

- **Lack of recognition:** Women's roles as primary producers are often overlooked, and are treated merely as **consumers of social services.**
  - This perpetuates a **cycle of drudgery, limited skill development, and exclusion from decision-making processes.**
- **Skill development:** Limited avenues for skill development lead to women being relegated to **low-skilled, time-consuming, and monotonous farm activities.**
  - The increasing **mechanization of agriculture threatens their participation** unless they are provided with opportunities to acquire new skills, such as operating machinery.
- **Land ownership and records:** Women own only **13.9 percent of operational holdings**, reflecting a **gender disparity in land ownership** and prevailing land fragmentation practices.
  - **Though the Hindu Succession Act, 2005** allows daughters equal rights in ancestral property, the same is not true for agricultural land.
- **Poor credit access:** **Lack of asset ownership** makes credit facilities inaccessible to women.
  - Rural financial institutions hesitate to serve female clients due to **stringent requirements and their limited borrowing experience.**
- **Inequality in market access:** Gender discrimination **restricts women's mobility**, limiting their access to marketplaces and hindering economic opportunities.

### Government Initiatives to empower female farmers

- **The SHG-Bank linkage program by NABARD** has **relaxed collateral requirements** for availing loan
- **The Mahila Kisan Sashaktikaran Pariyojana**
- Encouraging women's leadership roles in **farmer producer organizations**
- Skill development programs under the **Pradhan Mantri Kaushal Vikas Yojana**
- Financial inclusion schemes like **Pradhan Mantri Jan Dhan Yojana and Pradhan Mantri Mudra Yojana**

### Way Forward

- **Enhancing access to credit, entrepreneurship opportunities, and recognition.**
- **Formation of women Farmer Producer Organizations** under the central government's **10000 FPOs scheme** and ensuring **access to resources and land records** can enhance their participation.
- In situations where state governments have not made modifications to tenancy laws, alternative approaches can be adopted. For instance, one effective solution implemented by **Andhra Pradesh** is the issuance of a **Loan Eligibility Card (LEC) by the state government.**
- **Direct access to information** on improved agricultural practices and market links, particularly through digital platforms.

### Conclusion

Government initiatives, skill development programs, and financial inclusion schemes have made progress, but further efforts are needed. By empowering women farmers, we can unlock their potential, increase agricultural productivity, and create a more equitable society.

## 5. Paving the Way for Sustainable Growth

### Introduction:

- Agriculture remains a vital component of India's economy, **supporting over half of the workforce**. Although its **contribution to GDP (64.64% in 1950-51 to 17.92% in 2021-22)** and **employment have declined**, it remains significant compared to the global average.

### Trends in Agriculture Production:

- The major commercial crops in India are **cotton, jute, tea, rubber, sugarcane, oil seeds, etc.**
- Among commercial crops, **potatoes witness the highest annual compound growth rate of 5.0 percent** followed by **rubber which is 3.97% and cotton which is 3.33% from 2020-21 to 2021-22.**

Commodity	1950-51	1970-71	1990-91	1910-11	2020-21	2021-22	CAGR (%)
Foodgrains	50.8	108.4	176.4	244.5	310.74	315.62	2.61
Cereals	42.4	96.6	162.1	226.3	285.28	288.31	2.74
Pulses	8.4	11.8	14.3	18.2	25.46	27.3	1.67
Oilseeds	5.2	9.6	18.6	32.5	36.57	37.7	2.83
Sugarcane	57.1	126.4	241	342.4	405.4	431.8	2.89
Cotton@	3.04	4.8	9.8	33	35.25	31.2	3.33
Jute & Mesta#	3.3	6.2	9.2	10.6	9.35	10.32	1.62
Tea	0.28	0.4	0.7	1	1.4*	-	2.36
Coffee	-	0.1	0.2	0.3	0.3*	-	2.22
Rubber	-	0.1	0.3	0.8	0.7*	-	3.97
Potato	-	4.8	15.2	42.3	56.17	53.39	5.01
Milk	17	22	53.9	121.8	210.0	221.1	3.68
Egg (Million No)	1832	6172	21101	63024	122049	129600	6.18
Fish	0.75	1.76	3.84	8.4	14.7	16.2	4.42

Figure: Trends in Agriculture Production (Qty in million tonnes)  
Source: Directorate of Economics & Statistics

### Trends in Horticulture Production:

- Over the past two decades, the horticulture sector in India has seen remarkable growth.
- Horticulture production reached **342.33 million tonnes in 2021-22, up from 145.79 million tonnes in 2001-02.**
- The production of horticulture crops has exceeded foodgrain production since 2012-13.
- India is now the **second-largest global producer of fruits and vegetables, trailing only China.**
- Additionally, it holds the **top positions in spice production, consumption, and exportation.**

Year	Food Grain	Horticulture	Vegetables	Fruits	Other
2001-02	212.9	145.79	88.62	43.00	14.17
2005-06	208.6	182.8	111.40	55.36	16.04
2010-11	244.5	240.5	146.55	74.88	19.07
2015-16	251.6	286.2	169.06	90.18	26.95
2020-21	310.74	334.60	200.4	102.48	31.68
2021-22	315.62	342.33	204.84	107.24	30.25
CAGR (%)	1.99	4.36	4.28	4.68	3.87

Figure: Horticulture Vis-a-vis Foodgrain Production in India (Quantity in Million Tonnes)  
Source: Agriculture Statistics at a Glance 2022

### Trends in Livestock Production:

- Livestock plays a crucial role **accounting for nearly 30% of India's agriculture and allied services output.**
- India has been the world's **largest milk producer for the past two decades.**
- The poultry sector has also witnessed remarkable growth, **with egg production showcasing an impressive annual compound growth rate of 6.18%.**
- **The aquaculture and fishery sector contribute 7% to the overall output, with India ranking second globally in fish production at 7.58%.**
  - **The Pradhan Mantri Matsya Sampada Yojana** promotes sustainable development in the fishery sector to bring about the **blue revolution.**

### Trends in Agricultural Trade:

- India's export portfolio encompasses a diverse range of products such as **rice, pulses, fruits, vegetables, tea, coffee, tobacco, spices, sugar and molasses, cashew, raw cotton, fish meat, and processed food.**
- Notably, agriculture exports have been growing steadily at a rate of **14.27% per year in 2022-23.**
- India has emerged as the **7th largest exporter of agricultural products globally.**

Years	Agriculture Exports	Percentage of Agriculture Exports to Total Exports	Agriculture Imports	Percentage of Agriculture Imports to Total Imports	Agriculture Trade Balance
1990-91	6013	18.49	1206	2.79	4807
1995-96	20398	19.18	5890	4.8	14508
2000-01	28657	14.23	12086	5.29	16571
2005-06	45711	10.78	15978	3.26	29733
2010-11	113047	10.28	51074	3.41	61973
2015-16	215396	12.55	140289	5.63	75107
2020-21	308830	14.30	154511	5.30	154319
2021-22	375742	11.94	231850	5.07	143892
ACGR(%)	14.27		18.49		

**Figure: Trends in Agricultural Trade**  
Source: Agriculture Statistics at a Glance

- India's agriculture and allied products find major export markets in countries such as **Bangladesh, China, Indonesia, Malaysia, Iran, Japan, Nepal, Pakistan, Netherlands, Thailand, UK, USA, and UAE.**
- Despite its immense agricultural potential, India's agriculture exports currently account for **2.5% of global agri trade and less than 1.7% of world total exports.**
- To enhance its agricultural export share, the **Mission for Integrated Development of Horticulture (MIDH) was launched.**
- Additionally, to promote horticulture products, **several centres for perishable cargoes and post-harvest storage facilities have been established with assistance from APEDA.**

### Conclusion:

Agriculture, the largest employment sector, requires modern technology adoption, accessible credit, affordable interest rates, and timely government intervention in marketing for fair market conditions. These measures will enhance productivity, livelihoods, and food security.

## 6. Dryland Farming

### Introduction:

- Dryland farming is a challenging practice that requires understanding local climate and soil conditions, selecting suitable crops, and utilizing appropriate technologies. This article explores the significance of dryland farming in India, the constraints faced, and the potential for sustainable food security.

### Dryland Farming:

- **Differentiating Dry Farming, Dryland Farming, and Rainfed Farming:**
  - **Dry farming:** Practiced in areas with an annual rainfall of less than 750 mm and a crop growing season under 200 days.
  - **Dryland farming:** Cultivation in regions with rainfall ranging from 750 mm to 1150 mm, including semi-arid areas.
  - **Rainfed farming:** Crop cultivation without irrigation in areas receiving rainfall around 1150 mm, mainly in humid and sub-humid regions.
- **Major Crops in Dryland Agriculture**
  - Millets, oilseeds, pulses, maize, cereals, and cotton are important crops.
  - Millets are drought-resistant, climate-resilient, and eco-friendly crops.
  - Oilseeds and pulses play a significant role in rainfed regions, contributing to vegetable oil production and soil health.



**Supporting Schemes:**

- Per Drop More Crop, Soil Health Card, and Paramparagat Krishi Vikas Yojana contribute to dryland agriculture improvement.

**Importance of Dryland Farming:**

- **Diverse Agro-climatic Zones:** India's unique geographical location results in varied climatic conditions and cropping patterns across the country.
- **Addressing Climate Change:** Dryland farming helps address climate change and ensures sustainable food security.

**Challenges Associated with Dryland Farming**

- **Rainfall Dependency:** Dryland farming relies on natural rainfall, making it vulnerable to erratic and uncertain rainfall patterns.
- **Soil and Nutrient Constraints:** Dryland areas often have poor or degraded soils with low water-holding capacities and nutrient deficiencies.
- **Vulnerability to Drought:** Dryland areas are susceptible to drought and declining groundwater levels.
- **Small Land Holdings:** Dryland farming is challenging due to fragmented and small land holdings.

**Strategies for Sustainable Dryland Farming:**

- **Integrated Farming:** Dryland farmers can increase productivity by adopting integrated farming models with multiple crops.
- **Crop Selection:** Maximizing productivity in dryland conditions requires selecting suitable crops adapted to the environment.
- **Technology Adoption:** Utilizing drip irrigation, water harvesting, and precision farming improves water-use efficiency and yields.
- **Soil Conservation:** Mitigate erosion and retain soil moisture through practices like contour ploughing, terracing, and mulching.
- **Capacity Building:** Empower farmers through training and knowledge transfer on dryland farming techniques.
- **Market Support:** Strengthen market infrastructure and value chains to enhance profitability and market access.
- **Research and Development:** Continued efforts are needed to develop crop varieties and technologies for dryland farming.

**Way Forward:**

- CRIDA (Central Research Institute for Dryland Agriculture) has developed 'The Vision 2050'.
- Emphasis on location-specific research, rainwater harvesting, and soil health management.
- Integrated farming modules for risk-proofing small and marginal farmers.
- Exploiting cutting-edge technologies like remote sensing and GIS for resource characterization.
- Development of nanotechnology-based products for dryland agriculture.
- Implementing energy efficiency, precision agriculture, and renewable energy sources in dryland regions.

**Conclusion:**

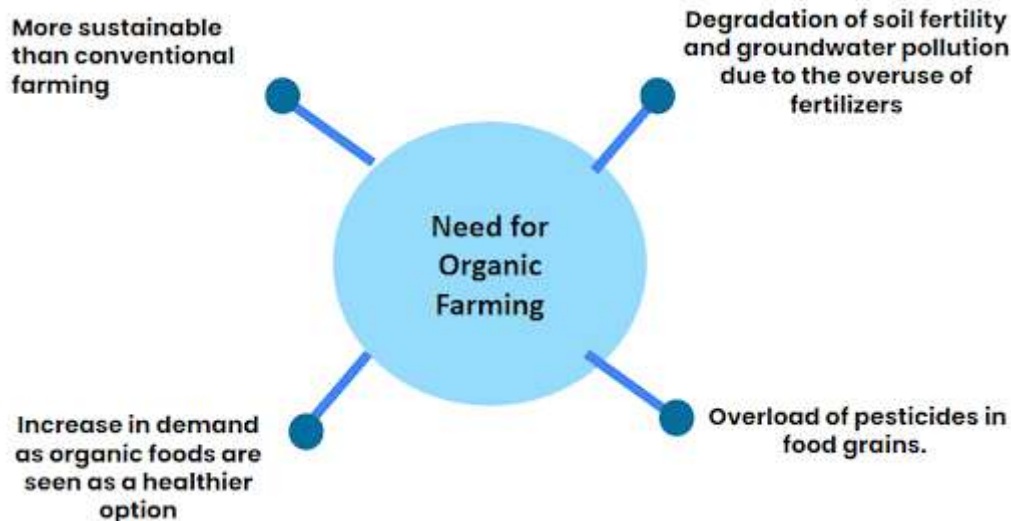
- Dryland farming, despite its challenges, holds immense potential for sustainable agriculture in India. By understanding the local conditions, adopting appropriate practices, and providing necessary support, dryland farmers can overcome constraints and achieve bountiful crop production, contributing to food security and rural development.

**7. Organic Farming: Status and potential**

The National Standards of Organic Production (NSOP) defines organic agriculture as a system of farm design and management to create an ecosystem that can achieve sustainable productivity without the use of artificial off-farm inputs such as chemical fertilisers and pesticides. It is a climate-friendly practice that reduces the use of synthetics in farming and promotes low external input usage, recycling, and reuse.

**Overview of organic farming:**

- According to the 2021 FiBL survey, organic farming is practised in 187 countries, with Australia (35.69 m hectares), Argentina (3.63 m hectares), and Spain (2.35 m hectares) having the most organic agricultural land.
- India is home to 30% of the world's organic producers but only 2% of the country's total net sown area is under organic farming.
- Madhya Pradesh leads in organic agricultural land in India, with 0.76 million hectares under organic cultivation, accounting for 27% of the total organic farming area.
- Madhya Pradesh, Rajasthan, and Maharashtra contribute to half of the area under organic farming in India.
- Sikkim stands as the first complete organic state in India, converting all of its cultivable lands under organic certification.

**Need for organic farming:****Figure: Need for Organic Farming****Export of organic food from India:**

- Agricultural and Processed Food Products Export Development Authority (APEDA) is the nodal agency that promotes the export of agricultural and processed food products, including organic products.
- Key export destinations for Indian organic products include the USA, the European Union, Canada, the UK, Turkey, Australia, Switzerland, Ecuador, and Japan.
- India's primary organic product exports consist of soya meal (61%), oilseeds (12.58%), cereals and millets (12.71%), sugar (4.77%), and plantation crops (2.16%).

Organic agricultural products exported during last 3 years				
S. No.	Year	Exported Qty (In MT)	Value (In Cr)	Value (In USD Million)
1.	2021-22	460320	5249.32	771.96
2.	2020-21	888179	7078.50	1040.96
3.	2019-20	638998	4686.00	689.10

**Figure: Organic agricultural products export**  
Source: Kurukshetra**Government initiatives to promote organic farming:**

- The Paramparagat Krishi Vikas Yojana (PKVY) and Mission Organic Value Chain Development for Northeastern Region offer comprehensive support to farmers, covering production, processing, certification, marketing, and post-harvest management.
- **Paramparagat Krishi Vikas Yojana (PKVY)**
  - Under PKVY, farmers receive Rs. 50,000/ha for 3 years to establish Farmer Producer Organizations (FPOs), obtain organic inputs, and undergo training, guidance, and certification.
  - Additionally, Rs. 20 lakh/cluster of 1000 ha is provided for value addition and infrastructure development.
  - Since 2015-16, 11.85 lakh ha of land has been brought under organic farming, with a target of another 6 lakh hectares by 2026.
- **Mission Organic Value Chain Development for the Northeastern Region (MOVCD-NER)**
  - MOVCD-NER provides farmers with Rs. 46,575 per hectare for 3 years to establish FPOs, obtain organic inputs, and undergo training, guidance, and certification.
  - Additionally, need-based assistance is also provided for establishing integrated processing units, collection and grading units, pack houses, and refrigerated vehicles.
  - Since 2015-16, an area of 1.73 lakh hectares of land has been converted to organic farming through this mission.



- **Organic certification scheme:**
  - **National Programme for Organic Production (NPOP) Certification System:** It ensures compliance with organic standards by reviewing the entire production, processing, handling, storage, and transport through an independent organization.
  - The **Participatory Guarantee System**, under the Ministry of Agriculture and Farmers' Welfare, certifies organic products, guaranteeing that production adheres to laid-down quality standards.
- The dedicated **web portal**, [www.jaivikkheti.in](http://www.jaivikkheti.in), has been established to help farmers secure better prices for their organic produce.

## 8. Sustainable Agriculture: Challenges and Way Forward

### Introduction:

Sustainable agriculture is a much-needed alternative to conventional input-intensive agriculture, which in the long term degrades the topsoil, results in declining groundwater levels, and reduces biodiversity.

### Three Pillars of Sustainable Agriculture:

- **Economy:** This ensures the growth and profitability of the business for the farmers through the efficient use of viable resources.
- **Society:** This pillar ensures enough food for the world's growing population and fair employment and compensation opportunities for the local community.
- **Environment:** This pillar ensures the environment's protection through ecologically sound farming practices and less use of replenishable resources.

According to this definition, sustainable agriculture practices have five major principles:



### Major Sustainable Agriculture Practices:

- **Crop Rotation and Crop Diversity:** Monoculture degrades the soil and is susceptible to pests. Planting a variety of crops has many benefits, including improved pest control.
- **Water and Energy-efficient Irrigation Techniques**
- **Reducing Tillage:** No-till or reduced-fill methods involve inserting seeds directly into undisturbed soil, which can reduce erosion and improve soil health.
- **Integrating Livestock and Crops:** Livestock can feed on the by-products of the farms and crops can receive abundantly rich natural fertiliser and manure.
- **Adopting Agroforestry:** Planting trees along with the crops conserves the soil cover and local water resources but also provides an additional source of income to the farmers.
- **Grow the Cover Crops:** By sowing cover crops off-season, farmers can protect their fields from soil erosion and soil degradation. This acts as green manure for the crops.
- **Integrated Pest Management:** It aims at long-term protection of crop cover on farms by mitigating pest attacks.

### Sustainable Agriculture in India

- Most Sustainable Agriculture Practices (SAPs) are being adopted by **less than five million (or four percent) of all Indian farmers**.
- Crop rotation is the most popular in India, covering around 30 million hectares (Mha) of land and approximately 15 million farmers.
- Agroforestry, mainly popular among large cultivators, and rainwater harvesting have relatively high coverage of 25 Mha and 20-27 Mha, respectively.
- Organic farming currently covers only 2% of India's net sown area of 140 Mha.
- Natural farming is India's fastest-growing sustainable agricultural practice and has been adopted by around 800,000 farmers.
- Integrated pest management (IPM) has achieved a coverage area of 5 Mha after decades of sustained promotion.
- The impact and coverage of practices like floating farming, permaculture, etc. is insignificant.

**National Mission for Sustainable Agriculture**

- Aims to enhance agricultural productivity, especially in rainfed areas focusing on integrated farming, water use efficiency, soil health management, and synergising resource conservation.

Based on the above context, some key recommendations for the successful adoption of sustainable agriculture practices in India are-

**Main Objectives:**

- To make agriculture more productive, sustainable, remunerative, and climate-resilient
- To adopt comprehensive soil health management practices
- To optimise utilisation of water resources through efficient water management to expand coverage for achieving 'More Crop Per Drop',
- To develop the capacity of farmers & stakeholders

**Major Components:**

- **Rainfed Area Development (RAD):** It develops an area-based approach for the conservation of natural resources, and regulates soil nutrients. Common resources are developed like a bank for grains, fodder, shredders for biomass, and a combined marketing initiative.
- **On-Farm Water Management (OFWM):** For optimum utilisation of water by promoting advanced on-farm water conservation equipment and technologies.
- **Soil Health Management:** It promotes sustainable practices that preserve the health of soil based on a specific location and the type of crops.

**Major Challenges in Sustainable Agriculture:**

- The budgetary allocation to NMSA is less. It is only 0.8 per cent of the Ministry of Agriculture and Farmers' Welfare's total budget.
- SAP are knowledge-intensive techniques which require knowledge exchange among the farmers.
- Capacity building among the different types of farmers.
- SAPs are labour-intensive and difficult to adopt by medium to large farmers.

# SCIENCE REPORTER - JULY 2023

## 1. Precision Medicine

### Introduction:

- Precision Medicine is a new approach to healthcare that aims to provide tailor-made treatments based on an individual's unique characteristics. This shift raises important ethical and social questions, such as access, affordability, and fairness.

### Precision Medicine:

- Precision Medicine is a revolutionary approach that provides **customized medical treatments** based on an individual's unique genetic, environmental, and lifestyle factors.
- Precision Medicine relies on **genomics** (studying individual genes), **proteomics** (studying individual proteins), and **metabolomics** (studying metabolic processes) to study genes, proteins, and metabolic processes for tailored treatments.
- Precision Medicine also utilizes big data and AI to analyze vast amounts of data from various sources, leading to personalized treatment plans.

### Precision Medicine Milestones:

- **Key milestones:** Human Leukocyte Antigen (HLA) system discovery, DNA tech advances, and the Human Genome Project, shaping personalized medicine.
- **Advances in Cancer Treatment:** Targeted therapies to attack cancer cells while preserving healthy ones.
- **Potential in Rare Diseases:** Precision Medicine identifies genetic variants for rare diseases.
- **Mental Health Applications:** Precision Medicine pinpoints genetic and environmental factors, enabling personalized mental health treatments.
- **Infectious Disease Management:** Precision Medicine-driven rapid tests identify pathogens, enabling precise antibiotic treatment and combating resistance.

### Implications of Precision Medicine:

- **Limited Access:** High costs may create a two-tiered healthcare system, favoring affluent patients.
- **Data Privacy:** Precision medicine generates large amounts of data on individual patients, raising concerns about privacy and data security.
- **Ethical Concerns:** Traits selection and non-medical use could exacerbate health disparities. This could create new forms of inequality.
- **False Hope:** While Precision Medicine shows great promise, there is a risk of overhyping its benefits and creating false hope for patients and their families.

Pros of Precision Medicine	Cons of Precision Medicine
Tailored treatments with improved outcomes.	Limited access due to high treatment costs.
Early diagnosis leads to better treatment results.	Data privacy and security concerns.
Reduced healthcare costs and hospital stays.	Ethical dilemmas regarding trait selection and discrimination.
Generation of valuable data for disease understanding and new treatments.	Risk of overhyping benefits and creating false hope for patients.

### Way Forward:

- **Funding and Regulations:** Governments must invest in research, infrastructure, and data management while enacting regulations to safeguard genetic data and ensure responsible use of genetic testing.
- **Technological Advancements:** Precision Medicine may involve wearable devices and remote monitoring for proactive care, requiring investments in technology and training for healthcare providers.
- **Education and Training:** Healthcare providers need training in Precision Medicine technologies and genomic data interpretation, emphasizing the need for ongoing professional development.

### Conclusion:

- Precision Medicine has the potential to revolutionize healthcare by providing more targeted treatments and facilitating more proactive and personalized care.
- As Precision Medicine continues to evolve, it will be important to strike a balance between innovation, ethics, and public health in order to maximize the benefits of this exciting new field.

## 2. Empowering Women in S&T

**Introduction:** The **108th Indian Science Congress** organised in Nagpur during 3-7 January 2023 had the **theme 'Science & Technology for Sustainable Development with Women Empowerment'**.

### Potential of Women Empowerment in Nation's Development:

- **Sustainable economic growth:** Women are critical in addressing sustainable development, and women's empowerment is crucial in achieving sustainable economic growth.
- **Potential of Female Population:** Out of the total Indian population, the female population in India is 48% (UN World Population Prospects 2019).
  - India can achieve nearly **700 billion USD** value to GDP by enhancing women labour force participation (**McKinsey Global**).
- **Importance in Agri and Manufacturing:** **India Brand Equity Foundation (IBEF, 2022) report** says that the number of women working in the agriculture and manufacturing sector is higher compared to men.
  - These sectors also play a significant role in **alleviating poverty** by contributing to household income.
- **Multiplier role:** As per the **SDG Index report 2020**, women hold the primary responsibility of **providing nutrition, household management and childcare** and to some extent to **environment management** as well.

### Women focus welfare measures:

- The **Swachh Bharat Mission** has pro-women health as one of its core domains.
- The '**Ujjawala-free gas cylinder**' scheme provides a safe household environment free of toxic smoke.
- Schemes such as '**Beti Bachao, Beti Padhao**' and '**Sukanya Samridhi Yojana**' and mandatory maternity leave rules.
- Unique **Mahila E-Haat initiative** for women entrepreneurs to showcase their products through an online platform.
- **Support to Training and Employment Program for Women (STEP)** provides training in skill development and assure employment to women.
- **SWADHAR Greh scheme** provides basic amenities such as food, clothes and shelter to helpless women.
- **Mahila Shakti Kendras (MSK)** for women catering to their skills, promoting digital literacy and generating employment.

### Women in National Development:

- Policies and programmes and the general thrust towards female literacy have shown results in recent years:
- **Political:**
  - Women's representation in the Parliament increased from 11.6% in 2014 to 14.4% in 2019, as per the SDG Index Report 2020.
  - According to the 73rd amendment, nearly one-third of the women participate in local bodies to govern local and regional affairs.
  - Additionally, it is reported that nearly 44% of the Panchayati Raj representative system has women representation.
- **Economy:**
  - **Women in MSME:** Almost 27% of the MSMEs are owned by women in India, and women account for nearly 23% of the labour force in MSMEs.
  - **Corporate sector:** In the corporate sector, women hold nearly 30% of senior management roles, which is higher than the global average of 24%.
  - **Women and entrepreneurship:** Women comprise around 13% of the total entrepreneurs, with 8 million women entrepreneurs in the country.

### Women contribution in Science:

- Recently, **Dr N Kalaiselvi** was appointed as the **first-ever woman Director General** of the Council of Scientific and Industrial Research (**CSIR**).
- **R&D Projects:** In 2018-19, nearly 28% of the R&D projects were awarded to women, significantly rising from 13% in 2000-01.
- **Women researchers:** The total number of women researchers has also increased from 13.9% in 2015 to 18.7% in 2018. It is projected that by 2030, women's participation in Science will reach 30%.
- **Engineering and Technology:** The highest women participation is in biotechnology (40%), followed by social science and humanities (36.4%) and medicine (35% participation).

### Way Forward:

- There is a need to bring about a **cultural change** and remove impediments faced by women in science, require maternity and family breaks, and leadership and recognition.
- At the post-doctoral level women's participation declines significantly compared to their numbers at the graduation level.
- Currently, women in higher positions are from privileged classes or are second generation scientists.
- There is a need to create safe working environments for women. This also involves establishing working women hostels nationwide.



Programmes for Women in Science		
S. No.	Initiative/Programme	Brief Details
1.	<b>Gender Advancement for Transforming Institutions (GATI)</b>	<ul style="list-style-type: none"> <li>The programme launched by DST aims to develop a framework in the form of a charter to address and assess gender equality in science, technology, engineering and mathematics (STEM).</li> <li>In the first phase, GATI programme is implemented in 30 academic and research institutes.</li> </ul>
2.	<b>Vigyan Jyoti</b>	<ul style="list-style-type: none"> <li>The programme organises talks by women scientists, poster competitions, debates, quizzes and seminars for stimulation of women to participate in science actively.</li> <li>Meritorious girls at the school level are supported to take up and pursue their higher education and career in STEM fields.</li> </ul>
3.	<b>Indo-US Fellowship for Women in STEMM (WISTEMM) program</b>	<ul style="list-style-type: none"> <li>The bilateral arrangement supports Indian women researchers and scientists to avail STEM training from US to gain international training and experience and implement STEM practices in their own country after return.</li> </ul>
4.	<b>Overseas Fellowship for Women</b>	<ul style="list-style-type: none"> <li>DST programme to give women research exposure in international settings to gain training and experience in their respective fields.</li> </ul>
5.	<b>Consolidation of University Research for Innovation and Excellence in Women Universities (CURIE) Programme</b>	<ul style="list-style-type: none"> <li>This programme by DST aims to strengthen R&amp;D infrastructure for women in universities. Through this programme a number of women technology parks have been established all across the country especially in rural areas for supporting rural women.</li> </ul>
6.	<b>Industrial Research Fellowship for Women</b>	<ul style="list-style-type: none"> <li>This scheme is implemented several government departments and provides fellowship to women to work and gain experience in the industrial set up.</li> </ul>
7.	<b>Senior Women Scientists Fellowship programme</b>	<ul style="list-style-type: none"> <li>The programme provides support to senior women scientists performing well in research to further advance their career.</li> </ul>
8.	<b>Women Scientists Programmes (WOS-A, WOS-B and WOS-C)</b>	<ul style="list-style-type: none"> <li>These programmes are initiated by DST to provide support for women who want to enter into research or pursue higher education after a break in their career.</li> </ul>
9.	<b>Women in Engineering, Science, and Technology (WEST)</b>	<ul style="list-style-type: none"> <li>This initiative was started by Indian Science Technology and Engineering Facilities Map (I-STEM) to empower women through various mechanisms for their contribution in STEM field.</li> </ul>
10.	<b>Atal Innovation Mission and Women's Entrepreneurship Platform</b>	<ul style="list-style-type: none"> <li>This initiative by NITI Aayog has created an ecosystem of innovation, research and entrepreneurship across the country, aimed especially at engaging young girls and women.</li> </ul>

Figure: Programmes for Women in science

Source: Science reporter

**Conclusion:** Although women hold crucial positions in the community, they are not represented in the decision-making process at the local, regional, national or international front.

- To promote inclusive science and technology in the country, efforts have to be made to address gender equality, which affects the women population the most.
- In the inaugural speech at **108th Indian Science Congress**, the Prime Minister said that India must prioritise national initiatives with **pro- people, pro-poor and pro-women dimensions**.

### 3. Kadambini Ganguli: India's First Lady Medical Practitioner



Figure: Dr Kadambini Ganguli

Source: Science reporter

#### Introduction:

- Kadambini Ganguli was born on 18 July 1861 in Bhagalpur, present-day Bihar.
- Her father, Braja Kishore Bose, was a school teacher and an ardent follower of Brahmo Samaj's ideals.
- She got married to Dwarkanath Ganguli, also a school teacher, on 12 June 1883.



**Education:**

- Kadambini Ganguli received English education from Brahmo Eden Female School and later joined Bethune School, Calcutta.
- In 1880, she became the **first woman to pass the entrance exam of Calcutta University** (First Arts exam).
- Alongside Chandramukhi Bose, she became the **first female graduate (BA) in British India from Bethune College in 1883**.
- In **1884, she became the first woman to gain admission to Calcutta Medical College**, breaking barriers as female candidates were not allowed to study medicine at the time.
- Later, she completed **triple diplomas in medical sciences** at the **Scottish College, Edinburgh**, becoming the **first lady doctor in South Asia to achieve this**.

**Struggles:**

- In college, Kadambini Ganguli faced ridicule from teachers and students who vehemently opposed the idea of women's education.
- She was intentionally failed by a professor, preventing her from obtaining an MB degree certificate in 1888. She received only a certificate of First LMS examination from Calcutta University.
- As per the practice, Dr JM Coates, the then-principal, awarded her a Graduate of Medical College of Bengal (GMCB) diploma, enabling her to begin a private practice.
- In 1888, she joined Lady Dufferin Hospital in Calcutta, but British doctors looked down upon her due to biases against female doctors.
- Later, she attempted to start her private practice, but due to the prevailing bias against female doctors in society, it went unsuccessful.

**Work:**

- After getting the triple diploma, she was accepted as Sr. Lady Doctor at Lady Dufferin Hospital and later became the doctor-in-charge of Eden Female Hospital.
- **She became India's first lady professor at a medical college in 1898**, appointed as Professor of Gynecology and Obstetrics at Campbell Medical School, Calcutta.
- She was one of the six members of the **first all-women delegation to the 1889 Indian National Congress (INC)**.
- During the **1889 INC annual session, she moved the vote of thanks**, and in the 1890 session, she delivered a remarkable lecture in English.
- She organized the **Women's Conference in Calcutta in 1906**, following the partition of Bengal.
- In 1915, she spoke out against Calcutta Medical College's policy of not admitting female candidates, leading to a change in their policies and opening doors to all female candidates.

**First female to receive medical degree in Western medicine**

- Dr **Anandibai Gopal Joshi** obtained her MB degree from the Women's Medical College, Pennsylvania in 1886; however, she tragically passed away due to tuberculosis in 1887, before commencing her medical practice.
- Thus, **Dr Kadambini became the first female practitioner of Western medicine in India**, while **Dr Anandibai was the first female in receiving a medical degree in Western medicine from the West**.

**Conclusion:**

- **Annie Besant** in her book '*How India Fought Her Freedom*' hailed Kadambini Ganguli as a **"symbol that India's freedom would uplift India's womanhood"**.
- Her fame stemmed not just from academic achievements but also from her determination to overcome obstacles, dedication to serving humanity, and passion for her country's freedom struggle.

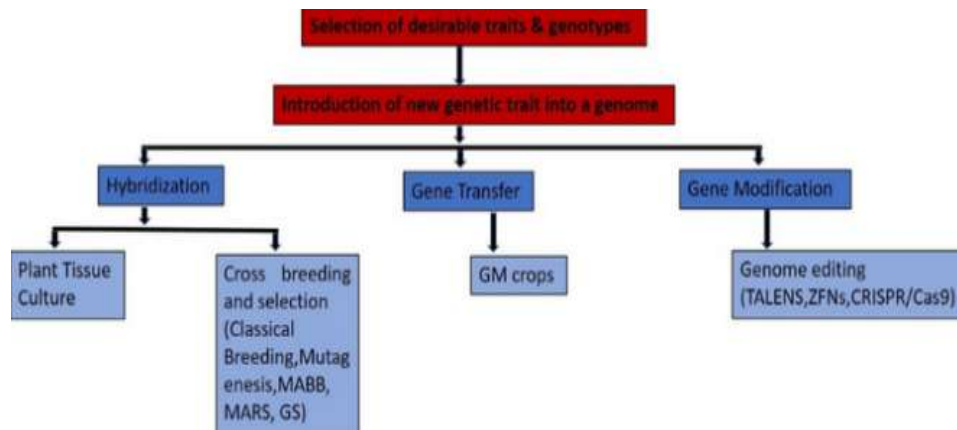
#### 4. The Journey of Crop Improvement

**Introduction:** Throughout history, humans have always been in search of superior crop varieties with desirable traits. This has led to the development of new and improved varieties over a period of many years and this process of crop improvement is still ongoing.

##### Need for crop improvement:

- **Human Population:** With the global population projected to grow to 10 billion by 2050, more efficient agriculture production systems to meet the growing demands.
- Addressing the challenges of **climate change, food security and nutritional security.**

##### Different Crop improvement strategies



**Figure: Different Crop improvement strategies**

Source: [sciencereporter.niscpr.res.in](http://sciencereporter.niscpr.res.in)

- The different methods of crop improvement can be broadly categorised as hybridisation-based methods, Gene transfer and Gene modification through biotechnological means.

##### Hybridisation:

- **Cross-breeding:** It involves the selection and breeding of genetically different organisms to produce desired traits in the offspring. Limited genetic variation in crop species is a challenge in cross breeding.
- **Mutagenesis:** It is the method by which genetic composition of an organism is altered through mutations. It includes
  - **Physical mutagens** (gamma rays, X-rays, ion beams, etc.)
  - **Chemical mutagens** (ethyl methane sulphonate (EMS));
  - **Site-directed mutagenesis:** creating a mutation at a defined site in a DNA molecule.
  - **Insertion mutagenesis:** Caused due to random DNA insertions.
- According to the FAO/IAEA Mutant Varieties Database 2015, 3,222 mutant plant varieties have been officially released globally.

##### Genetic Modification:

###### Gene transfer:

- It involves the transfer of genes between species to develop particular traits and the new crops created is called a transgenic crop.
- It is much more precise as it transfers only the desired gene or genes to the recipient plant and avoids the transfer of undesirable genomic fragments to the plant.
- As per ISAAA's Global Status of Commercialised Biotech/GM Crop, 70 countries adopted biotech crops through cultivation and importation. Eg: herbicide-tolerant soybean insect-resistant sugarcane etc.

###### Genome editing:

- The genome editing is a collection of advanced molecular biology techniques which allow precise and targeted modifications at predefined genomic loci. It has a lower perceived risk as compared to GM crops. Eg: CRISPR-CAS9

##### Issues with genetic modification:

- **Consumer acceptance:** Conventional and mutation breeding varieties are more readily accepted than GM Crops. Eg: BT-Brinjal in India.
- **Unknown consequences:** Adverse effects on human health and environment not fully understood.
- **Legislative hurdles:** Strict legal frameworks for approving commercialisation of GM crops.

**Conclusion:** To ensure global food security and sustainable crop improvement in the face of adverse climatic conditions, a progressive, scientifically-backed approach is essential for selecting the best crop improvement methods.

## DOWN TO EARTH - JULY 2023

### 1. Third pole melting away

#### Background:

- The Hindu Kush Himalayas are experiencing an increase in mean temperature across the entire region, with a 0.28°C per decade average detected between 1951 and 2020.
- The recent assessment from the International Centre for Integrated Mountain Development (ICIMOD) shows it is likely to impact the cryosphere, and in particular glacial melt.
- The paper claims that during the first two decades of this century, the mass loss of glaciers has accelerated.

#### Importance of the region:

- **60% of the Himalayan region features seasonal cryosphere (snow, glaciers, permafrost and glacial lakes)**, a major source of water and ecosystem services, which is vulnerable, major contributor of water for Himalayan rivers like the Ganga, the Brahmaputra and the Indus

#### International Centre for Integrated Mountain Development (ICIMOD):

- International Centre for Integrated Mountain Development (ICIMOD), is an intergovernmental institute serving the eight Himalayan countries.
- ICIMOD is leading the global effort to safeguard the Hindu Kush Himalayas.

#### Observations:

- The average annual rate of glacial mass loss has increased by 65% from -0.17 meters of water equivalent per year for the years 2000 to 2009 to -0.28 meters of water equivalent per year for the years 2010 to 2019.
- Under high emission scenarios, Two-thirds of permafrost on the Tibetan Plateau will be degraded by 2071-99.
  - **The western Himalayas lost 8,340 square kilometers of permafrost between 2002 and 2018** whereas the Uttarakhand Himalayas lost 965 square kilometers between 1970 -2000 and 2001 -2017.
  - Himalayan glaciers are predicted to lose 30–50% of their volume by 2100 under a global warming level of 1.5–2°C.
  - The West Kunlun and Karakoram regions, which are densely covered in glaciers, will have only around 50% of their current glacier volume by the year 2100 if global warming exceeds 4°C.
  - In all other regions, glacier-covered area will be reduced to less than 30 percent of the 2020 area.
- As the glaciers keep melting and getting smaller, the water begins to slowly recede. Icimod refers to this point as peak water, when the transition from increasing glacier runoff to decreasing glacial runoff occurs.
  - By the middle of the century, most basins will achieve their peak water levels, and by 2100, water availability will be declining.
- Between 2070 and 2100, the Hindu Kush Himalayas will likewise experience a drop in snowfall of 30–50% in the Indus basin, 50–60% in the Ganga basin, and 50–70% in the Brahmaputra basin compared to the average from 1971 to 2000.
- Snow and glacier melt replenishes about 83% of springs, the primary water source for mountain populations.
  - 240 million people in the mountains and 1.65 billion people downstream will be impacted by a decrease in snow cover.
- **According to the report, calamities including landslides, avalanches, and glacial lake outburst floods (GLOFS) have been more frequent recently.**
  - Snow avalanches may grow due to warming, whereas GLOFS will increase due to glacial retreat, especially by the middle of the century.
- The report addresses species loss and extinction, ecological degradation, and range shifts for biodiversity.
  - It predicts that by 2100, over a quarter of the endemic species in the Indian Himalayas may be extinct.

### 2. TOXIC TRAIL

#### Introduction

- The state of Punjab is facing a severe water pollution crisis that is causing various health issues in its residents. Punjab's water pollution crisis stems from **industries, agriculture, and poor waste management**.
- Contamination has severe **health and environmental impacts**, affecting thousands of lives. This article examines the pollution route, the impact on health, and the urgent need for solutions.



### Causes of Water Pollution:

- More than half of Punjab's districts have reported dangerous levels of **uranium, arsenic, cadmium and lead** in their groundwater.
- The Groundwater yearbook 2021-22 highlights Punjab as India's worst affected state, with 29% of wells exceeding the uranium concentration limit of 30 parts per billion.
- Water pollution in Punjab is primarily caused by **industrial activities**, especially in cities like Ludhiana, where **electroplating and dyeing units release untreated effluents** into water bodies.
- Additionally, **intensive agricultural practices involving the excessive use of pesticides and fertilizers** lead to runoff that contaminates rivers and groundwater.
- **Inadequate waste management** further exacerbates the problem.

### Consequences of Water Pollution:

- **Health Impacts:**
  - Heavy metals and pollutants present in the water have been linked to an increased risk of **cancer, cognitive impairment, organ damage**, and various other ailments.
  - The presence of uranium in groundwater poses a dual threat of **chemical and radiological toxicity**, impacting the **lungs, kidneys, and central nervous system**.
  - **Children are particularly vulnerable**, with many suffering from **developmental issues and dental problems**.
- **Impact on Agriculture:**
  - Significant **reduction in crop yields, particularly in cotton, wheat, and rice**, due to the **accumulation of heavy metals and pollutants** in the produce.
- **Environmental Degradation:**
  - The contamination of water bodies adversely affects **aquatic life, leading to the decline of fish populations** and overall ecosystem imbalance.
  - It may **pollute the top soil and shallow groundwater sources** also.

### Need for Remedial Measures

- The situation demands immediate action from both the **government and the private sector**.
- The contamination of water bodies like **Buddha Nullah and the Sirhind Feeder Canal** must be addressed through **effective waste management and water treatment solutions**.
- Measures such as **regular water quality monitoring, strategic sampling after rainfall, and comprehensive studies** are essential to understand the extent of pollution and its effects accurately.
- Promoting organic farming and educating farmers about sustainable practices can minimize agricultural runoff, improving water quality and safeguarding livelihoods and the environment.
- Moreover, there should be a **concerted effort to provide safe drinking water to the affected villages**.
- **Reverse osmosis water treatment plants** should be made **accessible and operational** in all affected areas.
- **Public awareness campaigns** on the hazards of consuming contaminated water should also be undertaken to encourage behavioral change.

### Conclusion

Urgent action is required to combat the contamination of water sources, provide clean drinking water, and mitigate the adverse health impacts on the residents. Only through a collective effort can Punjab overcome this environmental crisis and ensure a healthier future for its people.

### 3. DTE: Money Matters

#### Introduction:

- The article discusses the recent UN Framework Convention on Climate Change's Subsidiary Body 58 (SB 58) in Bonn, Germany, which was held to prepare frameworks for adoption at the upcoming **28 Conference of Parties (COP28) to UNFCCC in UAE in December 2023**.
- It witnessed heated debates on **climate finance** between developed and developing country groups.

#### Heated debates on climate finance:

- Disagreements revolved around the **mitigation work programme (MWP)** introduced by the European Union, which developing countries insisted puts an unjust mitigation burden on them while sidelining the developed world's commitment to transfer money and technology for equitable climate mitigation and adaptation.
- Bolivia, representing the **Like-Minded Developing Countries (LMDCS)**, introduced a separate agenda on finance in line with **Article 2.2 of the Paris Agreement**, emphasizing equity, common but differentiated responsibilities, and respective capabilities.

#### Like-Minded Developing Countries (LMDCS):

- "Like-Minded Developing Countries" (LMDC) refers to a loose coalition of developing nations that share common interests and goals on various international issues.
- It asks developed countries to meet the commitments they have made without necessarily spelling out the actions to be taken by developing countries.

#### Article 2.2 of the Paris Agreement:

- It states that "this Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capacities, in the light of different national circumstances"

- The adoption of the agenda was delayed, and it was finally accepted on the penultimate day of the conference after a compromise was reached to exclude the agenda item on MWP from the formal agenda.

#### LMDC proposal on finance:

- The LMDC group proposed a separate agenda on finance in line with Article 2.2 of the Paris Agreement.
- However, rich countries did not want to discuss providing more finance, and developing countries resisted stronger mitigation targets.
- As a result, negotiations on crucial agenda items, such as assessing the outcomes of the global stocktake or progress made towards the **Global Goal on Adaptation (GGA)**, got sidelined.

#### Global Goal on Adaptation (GGA):

- The Global Goal on Adaptation (GGA) was established under the Paris Agreement to enhance climate change adaptation by increasing awareness of and funding towards countries' adaptation needs in the context of the 1.5/2°C goal of the Paris Agreement.

#### Global stocktake:

- **Global stocktake** is an "accountability exercise" to assess collective progress toward meeting the goals of the Paris Agreement

- Little progress was made on what to include under GGA, established under the Paris Agreement to enhance climate change adaptation.
- Parties could not come to a consensus on whether there should be overarching targets and separate targets for GGA or just shared adaptation priorities.

**Conclusion:** The issue of financial flows enshrined in Article 2.1 C of the Paris Agreement raised concerns, with developed countries demanding all investments be channeled towards climate purposes while developing countries expressed reservations about potential impacts on poverty eradication funding.

### 4. A job not done

#### Introduction:

- Unemployment continues to be a pressing issue in India, particularly in **urban areas where job opportunities are scarce**.
- To tackle this challenge, various states have launched urban employment guarantee schemes, inspired by the success of the **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**.
- One such scheme is the **Indira Gandhi Shahari Rozgar Yojana (IGRY)**, implemented in **Rajasthan**, which promises **100 days of assured unskilled employment to urban dwellers** who demand work.
- While these initiatives are commendable, experts argue that **a more comprehensive and centralized approach is needed** to effectively address urban unemployment.



### Overview of Urban Employment Guarantee Schemes:

- **Jharkhand and Odisha** launched similar programs in **2020** after the first wave of the Covid-19 pandemic **triggered mass-scale reverse migration from urban to rural regions** due to job unavailability.
- **Kerala was the pioneer**, introducing its urban employment guarantee scheme in 2011, **followed by Himachal Pradesh in 2019**.
- Post-Covid-19, the demand for such programs has surged, reflecting a **growing need to address urban unemployment**.

### Indira Gandhi Shahari Rozgar Yojana (IGRY):

- The IGRY, launched in Rajasthan with the highest allocation of ₹800 crore for an urban employment guarantee scheme, has shown promising initial results.
- **Work opportunities are mostly focused on city beautification.**
- **More women than men have enrolled** due to the **proximity of work** to their homes.

### Challenges faced by Indira Gandhi Shahari Rozgar Yojana (IGRY):

- **Low wage provided to workers**, which is often **insufficient to attract skilled or male laborers**.
- Private contractors traditionally perform the works allowed under the scheme, **paying higher wages than the scheme's rate**. This **discourages people from seeking work** under the program.
- **Wages less than market rate.**
- **Payment delays and limited staff training.**

#### Kerala's Experience:

- **Kerala's Ayyankali Urban Employment Guarantee Scheme (AUEGS)** has been in operation for over a decade with **0.32 million families** benefiting from it.
- Though similar in design to MGNREGA, **AUEGS faces challenges due to**
  - **Scattered urban workforce**, leading to **fewer enrolments**.
  - **Workers often withdraw unexpectedly** for other urban job opportunities.
  - **Budget constraints**, with limited funds spent on implementation.
- Kerala has recently introduced a welfare fund for AUEGS beneficiaries, providing **pensions, medical aid, and educational support**.

### A Call for a Comprehensive Central Scheme:

In April 2023, **India's urban unemployment rate was 9.8%, 2.5 percentage points higher than rural unemployment.**

- Experts argue that **state-level initiatives**, although a positive step, are **unlikely to significantly reduce overall urban unemployment**.
- **Calls for a comprehensive central scheme**, guaranteeing **100 days of work** at a fair wage for urban workers.
- Such a program would require **substantial investment**, but it has the potential to benefit millions of urban workers.
- Centre should **issue job stamps to approved institutions**, which can convert them into **person-days of work**. The government would **directly pay wages to workers' accounts upon presentation of certified job stamps**, and an **independent placement agency** would assign employees to prevent collusion.

**Conclusion:** Urban employment guarantee schemes offer hope for struggling families but face challenges like low wages and budget constraints. A well-implemented central scheme can provide financial security and opportunities for urban dwellers.

## 5. Heal the System

### Introduction:

- **AYUSH** (Ayurveda, Yoga, Naturopathy, Unani, Siddha, Homeopathy, and Sowa Rigpa) is India's traditional medical system. In India, the number of Ayurveda institutions has increased from **35 in the 1940s to 453** in May 2022. There are 352 private institutes among these.
- The **Bachelor of Ayurvedic Medicine and Surgery (BAMS) program** is five and a half years in length and includes a year-long internship, similar to the Bachelor of Medicine and Bachelor of Surgery (mbbs).

### Issues and Challenges in AYUSH:

- **Questionable Procedure:** These colleges are currently being established using a procedure that has been frequently questioned over the last two decades.
- **No mandatory prior approval:** There is no legal requirement to acquire prior consent from the Central Government or the Central Council. This has resulted in the growth of subpar colleges.
- **Curriculum:** The Ayurvedic curriculum does not describe how Ayurveda applies to public health. There are hardly no original Ayurvedic texts available.
- **Faculty Team:** An Ayurveda institute must have an **eight-member faculty for contemporary medicine**. However, colleges frequently disregard this standard, pushing Ayurvedic practitioners to teach Western medicine.
- **Student-to-bed ratio:** An institute must have a **student-to-bed ratio of 1:1**, with similar standards for out-patient and in-patient departments. However, analysts claim that not all institutes can satisfy these standards.
- **Regulatory issues:** Ayurvedic medicines were initially examined by India's Drugs Enquiry Committee in 1930, which found that practitioners were resistive to regulation.
- In India, there is no standard composition for Ayurvedic medications.

### Steps Taken to promote AYUSH:

- **National ayush Mission:** In 2014, the ayush ministry announced the National Ayush Mission, which includes a focus on strengthening educational systems.
- **State led Ayush Policy:**
  - **Kerala Ayush Policy 2016:** One of the aims is to elevate ayush colleges to “premium quality”.
  - **Uttarakhand Ayush Policy 2018:** To upgrade medical education institutes and implement a robust regulatory framework to ensure standardised quality education.
- States such as Maharashtra, Tamil Nadu, Bihar, and Uttar Pradesh have permitted ayurvedic practitioners to administer modern medicine.
- The AYUSH Department published “**Good Clinical Practices** for Ayurvedic, Siddha, and Unani (ASU) Medicines.”
- The **Drugs and Cosmetics Act of 1940**, amended in 1964, permitted the use of patented and proprietary Ayurvedic medications.

### Need for direction:

- **Regulatory framework:** Many contend that Ayurvedic remedies, like modern medications, require a regulatory framework to provide precautions in the event of side effects.
- **Skill Reinvention:** Only approximately five or six people still practice Ayurveda. “The skill set needs to be reinvented and reintroduced so that students of the current program can be appropriately armed to address the needs of society.”
- **Fill health gaps:** Ayurveda practitioners cover health gaps left by MBBS doctors, particularly in rural areas. It should be made clear that they would be using Ayurvedic medicine.
- **Short-term solution:** Ayurveda practitioners practicing modern medicine should only be seen as a short-term remedy, and students must receive specific training.

### Conclusion:

- The country had reached a doctor-to-population ratio of 1:834, which was higher than the WHO’s suggested level of 1:1,000.
- This ratio was arrived at by “assuming 80 percent availability of registered allopathic doctors [a total of 1.3 million] and 565,000 ayush doctors” in the country.
- Although ASU systems have a long history of being safe and effective, validation of safety and efficacy using scientific and evidence-based techniques is required for broad approval.

## 6. Watered down

### Introduction:

For decades, India has been cleaning up its polluted rivers. The country has spent over 4,000 crore on two major programs, Namami Gange and the National River Conservation Plan, in the last three years alone.

- Aside from the two flagship schemes, several other Central programs, like the Swachh Bharat Mission and the Smart Cities Mission, incorporate river pollution prevention components.

### States role in revival of rivers:

Beginning in 2019, the emphasis in revival programs has shifted to encompass small rivers and tributaries. Every state is now working to revitalize small rivers.

- **UTTAR PRADESH:** The state government announced in July 2022 that 60 rivers had been revived in the previous five years. The reality, on the other hand, is completely different. Gomti is one of the 60 rivers, and according to the 2022 cpcb assessment, it is the fifth most contaminated river in the country.
- **BIHAR:** After investing over ‘3 crore to desilt the riverbed and initiate plantation campaigns, East Champaran district cleaned up an 80-km length of the Dhanauti river, a tributary of the Burhi Gandak, in 2020.
- **MADHYA PRADESH:** The state has designated 12 districts for Namami Gange restoration work, but not a single river rejuvenation project has been selected to date.
- **KERALA:** The state has a good track record of rejuvenating small rivers through its **Haritha Keralam Mission**, which uses Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) funds for the works.

### Issues in river cleaning in India:

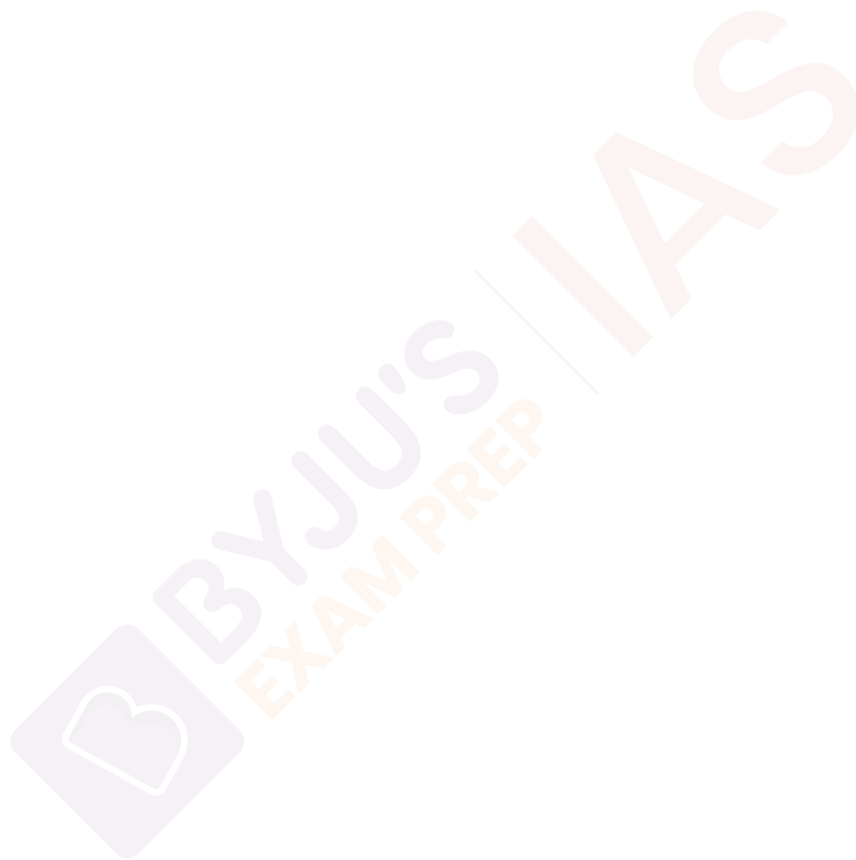
- According to a report released by the Central Pollution Control Board in December 2022, **46 percent of the 603 Indian rivers are still polluted.**
- **Focus on major rivers:** River cleanup efforts in India have failed since the country has focused mostly on big rivers. However, little rivers eventually combine with larger rivers, polluting them.
- **Common effluent treatment facility:** The common effluent treatment facility and sewage treatment plant are yet to be built by the authorities in many states.
- **Local inhabitants are prohibited** from fishing, which is a source of income for many.
- Rejuvenation programs in India are “colonial in the sense that they **exclude the people from decision-making.**”
- **Lack of inter departmental coordination:** If government agencies collaborate, the revitalization process will be more effective.
  - For example, the forest department, which is in charge of plantation drives along rivers, is not included in the objective.
- **Ignorance of Small rivers:** Small rivers have been ignored for so long that even tracing their paths is difficult.

**Way Forward:**

- It is necessary to clean midland stretches, streams, and merging rivers. However, this does not imply that the river has been revitalized.
- Authorities must begin at the source and work their way down to the point where the water flows into the sea or backwaters.

**Conclusion:**

In order to successfully implement the river revival plan, there is a need for a strategic blueprint that includes strict monitoring, mass awareness campaigns, use of digital media, and conservation of biodiversity.



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