# BYJU'S EXAM PREP | IAS

# UPSC MONTHLY CURRENT AFFAIRS MAGAZINE

Now even more
## COMPREHENSIVE & HOLISTIC

WHATS NEW?

## Important Current Affairs.
## Six Sources. One Place.

THE HINDU | Kurukshetra | YOJANA

The Indian EXPRESS | DownToEarth | Science Reporter

# 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

# TABLE OF CONTENTS

# BYJU'S EXAM PREP | IAS

BYJU'S IAS present another comprehensive learning program for UPSC aspirants. The **BYJU'S Home Learning Program (BHLP)** provides you with the opportunity to attend live classes conducted by India's best IAS faculty, from the comfort of your homes, assuring you uninterrupted learning so that you can clear the IAS exam with ease. Check the program details below.

## Here's how you can get started:

- Attend Live Classes by India's Leading IAS Trainers
- Choose a slot that works best for you

| Morning Batch | Evening Batch | Weekend Batch | |
|---|---|---|---|
| Monday to Friday 06:30 AM to 09:00 AM | Monday to Friday 05:30 PM to 08:00 PM | Saturday 02:00 PM to 08:00 PM | Sunday 10:00 AM to 06:00 PM |

- Participate in the 'Doubt Destroyer' session

## How will BYJU'S Home Learning Program help you in your preparation?

**Test Yourself:** Evaluate your performance by attending weekly MCQ-based and descriptive tests.

**IAS Tab:** Get a complimentary IAS learning tab with pre-recorded video lectures for revising important concepts and topics.

**Comprehensive Study Material:** Study material provided is complete and includes well-known books like Indian Polity by M Laxmikanth, Ancient History by R S Sharma, etc.

**Current Affairs Webinars:** Be a part of the two-hour live sessions every Tuesday and Thursday for Current Affairs analysis of major newspapers, magazines, and RSTV debates.

**Exclusive access to BYJU'S IAS Student Portal:** This provides you with unlimited access to Prelims and Mains based questions, Monthly Magazines covering Current Affairs, 'Issues In News', and recorded webinar sessions.

**Mentor Support:** You will be assigned a mentor who will guide you throughout your preparation process.

For more information about the program contact us at **iaslive@byjus.com** or call us on **+91 9241333666.**

Stay safe and Keep Learning!

**Team BYJU'S**

# BYJU'S EXAM PREP | IAS

## Online Classroom Program

### YEAR LONG TIMETABLE
#### (Morning Batch)
#### Monday to Friday - 6:00 AM to 9:30 AM

| Slots | Batch 1 | Batch 2 | Batch 3 | Batch 4 | Batch 5 | Batch 6 | Batch 7 |
|---|---|---|---|---|---|---|---|
| 1st Feb to 6th March, 2023 | Polity | | | | | | |
| 7th March to 10th April, 2023 | Economics | Economics | | | | | |
| 11th April to 15th May, 2023 | Modern History + Post Independent India | Modern History + Post Independent India | Modern History + Post Independent India | | | | |
| 16th May to 16th June, 2023 | Geography | Geography | Geography | Geography | | | |
| 19th June to 21st July, 2023 | Ethics + Governance | Polity | Polity | Polity | Polity | | |
| 24th July to 25th August, 2023 | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Economics | Economics | Economics | Economics | |
| 28th August to 3rd October, 2023 | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Modern History + Post Independent India | Modern History + Post Independent India | Modern History + Post Independent India | Modern History + Post Independent India |
| 4th October to 7th November, 2023 | International Relations + World History | International Relations + World History | International Relations + World History | International Relations + World History | International Relations + World History | Polity | Polity |
| 8th November to 12th December, 2023 | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Geography | Geography | Geography |
| 13th December to 17th January, 2024 | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT | Economics |
| 18th January to 21st February, 2024 | Focus Prelims | Ethics + Governance | Ethics + Governance | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper |
| 22nd February to 27th March, 2024 | Focus Prelims | Focus Prelims | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture |
| 28th March to 2nd May, 2024 | Focus Prelims | Focus Prelims | Focus Prelims | Focus Prelims | Focus Prelims | International Relations + World History | International Relations + World History |
| 3rd May to 22nd May, 2024 | Focus Prelims | Focus Prelims | Focus Prelims | Focus Prelims | Focus Prelims | Focus Prelims | CSAT |
| 23rd May to 2nd June, 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 |
| 3rd June to 5th July, 2024 | | | | Ethics + Governance | Ethics + Governance | Ethics + Governance | Ethics + Governance |
| 8th July to 9th August, 2024 | | | | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management |
| 12th August to 27th August, 2024 | | | | | | | Internal Security |
| 1st September to 30th September, 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 |

# BYJU'S EXAM PREP | IAS

## Online Classroom Program

## YEAR LONG TIMETABLE
### (Evening Batch)
### Monday to Friday - 5:00 PM to 8:30 PM

| Slots | Batch 1 | Batch 2 | Batch 3 | Batch 4 | Batch 5 | Batch 6 | Batch 7 |
|---|---|---|---|---|---|---|---|
| 1st Feb to 6th March, 2023 | Modern History + Post Independent India | | | | | | |
| 7th March to 10th April, 2023 | Geography | Geography | | | | | |
| 11th April to 15th May, 2023 | Polity | Polity | Polity | | | | |
| 16th May to 16th June, 2023 | Economics | Economics | Economics | Economics | | | |
| 19th June to 21st July, 2023 | Ethics + Governance | Modern History + Post Independent India | Modern History + Post Independent India | Modern History + Post Independent India | Modern History + Post Independent India | | |
| 24th July to 25th August, 2023 | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Geography | Geography | Geography | Geography | |
| 28th August to 3rd October, 2023 | International Relations + World History | International Relations + World History | International Relations + World History | Polity | Polity | Polity | Polity |
| 4th October to 7th November, 2023 | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT | Economics | Economics | Economics |
| 8th November to 12th December, 2023 | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Modern History + Post Independent India | Modern History + Post Independent India |
| 13th December to 17th January, 2024 | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Geography |
| 18th January to 21st February, 2024 | Focus Prelims | Ethics + Governance | Ethics + Governance | Ethics + Governance | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT |
| 22nd February to 27th March, 2024 | Focus Prelims | Focus Prelims | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper |
| 28th March to 2nd May, 2024 | Focus Prelims | Focus Prelims | Focus Prelims | Focus Prelims | Focus Prelims | Focus Prelims | Ancient India + Medieval India + Art & Culture |
| 3rd May to 22nd May, 2024 | Focus Prelims | Focus Prelims | Focus Prelims | International Relations | International Relations | International Relations | International Relations |
| 23rd May to 2nd June, 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 |
| 3rd June to 14th June, 2024 | | | | World History | World History | World History | World History |
| 18th June to 22nd July, 2024 | | | | | Ethics + Governance | Ethics + Governance | Ethics + Governance |
| 23rd July to 27th August, 2024 | | | | | | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management |
| 1st September to 30th September, 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 |

# BYJU'S EXAM PREP | IAS

## Online Classroom Program

### YEAR LONG TIMETABLE
(Weekend Batch)
Saturday - 12:00 PM to 8:00 PM | Sunday - 10 AM to 8 PM

| Slots | Batch 1 | Batch 2 | Batch 3 | Batch 4 | Batch 5 |
|---|---|---|---|---|---|
| February (04, 05, 11, 12, 18, 19, 25 & 26) + March (04, 05 & 11) | Economics | | | | |
| March (12, 18, 19, 25 & 26) + April (01, 02, 08, 09, 15 &16) | Polity | Polity | | | |
| April (23, 29 & 30) + May (06, 07, 13, 14, 20, 21, 27 & 28) | Geography | Geography | Geography | | |
| June (03, 04, 10, 11, 17, 18, 24 & 25) + July (01, 02 & 08) | Modern History + Post Independent | Modern History + Post Independent | Modern History + Post Independent | Modern History + Post Independent | |
| July (09, 15, 16, 22, 23 & 30) + August (05, 06, 12, 13 & 19) | Environment & Ecology + Science & Technology + Compulsory Language Paper | Economics | Economics | Economics | Economics |
| August (20, 26 & 27) + September (02, 03, 09, 10, 16, 17, 23 & 24) | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Polity | Polity | Polity |
| September (30) + October (01, 07, 08, 14, 15, 21, 22, 28 & 29) + November (04) | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management | Geography | Geography |
| November (05, 11, 18, 19, 25 & 26) + December (02, 03, 09, 10 & 16) | Ethics + Governance | Ethics + Governance | Ethics + Governance | Ethics + Governance | Modern History + Post Independent |
| December (17, 23, 24, 30 & 31) + January '24 (06, 07, 13, 14, 20 & 21) | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT | Internal Security + CSAT |
| January '24 (27 & 28) + February '24 (03, 04, 10, 11, 17, 18, 24 & 25) + March '24 (02) | Focus Prelims | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper | Environment & Ecology + Science & Technology + Compulsory Language Paper |
| March '24 (03, 09, 10, 16, 17, 23, 24, 30 & 31) + April '24 (06 & 07) | Focus Prelims | Focus Prelims | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture | Ancient India + Medieval India + Art & Culture |
| April '24 (13, 14, 20, 21, 27 & 28) + May '24 (04, 05, 11, 12 & 18) | International Relations + World History | International Relations + World History | International Relations + World History | International Relations + World History | International Relations + World History |
| 31st May to 11th June, 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 | PRELIMS 2024 |
| June '24 (01, 02, 08, 09, 15, 16, 22, 23, 29 & 30) + July (06) | | | | Social Issues & Social Justice + Essay + Disaster Management | Social Issues & Social Justice + Essay + Disaster Management |
| July '24 (07, 13, 14, 20, 21, 27 & 28) + Aug '24 (03, 04, 10 & 11) | | | | | Ethics + Governance |
| 1st September to 30th September, 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 | MAIN 2024 |

For queries please mail us at iaslive@byjus.com

# BYJU'S EXAM PREP | IAS
## YouTube Channel

**SUBSCRIBE**

## The Hindu News Analysis

- Analysis of **"The Hindu"** in a crisp and well-explained format.
- The videos are short, with an average length of not more than 25 minutes each.
- Ideal for working aspirants and others who have a time constraint.
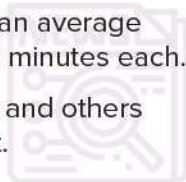
**Click Here**

## History Essentials for UPSC CSE

- Revision of all the important topics of History
- Initiative to clear the concepts
- Crisp content

**Click Here**

## Geography Essentials for UPSC CSE

- Covers the most important topics from Geography for UPSC in great detail.
- Clear explanations of concepts.
- Improves understanding.

**Click Here**

## Strategy & Analysis

- How to prepare for Civil Services Exam.
- Important sources and strategy.
- Previous year question paper analysis.

**Click Here**

# POLITY

## 1.    India, Bharat and a host of implications

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

**Mains:** India vs Bharat

**Prelims:** Article 1, 58th Amendment Act

### Introduction:
● The terms "Bharat" and "India" carry significant historical, ideological, constitutional, and international implications.
● Recent political developments have infused these words with added significance.
● Opposition parties have united under the banner and acronym "INDIA," representing the 'Indian National Developmental Inclusive Alliance.'
● A notable shift has occurred in the use of terminology, with "President of Bharat" being used instead of "President of India" in official invitations, such as those for the G-20 summit.
● This shift has been driven by concerns within the current government that the term "INDIA" could acquire substantial political influence.

### From the Pages of History:
● In 1947, the transfer of power from British rule in India led to the creation of two dominions: India and Pakistan, along with independent Princely States.
● The Muslim League proposed that India should be named either "Hindustan" or "Bharat," but India argued that it was the successor state to British India.
● India retained the name "India" internationally, while Pakistan had to establish its international status.
● In international settings, the word "India" is commonly used in the English language, maintaining the country's international identity.
● The 58th Amendment of the Constitution in 1987 provided for the authoritative Hindi text of the Constitution, emphasizing "Bharat" in Hindi and "India" in English.
● The practice of using "India" in English and "Bharat" in Hindi has been followed in internal and international documents.

### 58th Amendment Act:
● The 58th Amendment of the Constitution in 1987 empowered the President to publish the authoritative text of the Constitution in Hindi.
● The English version of the Constitution is titled "Constitution of India," while the Hindi version is "Bharat ka Samvidhan."
● Article 1(1) in the English version states, "India, that is Bharat, shall be a Union of States," emphasizing "India."
● Article 1(1) in the Hindi version reads, "Bharat artharth India, rajyon ka sangh hoga," giving primacy to "Bharat" in Hindi.
● Additionally, the Gazette published in English is referred to as the 'Gazette of India,' and in Hindi, it is known as 'Bharat ka Rajpatra.'

### Risk of Alienation from Giving Preference to Bharat:
● The article highlights that the Sangh Parivar and the current government prefer the term "Bharat" over "India."
● The use of "President of Bharat" in the G-20 invitation indicates this preference.
● There is a potential risk of alienating parts of the country that prefer "India" over "Bharat" if the government officially changes the country's name.
● The tradition of using "India" in English and "Bharat" in Hindi is considered wise and constitutionally correct, and changing it may not be a priority at this time.

**Nut Graf:** The terms "Bharat" and "India" both are significant in India's historical, political, and constitutional contexts. There is a potential risk of alienation if there's a shift towards "Bharat" exclusively and hence it is suggested that maintaining the tradition of using "India" in English and "Bharat" in Hindi is wise and constitutionally correct.

## 2.   India that is Bharat

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

**Mains:** India vs. Bharat: Which one should be preferred or one is complementary to the other

**Introduction:**
- The ongoing debate surrounding the usage of "India" and "Bharat" as official names. These names have been synonymous with the nation's identity. However, recent political motivations have fueled this debate.

**Dual Identity:**
- The Constitution of India officially recognizes both "India" and "Bharat" as names for the country. This recognition highlights the unique dual identity of the nation.
- Historically, the choice between these names has been largely contextual. Both names have invoked feelings of patriotism and pride among the people.

**Political Weaponization:**
- The current ruling party's decision to favour "Bharat" over "India" in official communication and documents.
- This move is perceived by some as serving narrow political interests.
- It has sparked a debate on whether one name should take precedence over the other.
- Critics argue that this shift in naming strategy risks undermining national unity for political gains.

**Cultural Significance:**
- "Bharat" carries deep cultural echoes, rooted in ancient sources and mythology. It transcends the modern geographical and cultural landscape of the republic.
- "India" represents the contemporary nation, reflecting its diverse and evolving identity.
- Both names have played a role in shaping the collective consciousness of the nation during its journey of nation-building.

**Diversity and Unity:**
- India is a land of remarkable diversity, with a multitude of ethnicities, languages, and genetic backgrounds.
- This diversity has been the result of millennia of migrations and cultural exchanges.
- Prioritizing one name over the other risks creating new divisions in an already diverse society.
- It is essential to promote unity rather than fuel unnecessary cultural confrontations.

**Opposition's Reaction:**
- The Opposition's reaction to the government's decision has further escalated the debate.
- The Opposition's adoption of "INDIA" as an acronym may have influenced the current actions.
- The debate now takes on the aura of a fundamental question about the nation's identity, rather than a matter of nomenclature.

**Undermining National Confidence:**
- The government's emphasis on changing the name undermines the nation's confidence and soft power.
- It can create uncertainty and confusion regarding the nation's identity.
- Both "Bharat" and "India" have been deeply embedded in popular culture, political discourse, and literature across various Indian languages.
- Regardless of the chosen name, the essence and aspirations of the nation remain consistent.

**Coexistence and Unity:**
- Advocating for the coexistence of "India" and "Bharat" as complementary identities.
- Recognizing that different contexts and constituencies may favour one name over the other.
- Emphasizing that unity and diversity have always been India's strengths.
- Avoid unnecessary debates and divisive actions that can undermine this unity.

**Conclusion:**
- Promoting the harmonious coexistence of "India" and "Bharat" as reflective of the nation's multifaceted identity.
- Prioritizing unity and shared aspirations over divisive debates regarding the nation's nomenclature and identity.

**Nut Graf:** The debate over whether to prioritize "India" or "Bharat" as the official name reflects a complex duality in India's identity. While both names evoke patriotism, their politicization and the potential for division warrant caution. Embracing both names harmoniously, emphasizing unity, and avoiding unnecessary conflict should prevail in this discussion.

## 3. Govt. introduces women's quota Bill in Lok Sabha; PM calls for a consensus

**Syllabus:** Constitutional Amendments, Issues Related to Women

**Prelims:** Provisions of bill
**Mains:** Pros and cons of the bill

**Context:** Parliament passed the 128th CAA (Nari Shakti Vandan Adhiniyam). It provides 33% reservation to women in Parliament and state legislatures with rotation. It will also apply to seats reserved for SCs and STs.

### Historic Move
● Central government introduced the Women's Reservation Bill in the Lok Sabha during the Special Session at the new Parliament House.
● The Bill aims to reserve one-third of seats in the Lower House and Assemblies for women.

### Implementation Post 2026 Delimitation
● The Constitution (One Hundred and Twenty-Eighth) Amendment Bill, 2023, will be implemented after the 2026 delimitation exercise, using data from the upcoming Census.
● Reservation in the Lok Sabha will become effective only in the 2029 Lok Sabha elections, not in 2024.

### PM's Appeal for Consensus
● Prime Minister Narendra Modi urged both Houses to pass the Bill through consensus.
● Union Law Minister Arjun Meghwal, who introduced the Bill, stated that the number of women members in the Lok Sabha would increase from 82 to 181 with the law's enactment.

### Current Representation Gap
● Women MPs constitute only 15% of the Lok Sabha's strength and around 10% in many State Assemblies.
● The Bill reserves one-third of seats for women from Scheduled Castes and Scheduled Tribes but lacks separate reservations for women from Other Backward Classes.

### 15-Year Law with Seat Rotation
● The proposed law will be in force for 15 years.
● Reserved seats will be rotated after each delimitation exercise.

### Historical Attempts
● The Prime Minister noted previous unsuccessful attempts in the last 27 years to pass the Women's Reservation Bill.
● He emphasised the significance of September 19 and pledged commitment to making the Bill into law.

### What will hold up the women's reservation Bill?

### Issues with the bill
● **First Issue**: Implementation linked with delimitation exercise.
  ○ In 2002, Article 82 amended to freeze any further delimitation until the figures of the first Census held after 2026 were available.
  ○ So, possible delay until 2031.
  ○ Government's stance: Census and delimitation exercise would be done immediately after the general election.
  ○ So, no benefits in the upcoming General elections.
● **Second Issue:** No quota for women within the OBC quota.

### History of Women Reservation Bill
● 1931: Memorandum by women leaders: equal rights for men and women; adult franchise should be adopted without sex discrimination.
● 1955: Government-appointed committee recommended 10% women reservation in Lok Sabha and state assemblies.
● 1988: National Perspective Plan for Women (recommended for 30% reservation)
● 1993: 33% women reservation in local bodies

- 1996: Women's Reservation Bill (81st CAA) introduced in Lok Sabha: 30% reservation in Lok Sabha and State Assemblies. Bill lapsed (as was pending in Lok Sabha)
- 1998: Introduced but lapsed as the government fell.
- Reintroduced in 1999, 2000, 2002 and 2003. Couldn't be passed.
- March 9, 2010: Bill introduced and passed in Rajya Sabha, but Lok Sabha did not decide on it. Lapsed.

**Arguments that support the bill**
- **Global Gender Gap Report 2022:** India is 48th among 146 countries in terms of Political Participation.
- Compared to the number of women voters, women representatives are much fewer.
- 2019 Lok Sabha election, less than 9% of fielded members were women.
- Women who got the chance at the local government level have done exemplary work.
- Many studies done at the Panchayat level prove that women leaders prioritize women's problems, and women are more likely to participate in the policy-making process if the leader of their village council is a woman.

**Arguments against the bill**
- Might benefit only a certain section of women.
- Repeat of the Sarpanch-Pati phenomena.
- The political parties should have taken the initiative to give tickets to women candidates.

**Nut Graf:** After implementation of this act there should be at least 181 women in the Lok Sabha from present 82 women. The share of women will also increase significantly in Legislative Assemblies, where women now comprise less than 10% in 20 States and Union Territories. Hence, the act has many benefits but the concerns also need to be addressed.

## 4. Delimitation of electoral constituencies

**Syllabus:** Indian Constitution, Elections

**Mains:** Process of Delimitation in India and issues associated

**Context:** The Constitution (One Hundred and Twenty-eighth Amendment) Bill, 2023 to provide 33% reservation to women in Lok Sabha and state Legislative Assemblies. This sheds the spotlight on anothercrucial aspect of representative democracy: the delimitation of electoral constituencies.

**What does the Bill say about women's reservation?**
- **Article 334A** of the Women's Reservation Bill says "provisions of the Constitution relating to the reservation of seats for women in the House of the People, the Legislative Assembly of a State and the Legislative Assembly of the National Capital Territory of Delhi shall come into effect after an exercise of delimitation is undertaken for this purpose after the relevant figures for the first census taken after commencement of the Constitution (One Hundred and Twenty-eighth Amendment) Act, 2023 have been published"

**What is Delimitation?**
- Delimitation literally means the act or process of fixing limits or boundaries of territorial constituencies in a country or a province having a legislative body.
- The job of delimitation is assigned to a high power body. Such a body is known as Delimitation Commission or a Boundary Commission.
- In India, such Delimitation Commissions have been constituted 4 times – in 1952 under the Delimitation Commission Act, 1952, in 1963 under Delimitation Commission Act, 1962, in 1973 under Delimitation Act, 1972 and in 2002 under Delimitation Act, 2002.
- The Delimitation Commission in India is a high power body whose orders have the force of law and cannot be called in question before any court.
- These orders come into force on a date to be specified by the President of India on this behalf.
- The copies of its orders are laid before the House of the People and the State Legislative Assembly concerned, but no modifications are permissible therein by them.

**INDIA - Existing Parliament Constituencies**



TOTAL SEATS 543
- GEN 423
- SC 79
- ST 41
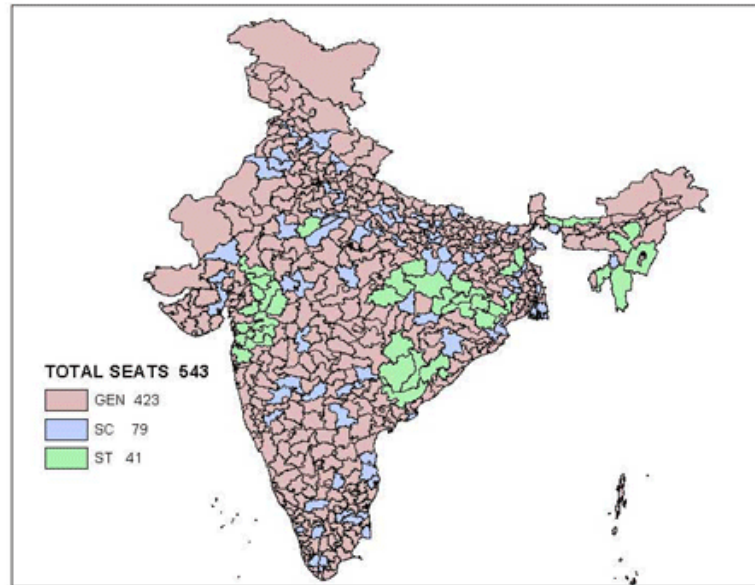
**Source: eci.gov.in**

**Women's Reservation Bill & Delimitation:**
- The effectiveness of the Women's Reservation Bill is dependent on two processes – the delimitation exercise and the Census.
- The delimitation exercise would be carried out on the basis of the Census. The Bill comes into effect when both these processes are carried out.
- Now that the Lok Sabha election 2024 is only months away, the Women's Reservation Bill can potentially only be enacted before the 2029 general elections, depending on the completion of a delimitation process aligned with the Census report.
- The 42nd Amendment froze the delimitation exercise until the results of the first Census after 2000 was published. In 2001, this was further extended for 25 years. And now, delimitation would happen after the results of the first Census after 2026 is published.
- In normal course, this would have meant that delimitation would happen only after the 2031 Census results were published. But now that the 2021 Census has been delayed, ostensibly because of the Covid-19 pandemic, this timeline could be altered.
- As things stand, the earliest that the Census 2021 exercise can now be expected to happen is 2025 – the houselisting exercise in 2024, followed by the actual Census in 2025. Thereafter, the publication of the Census numbers could take one or two years.
- If the results of the 2021 Census are published after 2026, this could become the basis of delimitation of constituencies.

**Delimitation as of now**
- Article 81 of the Constitution says that each State gets seats in the Lok Sabha in proportion to its population.
- The freeze on delimitation affected in 1976 was to allay the concerns of States which took a lead in population control and which were faced with the prospect of reduction of their number of seats in the Lok Sabha.
- The practical consequences, however, of the 1976 freeze is that the allocation done on the basis of the 1971 Census continues to hold good for the present population figures. India's population has, of course, increased significantly since then.
- Using figures from 1971 to represent today's population runs contrary to the grain of the Constitution besides obviously distorting what representative democracy stands for.
- The exercise of delimitation also implicates the constitutional values of federalism and representation of States as consolidated units.
- In the preceding decades, the population of the north has increased at a faster pace as compared with the south.
- In practical terms, this means that MPs in States in north India represent more voters than MPs in the south. Given this context, the question of delimitation necessarily has serious implications for both the individual voter as well as the States.
- The southern States run the risk of losing some of their seats in Parliament once the delimitation exercise is completed based on current population figures.

**How are the seats that are reserved for SCs and STs decided currently?**

- The Delimitation Act, 2002 lays down broad principles for reserving seats.
- The Delimitation Commission appointed under the Act is responsible for deciding the number of Parliamentary and Assembly constituencies to be reserved based on the population.
- "Constituencies in which seats are reserved for the Scheduled Castes shall be distributed in different parts of the State and located, as far as practicable, in those areas where the proportion of their population to the total is comparatively large," Section 9 (1)(c) of the Act says.

**Nut Graf:** Delimitation process will face concerns around how altering the boundaries of certain districts and renaming certain constituencies can have a potentially acute impact on the representation of specific communities. Hence it is time to start a robust conversation around delimitation sooner than later, so that lifting of the freeze on allocation of Lok Sabha seats does not have to be pushed ahead further.

## 5. From women's reservation to gender equality

**Syllabus:** Indian Constitution—Historical Underpinnings, Evolution, Features, Amendments, Significant Provisions

**Mains:** Impact of women's reservation bill on gender equality

**Prelims:** Article 334A, Constitution (One Hundred and Twenty-eighth Amendment) Act, 2023, Time Use Survey (2019), Delimitation Commission, Census

**Context**

- The Indian Parliament passed the Women's Reservation Bill, which provides for a third of seats in the Lok Sabha and state legislatures to be reserved for women.

**Impact of reservations for women in local bodies**

- According to data from the Inter-Parliamentary Union, the proportion of women in parliament in India is currently around 15%, ranking it 141st out of 193 countries.
- Research has shown that reserving seats for women in local elections has led to an increase in their participation in governance.
- Elected women representatives have become more assertive over time, despite initial resistance from male family members showing that women representatives also have agency to work independently.

**Uncertainty around Delimitation and Census**

- Article 334A of the Women's Reservation Bill states that the provisions related to the reservation of seats for women will come into effect after an exercise of delimitation is undertaken for this purpose and the relevant figures of the first census taken after the commencement of the Constitution (One Hundred and Twenty-eighth Amendment) Act, 2023.
- The effectiveness of the Women's Reservation Bill is contingent upon two processes – the delimitation exercise and the Census.
- There has been a freeze on delimitation since 1976 to provide a level-playing field for states to contain population growth.
- Southern states have been successful in reducing population growth through measures focused on women's empowerment.
- Higher education among girls, increased female labour force participation, and greater financial autonomy among women in the South have seen a correlation with lower fertility rates.
- States that have improved indicators around women empowerment could lose a share of seats in the Parliament if a delimitation exercise is held.
- It is also unclear whether a law or constitutional amendment can be contingent upon an uncertain future event like the delimitation exercise.
- Determination of the constitutionality of these provisions by courts is required in this regard.

**Towards Gender Equality**

- The law aiming to reserve seats for women is a step towards gender equality, but it's not enough to achieve real change.
- To truly make a difference, society needs to change its views on gender roles and how women are represented in elected positions.
- Currently, women have low participation rates in the workforce, and they spend much more time than men on unpaid household tasks.

- According to the Ministry of Statistics and Programme Implementation's Time Use Survey (2019), women spend almost three times as many minutes per day on housework and caregiving as men do.
- Programs like Tamil Nadu's Magalir Urimai Thogai, which provides monthly cash transfers to women, can help recognize and address the disparity in household labour.
- These initiatives could lead to increased female participation in the workforce over time.
- Free bus passes for women in Tamil Nadu are also expected to contribute to higher numbers of women in the workforce in the coming years.

**Way Forward:**
- Despite increased representation of women in elected bodies, questions remain about building capacity for first-time representatives.
- EMILY's List in the US provides campaign guidance, mentorship, and capacity-building for women entering politics.
- It is now the government's responsibility to build capacity and ensure successful outcomes from the reservation model. This will ensure sustained participation of women in elected bodies.
- The role of the National Commission for Women and the Parliamentary Committee on Empowerment of Women needs to be revised to make sure the women's reservation law is not just symbolic.
- Recognizing unpaid labour and promoting equitable sharing of household duties are crucial to achieving genuine gender equality.

**Nut Graf:** The Women's Reservation Bill in India is a step towards gender equality, but it's not enough to achieve real change. Society needs to change its views on gender roles and how women are represented in elected positions. The government needs to build capacity and ensure successful outcomes for women to achieve gender equality.

## 6.    What is the tussle between the Central government and the Delhi Waqf Board?

**Syllabus:** 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:** Statutory boards and issues.

**Context**
The dispute centres on the Delhi Waqf Board's ownership of 123 historic properties taken over by the Union Housing Ministry, sparking legal and ownership controversies.

**Introduction**
- The Union Housing and Urban Affairs Ministry has taken control of 123 properties belonging to the Delhi Waqf Board, including historic mosques, dargahs, and cemeteries.
- Following a Delhi High Court order, a committee was formed to examine the status of these properties.

**Committee's Report and Dispute**
- The two-member committee, led by Justice (retired) S.P. Garg, reported that no objections were received from the Delhi Waqf Board, leading to the properties becoming Central government assets.
- The Delhi Waqf Board disputed this, stating that it caused fear and resentment in the Muslim community.
- Waqf Board Chairman Amanatullah Khan claimed the report was not shared with them and that there was no High Court direction for the committee's formation.
- The Waqf Board sought redressal in the Delhi High Court.

**Ownership and Usage of Properties**
- Most worshippers were unaware of the property ownership change until notices were posted by the Housing Ministry's Land and Development Office.
- The notices did not specify these properties as mosques or dargahs and did not identify the addressees as owners.
- Public awareness grew when the Babur Road Masjid-Madrasa compound's boundary wall was demolished.

**Waqf Board's Actions**
- The Waqf Board initially went to court in February, requesting a halt to surveys but filed a new application after the boundary wall demolition.
- The Delhi High Court allowed the surveys to continue but urged minimal disruption to daily affairs, including prayer timings.
- The DDA and police's actions during prayers were criticised.

**Housing Ministry's Surveys**
- Surveys were conducted at various religious sites, including Jama Masjid, Mamu-Bhanje Dargah, Pandara Road mosque, and Sunehri Bagh Masjid.
- Demolition occurred at Mamu-Bhanje Dargah due to alleged encroachment.

**Centre's Position**
- The Centre opposed the Waqf Board's plea against property inspections, stating that the Waqf Board could only be a custodian, if at all, and not an owner.
- Surveys of prominent mosques and dargahs continue, while graveyards remain untouched for now.

**Nut Graf:** The Union Housing Ministry's takeover of 123 historic properties from the Delhi Waqf Board has triggered a legal battle, with the Board contesting the move, resulting in ongoing surveys of mosques and dargahs.

## 7. A progressive UCC must protect the child's best interests

**Syllabus:** GS-2, Indian Constitution—Historical Underpinnings, Evolution, Features, Amendments, Significant Provisions and Basic Structure.

**Mains:** Need for UCC and protection of Child

**Introduction:**
- Discussion of the potential introduction of a Uniform Civil Code (UCC) in India, with a focus on the scheduled special session of Parliament in September 2023.
- Emphasis on the importance of addressing child custody issues beyond traditional concerns like polygamy and divorce, highlighting the complexity of UCC.
- Asserting the necessity of incorporating the 'best interests of the child' principle in all custody disputes, irrespective of the parents' marital status or religious beliefs.
- Advocacy for denying absolute rights of biological parents compared to adoptive parents in custody matters.

**Child Custody Under Current Laws:**
- Existing laws like the Guardians and Wards Act, 1890, consider the welfare of the child as the prime consideration in custody determinations.
- Hindu Minority and Guardianship Act, 1956, designates the father as the natural guardian and the mother as the custodian until the child reaches five years of age.
- Custody arrangements under different schools of Islamic law emphasise that custody is the right of the child, with the father ranking sixth in priority.
- Indian legal system's preference for biological parents in custody disputes, regardless of the child's best interests.

**Custody Dispute After Adoption – Githa Hariharan (1999) Judgment:**
- Related to a recent case where a child was adopted following allegations of rape.
- **Criticism of the Bombay High Court's decision:**
  - Granted custody to the biological father (accused of rape), without considering the child's best interests or the biological mother's perspective.
  - Concerns about setting a problematic precedent by requiring the consent of a rapist father in such cases.

**Custody Dispute Involving Adoptive Parents – Nasrin Begum (2022) Judgment:**
- This related to the case where the custody of a girl child was disputed between biological and adoptive parents.
- **Critique of the Allahabad High Court's decision:**
  - Granted custody to the biological parents based on the child's right to know her real identity. The court overlooked the emotional trauma faced by the child and their adoptive parents.

**Conclusion:**
- There is a need for a progressive UCC that safeguards the rights of adoptive parents and does not overly emphasize biological ties.
- It is being suggested to include provisions for guardianship by single parents, surrogate parents, and queer parents to ensure a comprehensive and inclusive legal framework that prioritizes the best interests of the child.

**Nut Graf:** In light of the ongoing discussions surrounding India's Uniform Civil Code (UCC), it is critical to emphasize the imperative need for a progressive UCC, with a particular focus on child custody. By emphasizing the "best interests of the child" principle, it underscores the importance of safeguarding adoptive parents' rights and accommodating diverse family structures within the legal framework.

## 8. Government panel to study simultaneous polls to LS, State Assemblies

**Syllabus:** Issues and Challenges Pertaining to the Federal Structure

**Prelims:** Panel on Simultaneous elections, Jeevan Reddy Commission, Law Commission

**Mains:** Simultaneous polls to Lok Sabha and State Assemblies, Impact of Simultaneous polls on federal structure

**Introduction:**
The Union government has formed a panel under former President Ram Nath Kovind to study simultaneous polls to Lok Sabha and State Assemblies. Simultaneous elections refer to the idea of holding national, state, and local elections simultaneously. This concept has gained significant attention in recent times due to various reasons.

**Evolution of the idea**
- **1983:** The Election Commission suggests that simultaneous elections to Lok Sabha and state assemblies should be held.
- **1999:** The Law Commission headed by Justice B P Jeevan Reddy recommends in its 170th Report that India should return to the system of holding simultaneous elections to Lok Sabha and all state legislative assemblies.
- **2015:** The Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice compiles a report on the feasibility of holding simultaneous elections to Lok Sabha and state legislative assemblies.
- **2019:** The Election Commissioner expresses the EC's support for simultaneous elections, stating that it is a desirable goal, but highlighting that systems will need to take steps to ensure the life of state assemblies aligns with the life of parliament.

**Benefits**
1. **Reduced Expenditure:** Conducting separate elections results in massive expenditure, which can be avoided if simultaneous elections are held. For example, Bibek Debroy and Kishore Desai of the NITI Aayog wrote that the elections of 2009 had cost the exchequer about Rs 1,115 crore, and the 2014 elections about Rs 3,870 crore.
2. **Improved Governance:** Frequent elections lead to the imposition of the Model Code of Conduct, which hampers the proper functioning of the government. With simultaneous elections, the government can focus on delivering services to citizens without interruption.
3. **Enhanced Voter Turnout:** As per the analysis of the Law Commission, simultaneous polls may boost voter turnout. When voters have to cast multiple ballots on different days, some might skip voting in later rounds, especially those living far from polling stations.
4. **Better Utilization of Resources:** If simultaneous elections are conducted, all government officials can be utilized at one time, reducing the chances of malpractices like black money and booth capturing.

**Challenges:**
1. **Difficulty in Addressing State-Specific Issues:** Assembly elections are often fought over issues specific to each state, such as law and order, education, healthcare, and essential services like water and electricity. Simultaneous elections may divert voters' attention from these local concerns, potentially affecting their voting decisions.
2. **Lack of Accountability:** Holding elections every five years may reduce the accountability of political leaders. Frequent elections keep them on their toes and committed to the public cause.
3. **Challenges in Handling Hung Assemblies:** Given the trend of hung assemblies, if a state or Lok Sabha is dissolved early, it would necessitate holding unnecessary elections in all states again or imposing President's Rule in certain states where the state assembly has prematurely dissolved until the next cycle of elections is held. This would go against the fundamental principles of India's parliamentary democracy and federal framework.
4. **Sidelining Smaller Parties:** National parties may drown out the voices of smaller parties that address regional issues, as they wield greater influence and resources. This could result in the marginalization of smaller parties that emerged to tackle specific challenges faced by the people of a particular state.
5. **Other Challenges:** Midterm changes, such as a party losing power, a minister being removed or dying, or a seat becoming vacant, would be easier to handle under the current system.

**Way Forward**

- The Law Commission, led by Justice B S Chauhan, concluded in a draft report on August 30, 2018, that simultaneous elections cannot be held under the current constitutional framework.
- To hold simultaneous elections, amendments would be required to the Constitution, the Representation of the People Act 1951, and the Rules of Procedure of Lok Sabha and State Assemblies. For example, some of the constitutional changes are:
  - **Article 83:** Changes related to the duration of Houses of Parliament.
  - **Article 85**: Changes related to the dissolution of the Lok Sabha by the President.
  - **Article 172:** Changes related to the duration of state legislatures.
  - **Article 174:** Changes related to the dissolution of state legislatures.
  - **Article 356:** Changes related to the imposition of President's Rule in states.
- At least 50% of the states must ratify the constitutional amendments.
- The Commission suggested conducting all elections due in a calendar year simultaneously.
- The Commission proposed replacing the "no-confidence motion" with a "constructive vote of no-confidence" through appropriate amendments, ensuring that a government can only be removed if there is confidence in an alternative government.

**Conclusion**

The panel should work by taking all the political parties into confidence with transparency and openness to ensure consensus on this crucial issue which has important implications for both parliamentary democracy and federal government.

**Nut Graf:** The Union government has formed a panel to study the feasibility of holding simultaneous elections to the Lok Sabha and state assemblies. The idea has been gaining traction in recent years due to its potential benefits, such as reduced expenditure and improved governance. However, there are also challenges associated with simultaneous elections, such as the difficulty in addressing state-specific issues and the marginalization of smaller parties. Transparent dialogue is the need of the hour to build consensus among parties.

## 9. The debate around 'One Nation, One Election'

**Syllabus:** Issues and Challenges Pertaining to the Federal Structure

**Prelims:** Simultaneous elections

**Mains:** Simultaneous polls to Lok Sabha and State Assemblies, Impact of Simultaneous polls on federal structure

**Context:** On September 1,2023, the Central government set up a panel headed by former President Ram Nath Kovind to explore the feasibility of the 'one nation, one election' (ONOE) plan.

**What is the ONOE plan?**

- The idea of ONOE centres around the concept of synchronising the timing of Lok Sabha and State Assembly elections across all States to reduce the frequency of polls throughout the country.
- After the enforcement of the Constitution on January 26, 1950, the first-ever general elections to Lok Sabha and all State Assemblies were conducted simultaneously in 1951-1952.
- The practice continued into the three subsequent Lok Sabha elections until 1967, after which it was disrupted.
- The cycle was first broken in 1959 after the Centre invoked Article 356 (failure of constitutional machinery) of the Constitution to dismiss the then-Kerala government. Subsequently, due to defections and counter-defections between parties, several Legislative Assemblies dissolved post-1960, which eventually led to separate polls for Lok Sabha and State Assemblies.
- Currently, the assembly polls in the States of Arunachal Pradesh, Sikkim, Andhra Pradesh and Odisha are held together with the Lok Sabha elections.

**What do reports say about ONOE?**

- In 2018, the Law Commission of India (LCI), chaired by Justice B. S. Chauhan, submitted that simultaneous elections are not feasible within the existing framework of the Constitution.
- It said that the Constitution, the Representation of the People's Act 1951 and the Rules of Procedure of Lok Sabha and State Assemblies would require appropriate amendments to conduct simultaneous polls.
- The commission also recommended it receive ratification from at least 50% of the States.

- However, with respect to the advantages of holding simultaneous polls, the commission said that ONOE will lead to the saving of public money, reducing the strain on the administrative setup and security forces, timely implementation of government policies, and administrative focus on development activities rather than electioneering.
- In 1999, the LCI headed by Justice B. P. Jeevan Reddy advocated for simultaneous elections.

**What are the concerns?**
- **Feasibility:**
  - Article 83(2) and 172 of the Constitution stipulates that the tenure of Lok Sabha and State Assemblies respectively will last for five years unless dissolved earlier and there can be circumstances, as in Article 356, wherein assemblies can be dissolved earlier.
  - Therefore, the ONOE plan raises serious questions:
    - What would happen if the Central or State government collapses mid-tenure?
    - Would elections be held again in every State or will the President's rule be imposed?
    - Amending the Constitution for such a significant change would not only necessitate extensive consideration of various situations and provisions but would also set a concerning precedent for more constitutional amendments.
- **Against Article 1:** It does not square with the concept of 'federalism' as it is established on the notion that the entire nation is "one" contradicting the content of Article 1 which envisages India as a "Union of States".
- **Less frequency of elections:** The present form of recurrent elections is beneficial in a democracy as it allows voters to have their voices heard more frequently. As the underlying issues of national and State polls are different, the present framework prevents the blending of issues, ensuring greater accountability.
- **Cost:** The Central government has also highlighted the substantial costs associated with frequent elections. However, this notion is misleading. The Election Commission's expenditure of ₹8,000 crore over five years, amounting to ₹1,500 crore annually, or ₹27 per voter per year, can be considered a 'massive' expense for maintaining the pride of being the world's largest electoral democracy.

**Conclusion:** This is an important issue for Indian democracy so there is a need to bring all the political parties into confidence with transparency and openness to ensure consensus on this crucial issue which has important implications for both parliamentary democracy and federal government

**Nut Graf:** The idea has been gaining traction in recent years due to its potential benefits, such as reduced expenditure and improved governance. However, there are also challenges associated with simultaneous elections, such as the difficulty in addressing state-specific issues and the marginalization of smaller parties. Transparent dialogue is the need of the hour to build consensus among parties.

## 10. Drop the bad idea of simultaneous elections

**Syllabus:** Indian Constitution, Functions and Responsibilities of Union and States, Issues and challenges pertaining to the federal structure.

**Mains:** Electoral reforms and their impacts

**Context**
The article discusses the ongoing debate surrounding the idea of holding national and State elections simultaneously in India, popularly known as 'one nation, one election.' It highlights the arguments both in favour and against this proposal, delving into the logistical, constitutional, and democratic challenges it poses.

**Introduction**
- Recent discussions on the possibility of having national and State elections simultaneously.
- Formation of a committee led by former President Ram Nath Kovind to explore implementation and constitutional changes.
- Primary arguments in favour of simultaneous elections: cost reduction and ending the "permanent campaign mode."

**Proponents of Simultaneous Elections**
- Arguments for cost reduction and decreased electioneering expenses.
- Potential for politicians to focus on governance and constructive opposition during a five-year period.

**Critics' Perspectives**
- Actual financial savings from simultaneous elections are minimal.
- The suggestion is that State elections should primarily involve State party units, leaving national politicians to focus on governance.
- The centralised and presidential nature of Indian election campaigns challenges this suggestion.

**Logistical Challenges**
- Conducting simultaneous elections in a country of over 1.4 billion people.
- Even State elections require multiple phases due to India's vastness.

**Incompatibility with Parliamentary Democracy**
- Central and State elections were simultaneous at Independence but later separated.
- The essence of parliamentary democracy: the government must enjoy the confidence of the House, necessitating elections at different times.
- Proposals for addressing this issue: President's Rule or term limits for new Assemblies.

**Risks and Perverse Incentives**
- Possibility of avoiding government falls leading to horse-trading.
- Simultaneous elections may encourage politicians to maintain power at all costs, undermining democratic principles.
- Potential for elections to be held frequently, disrupting governance.

**Federalism and Democracy Concerns**
- Simultaneous elections risk blurring State-level and national-level issues.
- Federal structure in India serves as a check against power concentration.
- Concentration of power goes against the principles of federalism.
- Reduced scope for public participation and debate in a system where elections are the primary form of participation.

**Conclusion**
- Administrative benefits of simultaneous elections are overstated.
- The concept carries significant implementation and conceptual costs.
- Risks to the federal and democratic design of the Constitution.
- The idea should not be pursued due to these compelling reasons according to the author.

**Nut Graf:** The article critically examines the proposition of simultaneous elections in India, highlighting the key arguments in favour, such as cost reduction and governance focus. However, it emphasises that the administrative benefits are overstated, and the proposal presents significant challenges to federalism and democracy, ultimately concluding that it is an idea fraught with risks.

## 11. Simultaneous polls: do States have a say?

**Syllabus:** GS-2, Indian Constitution, Issues & Challenges Pertaining to the Federal Structure, and Electoral processes in India.

**Mains:** Simultaneous elections- Issues related to the federal structure, electoral reforms, and the functioning of democracy.

**Context**
The Indian government has set up a committee to explore the feasibility of simultaneous elections for state assemblies and the Lok Sabha. This raises questions about constitutional amendments and state ratification.

**Introduction**
- A committee led by former Indian President Ram Nath Kovind was established by the Union government on 2nd September 2023.
- The committee's purpose is to investigate the feasibility of conducting simultaneous elections for State Assemblies and the Lok Sabha (the lower house of India's Parliament).
- The Law Ministry outlined seven terms of reference for the committee, including the need for constitutional amendments and potential ratification by states.

**Constitutional Amendment Procedures**
● Article 368 governs the process of amending the Indian Constitution, with three different procedures.
● Some amendments can be passed with a simple majority in each House of Parliament, similar to ordinary legislation.
● Other amendments require a "special majority," which means two-thirds of members present and voting in each House of Parliament, along with a majority of the total membership.
● A third category of amendments necessitates a "special majority" and ratification by at least one-half of the State legislatures.

**Amendments Requiring Ratification by States**
● Amendments requiring ratification pertain to the federal structure of the Constitution and are referred to as "entrenched provisions."
● These include changes related to the President's election (Articles 54 and 55), executive powers (Articles 73 and 162), the judiciary, legislative powers (Articles 124–147 and 214–231), distribution of powers (Articles 245 to 255), representation of States in Parliament (Article 82), and Article 368 itself.

**Debates on Entrenched Provisions**
● Dr. B.R. Ambedkar advocated for ratification by states to preserve the federal structure of the Constitution.
● He argued that allowing amendments through a simple majority would undermine the separation of powers among the three branches of the government.

**Can a Constitutional Amendment Be Struck Down Without Ratification?**
● The Kihoto Hollohan vs. Zachillhu case established that amendments requiring ratification must be ratified by states to be valid.
● In another case, the Supreme Court struck down provisions of the Constitution (97th Amendment) Act, 2011, as it lacked ratification for dealing with an exclusive State subject.

**Can a State Rescind Its Ratification?**
● The Constitution does not specify whether a state can rescind its ratification.
● Such a situation is unlikely due to the prevailing practice of ratifying amendments by at least half of all states.
● Rescinding ratification could create confusion and rigidify the amendment process.

**What the Law Commission Recommends**
● In 2018, the Law Commission of India proposed that simultaneous elections require constitutional amendments and ratification by at least 50% of the states.
● Experts argue that implementing these amendments as recommended by the Law Commission may infringe upon the federal structure of the Constitution.
● Achieving simultaneous elections would require dissolving all State Assemblies, which could pose challenges to the federal structure, especially in states ruled by the opposition.

**Nut Graf:** India is debating the possibility of simultaneous elections, leading to questions about constitutional amendments, state ratification, and the impact on the federal structure of the country's governance.

## 12. Decoding the Nyaya Sanhita bill

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation.

**Mains:** Nyaya Sanhita bill and the shortcomings in the bill

**Context**
The Indian government's introduction of three penal Bills in the Lok Sabha, aimed at decolonizing the justice system, requires careful consideration due to the complexity of penal law-making and the need for public participation.

**Introduction**
● The government's initiative to introduce three penal Bills in the Lok Sabha aims to decolonize the Indian justice system.
● While the government's initiative is commendable, it is essential to consider the complexities of penal law-making and reform.

**Deep Deliberation and Empirical Validation**
- Penal law-making and reform require thorough deliberation and empirical validation.
- This process involves analyzing the behaviour considered undesirable and shifting societal perceptions, as exemplified by changes in laws related to attempted suicide and adultery.

**Incorporating Public Participation**
- Replacing colonial penal laws is necessary because they lacked participation from the governed.
- The process should involve a wide and diverse debate, including the perspectives of the people for whom these laws are meant.
- The goal should be to achieve equal and uniform application of the law while ensuring maximum certainty.

**Social Audit of Undesirable Behaviour**
- Conducting a broader social audit of what constitutes "undesirable" behaviour is crucial.
- It is important to view crime and criminals from an independent and impartial perspective, moving away from a state-centric view.

**Streamlining and Avoiding Redundancy**
- To maintain brevity and effectiveness, it is important to avoid retaining and adding new offences.
- Special laws already exist to address emerging crimes, and serious crimes like organised crime and terrorism could be handled separately.

**Focus on Offences Against Women and Children**
- The proposed Bharatiya Nyaya Sanhita Bill prioritises "Offences Against Women and Children" in Chapter V, aligning with the constitutional vision.
- However, there are concerns about provisions related to marital rape and general exceptions.

**Marital Rape and Colonial Mindset**
- The proposed law still adheres to a colonial mindset by not considering forced sexual intercourse between a man and his wife as rape if the wife is above 18.
- This reflects an outdated approach and goes against the principles of equality and autonomy.

**Inconsistencies with Special Laws**
- Retaining certain clauses related to criminal liability in a general penal law contradicts the philosophy of special laws, as outlined in the Juvenile Justice Act of 2015.

**Shifting Priorities in Chapter Arrangement**
- The Bill departs from the colonial chapter scheme by placing bodily interests before offences against the state.
- This shift raises questions about fulfilling constitutional visions, upholding autonomy and equality, and promoting fraternity.

**Nut Graf:** While the government's initiative to reform India's penal laws is commendable, the process should involve deep deliberation and public participation, and address inconsistencies, especially in areas like marital rape and general exceptions.

## 13. The Bharatiya Nyaya Sanhita needs a relook

**Syllabus:** GS-2, Indian Constitution—Historical Underpinnings, Evolution, Features, Amendments, Significant Provisions and Basic Structure.

**Prelims:** Bharatiya Nyaya Sanhita, Unlawful Activities (Prevention) Act (UAPA) , Section 124A IPC

**Mains:** Implications of Bharatiya Nyaya Sanhita, 2023 bill, Criminal Justice Reforms

**Context:**
- The proposed Bharatiya Nyaya Sanhita, 2023 bill aims to reform the criminal justice system in India.
- However, there are several areas where further discussions are necessary to ensure consistency, clarity, and effectiveness in addressing various crimes.

**Critical Analysis of the Provisions**

- **Sedition:**
  - The bill proposes replacing sedition (Section 124A IPC) with a new offense titled "Acts endangering sovereignty, unity, and integrity of India."
  - While this change may appear positive, the definition of "subversive activities" should be explicitly stated to avoid potential misinterpretation and abuse by authorities.
- **Acts of Terrorism:**
  - The definition of "terrorist act" in the Sanhita has been adapted from the Unlawful Activities (Prevention) Act (UAPA) of 1967 but phrases such as 'to destroy the political, economic, or social structure of the country' are vague.
  - Issues could arise due to the inconsistency with the UAPA in some cases. For example, while terrorist organizations are notified in the First Schedule to the UAPA, 'terrorist organization' is also given a specific definition in the sanhita.
- **Organized Crime:**
  - A new offense called "organized offense" has been introduced.
  - However, certain provisions need refinement. For instance, the term "cyber-crimes having severe consequences" lacks specificity, and the criteria for determining what constitutes an "organized crime syndicate" are not clearly defined.
  - Other inconsistencies include classifying petty organized crime as a non-cognizable offense.
- **Community Service:** The inclusion of community service as a form of punishment for minor offenses is a welcome step.

**Way Forward?**

- **Parliamentary Standing Committee's Role:** To ensure that the Sanhita meets its intended objectives and overcomes the concerns mentioned above, the Parliamentary Standing Committee must play a crucial role in reviewing the bill thoroughly. They should engage with experts, civil society organizations, and other relevant stakeholders to gather feedback and suggestions for improvement.
- **Public Consultation:** Before finalizing the bill, the government should conduct public consultations to allow citizens to contribute their views and opinions. This exercise would enhance transparency, accountability, and ownership of the legislative process.
- **Harmonization with Other Laws:** It is essential to harmonize the Sanhita with other laws, such as the UAPA to prevent conflicts and ensure seamless implementation.

**Nut Graf:** The proposed Nyaya Sanhita represents a significant initiative to revamp the Indian Penal Code but still requires careful consideration and revisions to address some inconsistencies. By doing so, the legislation can effectively promote public safety, protect human rights, and strengthen the rule of law in India.

## 14. SC bench reserves verdict in Article 370 abrogation challenge

**Syllabus:** GS-2, Indian Constitution—Historical Underpinnings, Evolution, Features, Amendments, Significant Provisions and Basic Structure.

**Mains: Article 370 abrogation challenge**

- A Constitution Bench, led by Chief Justice of India D.Y. Chandrachud, has reserved its judgement on petitions challenging the abrogation of special status granted to Jammu and Kashmir under Article 370 of the Constitution.
- The hearings spanned 16 days and involved submissions from both petitioners and the government regarding the constitutionality of the procedure used to repeal Article 370 and the conversion of Jammu and Kashmir's statehood into Union Territories.
- The government argued that the abrogation was necessary to fully integrate Jammu and Kashmir into the Union of India and highlighted improvements in the region post-abrogation.
- The petitioners, represented by senior lawyers, contended that the government used its parliamentary majority and executive orders to divide the State into Union Territories, which they deemed an attack on federalism and a violation of the Constitution.
- The petitioners argued that Article 370 had acquired permanent status after the dissolution of the J&K Constituent Assembly in 1957, making it exempt from Article 368 (Parliament's power to amend the Constitution).
- The Constitution Bench, including Justices S.K. Kaul, Sanjiv Khanna, B.R. Gavai, and Surya Kant, focused on examining the events leading to the dissolution of Article 370, starting with the dissolution of the Jammu and Kashmir State Legislative Assembly in November 2018.

## 15. Crafting a new chapter in parliamentary conduct

**Syllabus:** Parliament and State Legislatures—Structure, Functioning, Conduct of Business, Powers & Privileges and Issues Arising out of these.

**Prelims:** Prime Minister's Question Time, Code of Conduct in Parliament

**Mains:** Decline of Parliamentary Democracy, Parliamentary Reforms

**Context:**
- Concerns are being raised on the decline of parliamentary democracy in India with standards of behavior in the parliament slipping.
- Many fear that this conduct has damaged the reputation of the legislature with serious consequences for the future of democracy in India.

**Instances of decline of Parliamentary Democracy and Conduct**
- Disruption is a common practice in India's Parliament, where members often believe that showing the strength of their party positions is more important than debating the law.
- The opposition parties united to stall both houses almost every day in the last session, and there have been very few sessions in recent years where some days weren't lost to deliberate disruption.
- State Assemblies have seen violent behavior from legislators, including overturned furniture, damaged microphones, flying objects, physical altercations, and torn clothing.
- The Parliament has also experienced breaches of conduct, despite newly-elected MPs being instructed against speaking out of turn, shouting slogans, waving placards, and entering the well of the house.
- An MP once used pepper spray in the well, causing discomfort for other MPs and the Speaker.
- Lawmakers often disregard the rules they are meant to uphold, leading to instances of MPs charging towards the presiding officer's desk, grabbing their microphone, and tearing up papers.
- These transgressions have resulted in temporary suspensions of the MPs, followed by their quiet reinstatement after an apology.

**How to reduce the scope for disruptions?**
- Opposition parties select the disruptive path because they believe their views are not being adequately considered in parliamentary debates. This can be addressed by the following practices:
  1. **Allowing the Opposition a day each week to set the agenda, known as "Opposition Day," could help address the root cause of disruptions.**
     - On Opposition Day, opposition parties could choose specific policy areas or issues to bring to the floor of the House for debate.
     - This would give them a platform to discuss matters of importance, criticize government policies, and propose alternatives.
     - The number of Opposition Days in a parliamentary session could be negotiated between the government and opposition parties.
     - Adopting this procedure could provide the Opposition with a designated platform to express their views and priorities within the parliamentary schedule, potentially reducing the need for disruptions.
  2. **Following the model of Prime Minister's Question Time (PMQs) as seen in the British Parliament.**
     - PMQs takes place every Wednesday when the House of Commons (in UK) is in session, usually at noon.
     - The Leader of the Opposition starts by asking several short questions to the Prime Minister, followed by supplementaries, and then other MPs also have a turn.
     - Each question is relatively short, and the Prime Minister responds directly.
  3. **Reforms to the role of Speaker.**
     - Changing the current practice of rejecting every single adjournment motion moved by an Opposition MP could help Opposition members feel valued.
     - Clubbing all proposed amendments to Bills from the opposition into one and rejecting them by voice vote without discussion could also be reformed.

**Conclusion**
- The reforms suggested above would allow Opposition members to feel valued and not disregarded, help reduce the precious time lost to disruptions which is essential for a healthy parliamentary democracy.

**Nut Graf:** Parliamentary democracy in India is declining due to disruptions, use of force and breach of conduct on the floor. These disruptions can be reduced by giving the Opposition more opportunities to debate issues of importance, following the model of Prime Minister's Question Time in the UK, and reforming the role of the Speaker.

## 16. The Cauvery Water Management Authority should act

**Syllabus:** GS-2, Statutory, Regulatory and various Quasi-judicial Bodies.

**Prelims:** Cauvery Water Regulation Committee, Cauvery Water Management Authority, Cauvery's Catchment Area, Inter-State River Water Disputes

**Mains:** Impact of Inter-State River Water Disputes on Federalism, Water Governance, Role of Cauvery Water Management Authority

**Context:**
- The Cauvery River's catchment areas are experiencing drought-like conditions due to the weak southwest monsoon, highlighting the need for a distress-sharing formula for the water resources.
- This is also part of an ongoing dispute between Karnataka and Tamil Nadu over the sharing of the Cauvery River water.

**What is the recent dispute?**
- The Cauvery Water Regulation Committee (CWRC) has ordered Karnataka to continue releasing 5,000 cusecs of water to Tamil Nadu for another 15 days.
- The Karnataka Government stated that the state had released less water than usual in June, July, and August due to deficient rainfall, with a 41% deficit in the Cauvery river basin.
- Tamil Nadu approached the Supreme Court, demanding its fair share of water as specified in the 2018 order.
- The Karnataka Government is developing a "distress formula" to calculate the amount of water to be released to Tamil Nadu during years of deficient rainfall.
- Legal experts believe that the distress formula should be flexible and serve as a guide for accounting for rainfall deficiencies.

**Origins of Distress-Sharing Formula**
- The idea of a distress-sharing formula has been discussed since the Cauvery Water Disputes Tribunal issued an interim order in 1991.
- The final order of the Cauvery Water Disputes Tribunal in 2007 and the Supreme Court's judgment in 2018 did not provide a clear framework for distress sharing.
- The judicial bodies suggested proportionate sharing in times of distress, but the states have different opinions on what factors should be included in the formula.
- There is currently no agreement among the parties or the Authority regarding the specific elements of the proposed formula.
- Tamil Nadu considers current deficits in inflows to four Karnataka reservoirs compared to average flows over the past 30 years, as well as rainfall patterns in different parts of the Cauvery catchment area.
- Karnataka maintains that the overall distress situation cannot be calculated until the end of January and wants to take into account the outcome of the northeast monsoon (October-December) along with the southwest monsoon (June-September).
- The Cauvery Water Management Authority (CWMA) recently submitted proposals to the Supreme Court, emphasizing the importance of finding a mutually agreeable solution.

**What is the scale of water distress in the region?**
- Karnataka has recorded a shortfall of 51.22% in inflows for four reservoirs between June 1 and August 27.
- For example, the shortfall in the Biligundlu region was 62.4% compared to stipulated flows in a normal year.
- Karnataka, as an upper riparian state, is concerned about meeting its irrigation and drinking water needs for the next 8 months
- Karnataka informed the court of its difficulties in releasing water due to the severe drought situation in the Cauvery and Krishna basins.

**Role of CWMA?**

- The Centre established the Cauvery Water Management Authority (CWMA) and the Cauvery Water Regulation Committee (CWRC) in 2018.
- CWMA is a permanent body and will regulate and control Cauvery water releases with the assistance of the Cauvery Water Regulation Committee.
- CWRC acts as a technical arm and will ensure the implementation of the Supreme Court Judgment of 2018 by periodically collecting data regarding levels, inflows, storages, and release of water.
- CWMA has not made significant progress in resolving the distress-sharing formula issue since its establishment in 2018.
- Political factors have played a role in preventing the resolution of the Cauvery dispute.

**Way Forward?**

- The positions taken by Karnataka and Tamil Nadu may seem irreconcilable, but the CWMA or the Union government should still attempt to find a solution.
- Regardless of the outcome, states should pursue the idea of judicious use of water.
- Officials and technical experts within the CWMA should come up with a distress-sharing formula in a fair and objective way.
- The CWMA should start afresh and work towards making the proceedings of all meetings held thus far accessible to the public through a website to dispel misconceptions and build trust between the two states.
- Additionally, there is a need for transparent decision-making and a data-driven approach to find a solution that works for both parties.

**Supreme Court's Non-Intervention in Cauvery Water Dispute**

- The Supreme Court has refused to step in to support either Karnataka or Tamil Nadu in the Cauvery water dispute.
- Instead, it relies on the expertise of the Cauvery Water Regulation Committee (CWRC) and the Cauvery Water Management Authority (CWMA) to oversee water sharing between the two states.

**Role of CWRC and CWMA**

- The CWRC had previously directed Karnataka to release 5,000 cusecs of water daily to Tamil Nadu.
- A three-judge Bench led by Justice B.R. Gavai expresses satisfaction with the CWRC and CWMA's regular meetings every 15 days to review water flow, considering the distress faced by both states.

**Concerns Raised by Tamil Nadu and Karnataka**

- Senior advocates for Tamil Nadu claimed that the CWRC initially determined that the state required 7,200 cusecs of water from Karnataka but abruptly reduced it to 5,000 cusecs in the final order.
- The CWMA confirmed the CWRC's order, specifying Karnataka's responsibility to ensure Cauvery water releases from the Krishna Raja Sagar and Kabini reservoirs, totalling 5,000 cusecs at Biligundulu.

**Arguments Presented**

- Tamil Nadu argued that the CWMA mechanically accepted the CWRC's decision and emphasised the dire need for water to support standing crops.
- In contrast, Karnataka contended that the daily flow of 5,000 cusecs was against its interests. It noted a growing drinking water crisis in urban areas like Bengaluru, while Tamil Nadu primarily required water for irrigation.
- Karnataka suggested that authorities should not have mandated a release exceeding 3,000 cusecs per day.

**Nut Graf:** The Cauvery River's catchment areas are experiencing drought-like conditions, highlighting the need for a distress-sharing formula for water resources. The Cauvery Water Management Authority should work towards a mutually beneficial formula while ensuring transparency in decision-making.

## 17. Cauvery dispute: CWMA upholds panel's decision

**Syllabus:** GS-2, Statutory, Regulatory and various Quasi-judicial Bodies.

**Prelims:** Cauvery Water Regulation Committee, Cauvery Water Management Authority, Cauvery's Catchment Area, Inter-State River Water Disputes

**Mains:** Impact of Inter-State River Water Disputes on Federalism, Water Governance, Role of Cauvery Water Management Authority

**Context:** Cauvery Water Management Authority (CWMA) upheld the decision of the Cauvery Water Regulation Committee (CWRC) asking Karnataka to release 3,000 cubic feet per second (cusecs) to Tamil Nadu till October 15.

**About the Cauvery River:**



**Source: Cauvery.com**

- Origin: Tala Kaveri, Coorg district (Brahmagiri hills of Karnataka)
- Riparian states: total drainage area of 81,155 Sq.Kms., of which 34,273 Sq.Kms lies in Karnataka, 43856 Sq.Kms. in Tamilnadu , 2866 Sq.Kms. in Kerala and 160 Sq.Kms in Union Territory of Pondicherry.
- Total length: 800kms (320km Karnataka, 416km Tamil Nadu. 64km border).
- Major left bank tributaries: Hemavathi, Shimsa, Harangi
- Major right bank tributaries: Noyll, Bhavani, Kabini, Amaravathi.

**History of the Cauvery Dispute**
- **1982 agreement:** British government agreement with the state of Mysore and Madras.
- **1924 agreement**: Allocated 75% of water to Tamil Nadu and Puducherry; 23% to Mysore; rest to Kerala (Travancore).
- Post independence, especially post-1956 reorganization, both states clamored for more share
- **1990:** Cauvery Water Disputes Tribunal.
  - Final verdict in 2007.
  - 419 thousand million cubic feet (TMC) of water to Tamil Nadu, 270 TMC to Karnataka, 30 TMC to Kerala, and 7 TMC to Puducherry.
  - Karnataka also directed to release some water every month based on the reservoir levels.
- **2018 Supreme Court judgment:** Reduced share of Tamil Nadu. Reduced annual share of water release by Karnataka; established Cauvery Water Management Authority to implement this.

**Present issues:**
- **Deficit rainfall in the catchment.** Karnataka also pointed out that it was only dependent upon the southwest monsoon, which played truant this year, but Tamil Nadu could fall back on the northeast monsoon.
- The Karnataka government has decided to file review petitions before the Supreme Court and CWMA. It has also decided to form an advisory panel to collect data and provide advice to the government on the issue.

**Nut Graf:** The Cauvery River's catchment areas are experiencing drought-like conditions, highlighting the need for a distress-sharing formula for water resources. The longer-term solution should be on sustainable use of water and reviving of rivers.

# ECONOMY

## 1. PLI scheme for IT hardware

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

**Mains:** Significance of PLI scheme

**Context:** Asus, Dell, HP and Foxconn are among 38 companies that have submitted applications to manufacture laptops, personal computers and servers in India under the Centre's production-linked incentive (PLI) scheme for IT hardware. Apple, however, has opted to skip participation in the scheme.

### What is the PLI (Performance Linked Incentive) Scheme?
● This development comes weeks after the Centre imposed and then postponed a licensing requirement on the import of laptops and personal computers. The move was deferred until October 31.
● While the expected incremental production at the end of six years of the scheme is estimated at Rs 3.35 lakh crore, it could bring an incremental investment of just Rs 4,000 crore over these many years.
● The government estimates the manufacturing process to result in 75,000 direct jobs.

### Why this move by the Government?
● The move is being seen as a direct boost to the Centre's recently renewed production-linked incentive (PLI) scheme for IT hardware.
● The scheme was revised in May with an outlay of Rs 17,000 crore, more than doubling the budget for the scheme that was first cleared in 2021.
● The push is aimed at makers of laptops, servers and personal computers among others since a majority of the imports in these segments are from China.
● India has seen an increase in imports of electronic goods and laptops/computers in the last few years.
● During April-June this year, the import of electronic goods increased to $6.96 billion from $4.73 billion in the year-ago period, with a share of 4-7 per cent in overall imports.

### Is it targeted at China?
● Of the seven categories restricted for imports by India, the majority share of imports is from China. During April-May, the latest period for which country-wise data is available, India's imports from China for these seven categories of restricted imports were valued at $743.56 million, down 5.6% from $787.84 million.
● The highest share of imports is in the category of personal computers including laptops, and palmtops, under which imports from China stood at $558.36 million in April-May this year as against $618.26 million in the year-ago period. China accounts for roughly 70-80 per cent of the share of India's imports of personal computers, laptops.

## 2. Incremental Cash Reserve Ratio

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

**Prelims:** Incremental Cash Reserve Ratio

**Context:** RBI has released guidelines to discontinue the Incremental Cash Reserve Ratio in a phased manner.

### Important Quantitative tools with RBI to manage inflation
● Repo Rate
● Reverse Repo Rate
● Cash Reserve Ratio
● Statutory Liquidity Ratio
● Open Market Operations

**What is CRR?**
- Portion of a bank's deposits (net demand and time liabilities) that must be kept in cash with the central bank
- Banks do not get any interest on this money.
- An important Quantitative tool to manage inflation in the economy.
- Current CRR: 4.5%

**What is I-CRR?**
- Introduced by RBI via its August 10 guidelines.
- Banks had to bank 10% of their incremental Demand and Time Liabilities between May 19 and July 28 with the RBI for a temporary period.
- To absorb excess liquidity with the banks due to deposit of 2000 Rs. notes.
- Purpose: protecting the economy from liquidity shocks and resultant inflation.
- RBI had tried changing Repo rates and reverse repo rates to manage liquidity, but it was not working.

## 3. Does the inflation target need a reset?

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

**Mains:** Need for inflation target reset

**Context:** The consumer price index (CPI) shot up by 7.4% year-on-year in July 2023.
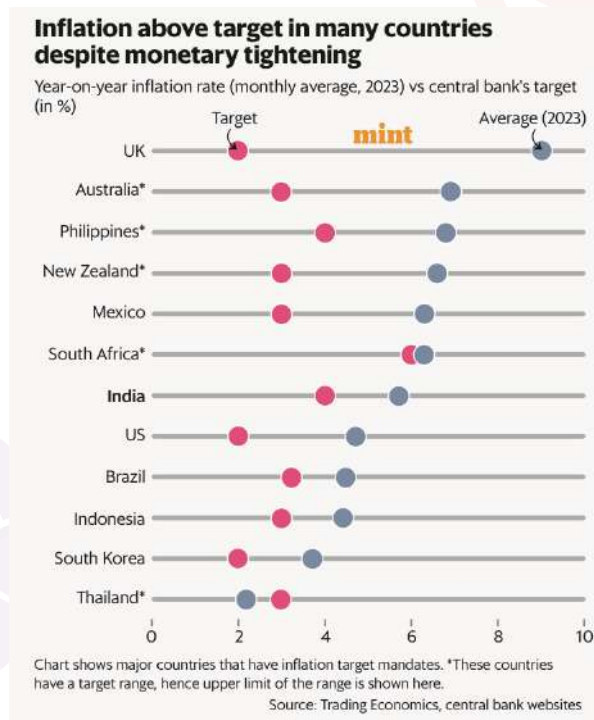


**Source: Mint**

- India adopted flexible inflation targeting in 2016, and an inflation target is set every five years.
- In March 2021, the government retained the target at 4% headline CPI inflation for April 2021-March 2026, with lower and upper tolerance limits of 2% and 6%, respectively.
- Since April 2021, inflation has been more than 6% in more than half of the months

**Source: Mint**

**Why should the inflation target be recast?**
● External Disruptions - Russia – Ukraine war
● Countries have become more inward looking
● We are yet to return to normalcy after pandemic
● Production disruption has become a common thing

## 4. Dark Patterns

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

**Prelims:** Dark Patterns

**Context:** Govt releases guidelines for public consultation. These dark patterns mislead people into doing something they originally did not wish to do, such as paying for items or services they did not intend to buy.

**Dark Patterns:**
● The term was introduced by Harry Brignull in 2010
● Also known as deceptive patterns
● It refers to a design or user interface technique that is intentionally crafted to manipulate or deceive users into making certain choices or taking specific actions that may not be in their best interest

**FALSE URGENCY TO DISGUISED ADs**

> **False Urgency:** Creates a sense of urgency or scarcity to pressure consumers into making a purchase or taking an action

> **Basket sneaking:** Adding additional products or services to the shopping cart without user consent

> **Subscription traps:** Makes it easy for consumers to sign up for a service but difficult for them to cancel it

> **Confirm shaming:** Involves guilt as a way to make consumers adhere. It criticises or attacks consumers for not conforming to a particular belief or viewpoint

> **Forced action:** Involves forcing consumers into taking an action they may not want to take, such as signing up for a service in order to access content

> **Nagging:** Refers to persistent, repetitive and annoyingly constant criticism, complaints, and requests for action

> **Interface interference:** Involves making it difficult for consumers to take certain actions, such as canceling a subscription or deleting an account

> **Bait & switch:** Involves advertising one product or service but delivering another, often of lower quality

> **Hidden costs:** Involves hiding additional costs from consumers until they are already committed to making a purchase.

> **Disguised ads:** Advertisements that are designed to look like other types of content, such as news articles or user-generated content

**Source: Times of India**

● The department of Consumer Affairs has released the draft guidelines to curb the dark patterns and has sought feedback till October 5th
● The ministry has the powers to act against such practices under section 18 of Consumer Protection Act 2019
● The guidelines will be applicable to all platforms, sellers and advertisers
● All the above shall not be engaged in dark patterns

## 5. 9 years of PMJDY

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

**Mains:** Analysis of PMJDY

**Context:** The Pradhan Mantri Jan Dhan Yojana (PMJDY) has successfully completed nine years of implementation.
● It was launched on August 28, 2014 and stands as one of the largest financial inclusion initiatives globally, led by the Ministry of Finance to provide affordable financial services to vulnerable and economically disadvantaged sections.

**The Financial Inclusion Schemes implemented earlier**
● Appointment of Business Correspondents
● Nationalization of the banking sector
● Mandatory Priority Sector Lending (PSL) norms
● Promotion of RRBs (Regional Rural Banks) and Cooperative banks

## '50.09 cr accounts opened, ₹2.03 lk cr deposited'

### NINE YEARS OF PM JAN DHAN YOJANA

**PMJDY ACCOUNTS (IN CR)**

| Mar'15 | Mar'16 | Mar'17 | Mar'18 | Mar'19 | Mar'20 | Mar'21 | Mar'22 | Mar'23 | Till Aug 16 '23 |
|---|---|---|---|---|---|---|---|---|---|
| 14.72 | 21.43 | 28.17 | 31.44 | 35.27 | 38.33 | 42.2 | 45.06 | 48.65 | 50.09 |

| | Deposits (in Rs cr) | Deposit per account (in Rs) | *No of Rupay debit cards |
|---|---|---|---|
| Till August 16 | 2,03,505 | 4063 | 33.98 |
| March 2023 | 1,98,844 | 4087 | 32.94 |
| March 2022 | 1,66,459 | 3694 | 31.62 |
| March 2021 | 1,45,551 | 3449 | 30.9 |
| March 2020 | 1,18,434 | 3090 | 29.3 |
| March 2019 | 96,107 | 2725 | 27.91 |
| March 2018 | 78,494 | 2497 | 23.65 |
| March 2017 | 62,972 | 2235 | 21.99 |
| March 2016 | 35,672 | 1665 | 17.75 |
| March 2015 | 15,670 | 1065 | 13.15 |

issued in PMJDY accounts (in cr)*

### PMJDY: AN OVERVIEW

- Over 1.44 crore new accounts opened under Pradhan Mantri Jan Dhan Yojana (PMJDY) till August 16 this year. This has taken the total number of accounts under PMJDY to over 50.09 crore accounts since its inception
- Rs 2.03 lakh crore amount has been deposited under the PM Jan Dhan Yojana accounts in the last nine years
- "We have successfully achieved the 50 crore account opening mark in August. On an average 2.5-3 crore JDY accounts have been opened every year," Financial Services Secretary Vivek Joshi said
- Zero balance accounts under Jan Dhan yojana have reduced to 8 per cent of total accounts as of August 2023 from 58 per cent in March 2015
- Average deposit per account under PMJDY has increased from Rs 1,065 as of March 2015 to Rs 4,063 in August 2023, an increase of 3.8 times
- 33.98 crore RuPay cards were issued to PMJDY account holders as of August 2023, up from 13 crore at the end of March 2015
- 56 per cent of the Jan Dhan account holders are women and 67 per cent of the total accounts are in rural and semi-urban areas

*Compiled by Aanchal Magazine*

**Source: Indian Express**

### Situation

- The number of accounts have crossed 50 Cr and the deposits over ₹ 2 lakh Cr
- The deposits in the accounts have more than doubled in the last 52 months from ₹ 96107 Cr in March 2019
- The average deposit has risen to ₹ 4063
- The number of zero balance accounts have dropped from 58% in March 2015 to just 8%
- Women account for 56% of the deposits and 67% of the accounts have been opened in rural areas

### Impact

- The scheme has helped the govt to plug loopholes in subsidy transfers
- The cumulative savings between FY15 and FY22 was ₹ 2.73 tn
- The DBT transfers have increased by 100 times
- Has helped in women empowerment
- The number of zero balance accounts have come down to 8% (58% in FY15)
- Banks are pushing these accounts with innovative financial products such as micro insurance, pension and micro credit. This is helping the banks in building the credit histories

**Source: PIB**

## 6. Global Bond Index

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

**Prelims:** Global Bond Index
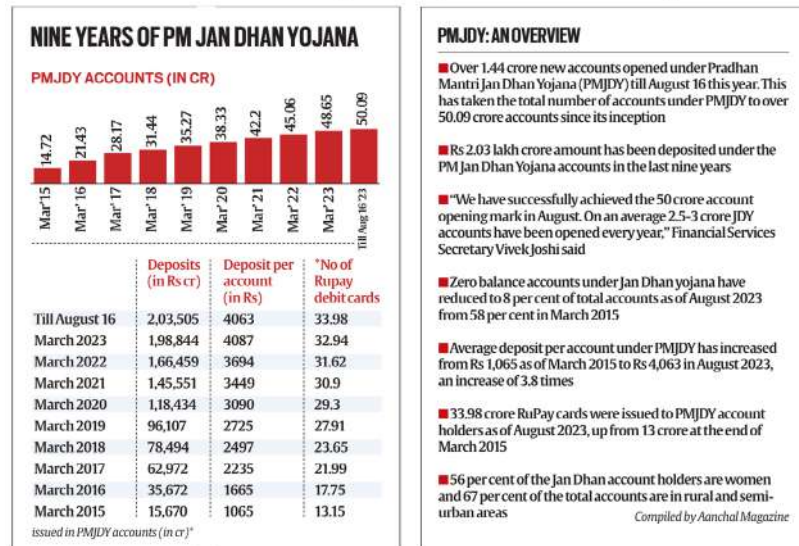
**Context:** JP Morgan announced that Indian Government Bonds will now be included in their Government Bond Index-Emerging Markets from June 2024.

### What is the Global Bond Index?
● Benchmark index that tracks the performance of a diversified portfolio of bonds from issuers around the world.
● Used by investors, portfolio managers, and financial professionals to measure the performance of the global bond market and to make comparisons between various fixed-income investments.
● Examples: Bloomberg Barclays Global Aggregate Bond Index, the J.P. Morgan Global Bond Index, J.P. Morgan Government Bond Index-Emerging Markets, the Citi World Government Bond Index, etc.

### Conditions for listing in GBI-EM
● Only sovereign bonds
● Should be in local currency
● 3 important factors: Liquidity, safety and returns

### Benefits of this move
● Global investors will be able to track Indian bonds easily.
● So more investors will start investing in our bonds.
● Will strengthen Indian Rupee.

### Possible disadvantages
● Increased exposure, so possibility of capital Flight in case of any economic crises.
● Close scrutiny of our domestic policies.
● Volatility might creep into Bond markets due to the change of interest rates of the developed economies.

## 7. Economy grows at 7.8%

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

### Prelims: GDP
● Growth in India's Gross Domestic Product (GDP) and the Gross Value Added (GVA) in the economy sped to a four-quarter high of 7.8% in the first quarter of this financial year.
● But economists worry that a weak monsoon, high inflation and global headwinds could temper the pace of growth through the rest of 2023-24.
● Manufacturing GVA grew for the second quarter in a row, after half a year of contraction, with the pace of growth picking up slightly to 4.7% in the first quarter (Q1) of the year, from 4.5% in the previous quarter.
● Agriculture, forestry and fishing GVA grew 3.5% between April and June, but it was the services sectors that saw the sharpest surge and lifted the estimates released by the National Statistical Office (NSO).
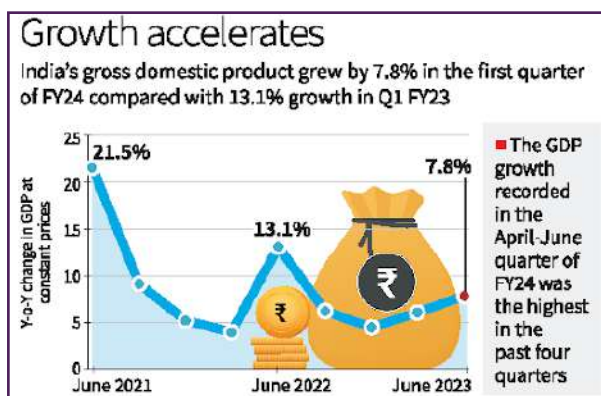


**Source: The Hindu**

## 8. An uneven rebound

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

**Prelims:** National Statistical Office, Nominal and Real GDP, Gross Fixed Capital Formation

**Mains:** Global Economic Slowdown, Inclusive Growth, India as fastest growing economy

**Context:** The **National Statistical Office (NSO)** under the Ministry **of Statistics and Programme Implementation** has released the estimates of GDP for the April-June quarter (Q1) of 2023-24.
- **India's Q1 GDP growth:** 7.8%, slightly below RBI's 8% estimate.
- **India continues to be the fastest-growing major economy:** In comparison, China recorded 6.3% growth but also faces fresh concerns of a slowdown.
- **Farm sector GVA in Q1:** Maintained growth at 3.5%, potential slowdown is expected due to a below-average monsoon and low reservoir levels affecting the Rabi crop.
- **Services sector in Q1:** Segments like trade, hotels, and transport have shown strong growth, but in absolute terms, it still remains 1.9% below pre-COVID-19 levels.
- **Government capital spending:** Gross fixed capital formation is driven by government spending and private sector investment is still sluggish.
- **Manufacturing GVA:** Second consecutive quarter of growth, increased from 4.5% to 4.7%.
- **Private consumption spending:** Rose by 6%, but lower-income segments may be affected by persistent inflation, especially in food items.
- **Inflation interventions:** Export curbs on rice and onions may harm growth and external trade balance. Relief measures like ₹200 cut in LPG cylinder prices pose risks to fiscal stability and in the process, future growth-focused investment.

*Nut Graf: India's GDP growth stood at 7.8% in Q1 of 2023-24, slightly below RBI's 8% estimate. The farm sector maintained growth at 3.5%. Government capital spending drove capital formation, while inflation interventions like export curbs and LPG price cuts might pose risks to fiscal stability.*

## 9. Three-fourths of India's irrigation sources run on electricity: study

**Syllabus:** Different Types of Irrigation and Irrigation Systems

**Prelims:** Minor Irrigation Census, Water Consumption Patterns

**Mains:** Importance of Minor Irrigation Schemes, Sustainability of water usage in India

**Introduction**
- The sixth edition of the Minor Irrigation Census (MIC) finds that electricity is the dominant source of power for irrigation, accounting for 76% of the total sources.

**Important details from the Report**
- The use of electricity for irrigation has shown a slower growth rate compared to previous years, increasing from 56% in 2011 to 70% in 2017 and then to 76% in the latest report.
- The electrification of groundwater withdrawal corresponds to a rise in the use of tube wells and borewells that can extract water at greater depths.
- The number of dugwells or ponds and shallow tube wells has decreased, while the number of medium-sized (draw water from up to 70m) and deep wells (beyond 70m) has increased.
- Overall, there were 23.14 million minor irrigation schemes reported in the country by different state governments, with 21.93 million (close to 95%) being for groundwater extraction and 1.21 million for surface-water extraction. This has raised concerns about excessive groundwater withdrawal.
- Uttar Pradesh had the largest number of Minor Irrigation schemes in the country, followed by Maharashtra, Madhya Pradesh, and Tamil Nadu.
- Maharashtra, Karnataka, Telangana, Odisha, and Jharkhand have the highest share in surface-water schemes.
- The number of Minor irrigation schemes increased by about 1.42 million between the fifth and sixth editions.
- Privately owned, and small and marginal farmers owning less than two hectares of land were the major beneficiaries (96.6%) of these minor irrigation schemes.

**Why is the Minor Irrigation Census needed?**
- Climate and weather conditions in India are diverse and vary greatly across different regions. Some areas experience extreme heat, while others are very cold.
- Monsoons are irregular and unpredictable, and their distribution across the country is non-uniform. As a result, irrigation is essential for many parts of India.
- Non-irrigated agriculture relies solely on rainfall and is only feasible in areas with consistent soil moisture levels during crop growth periods.
- Irrigated agriculture supplements rainfall with water from human-made sources, such as rivers, lakes, or reservoirs.
- Minor irrigation schemes play a significant role in preserving India's food security and allied industries. The Minor Irrigation Census helps understand the water usage patterns and help build sustainable irrigation. The data collected from these censuses helps policymakers plan, develop, and manage minor irrigation schemes effectively.
- It is released by the **Ministry of Jal Shakti**
- The first five censuses of minor irrigation schemes were conducted in 1986-87, 1993-94, 2000-01, 2006-07, and 2013-14, respectively. **The recent sixth edition of this report details the trends in irrigation for the year 2017-18.**

*Nut Graf: Electricity is the dominant source of power for irrigation in India, accounting for 76% of the total sources. The use of electricity has shown a slower growth rate compared to previous years, but the number of minor irrigation schemes has increased by about 1.42 million between the fifth and sixth editions. Privately owned, and small and marginal farmers owning less than two hectares of land were the major beneficiaries (96.6%) of these minor irrigation schemes.*

## 10. Opportune moment

**Syllabus:** GS 3 – Economy

**Prelims:** GST

**Introduction**
- In the first five months of 2023-24, GST revenues have shown a growth of 11.3%.
- The average monthly GST collection has increased to ₹1.66 lakh crore, up from ₹1.5 lakh crore in the previous year.

**Growth Trends**
- In April, there was a record GST collection of ₹1.87 lakh crore, contributing to an 11.5% growth in the first quarter.
- However, the growth rates have slowed down to 10.8% in July and 10.76% in August, which is the slowest rise since July 2021.
- In August, revenues reached a three-month low of ₹1.59 lakh crore, down from ₹1.65 lakh crore in July.

**Sectoral Analysis**
- Goods imports saw a 3% increase in August, indicating some recovery in discretionary demand.
- Revenues from domestic transactions and services imports rose by 13.8% in August, which was slightly slower than the 15.1% growth in July.

**Impact of Festive Season and Inflation**
- While the upcoming festive season could boost growth in revenue sources, high inflation may influence consumer preferences, favouring items preferred by high-income households.

**E-invoicing Impact**
- The introduction of mandatory e-invoicing for firms with an annual turnover over ₹5 crore is expected to have a positive impact on this month's revenues.
- However, the effects of the festive season on revenues will become clear two months from now.

**Overall GST Revenue Trajectory**
- GST revenues continue to follow a positive trajectory, thanks to measures to combat evasion and fake registrations.
- There is an opportunity to simplify and rationalise the complex multiple-rate GST structure, as suggested by the GST Council in 2021.

**Delayed Rate Adjustment**
- The Finance Ministry had previously postponed rate adjustments due to inflation, and this year, the plan for rationalisation remains on hold.
- A ministerial group (GoM) responsible for recommending a new rate structure needs to be reconstituted.

**Balancing Growth and Inflation**

- Delaying tax rate changes could hinder growth potential and efforts to combat inflation.
- It is crucial to maintain an ongoing dialogue with states and revive the GoM to navigate this complex process effectively.

## 11. How unemployment is measured

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

**Mains:** Concepts related to unemployment measurement, labour force participation, economic surveys and methodologies.

**Prelims:** About measurement of unemployment and challenges involved.

### Context
The article explores how unemployment is measured in India, delving into the complexities of defining and quantifying joblessness in a developing economy.

### Introduction: Understanding Unemployment Rates
- The Periodic Labour Force Survey (PLFS) in 2017 revealed India's highest-ever recorded unemployment rate at 6.1%.
- In 2021-22, PLFS reported a reduced unemployment rate of 4.1%, although still higher than some developed economies.
- Unemployment rates vary between India and the U.S. due to their economic differences.

### Defining Unemployment: The International Labour Organization (ILO)
- Unemployment is not simply joblessness; it's defined by ILO as being out of a job, available for work, and actively job-seeking.
- The labour force comprises the employed and unemployed, while those not in either category, like students or those engaged in unpaid domestic work, are out of the labour force.
- The unemployment rate is the ratio of the unemployed to the labour force.
- Unemployment can also occur if the economy isn't creating enough jobs or if people stop seeking work.

### Measuring Unemployment in the U.S.
- In the U.S., the employment-to-population ratio (EPR) in 2019 was 60.8%, with an unemployment rate of 3.7%.
- In 2022, EPR dropped to 60%, but the unemployment rate decreased to 3.6%, largely due to people leaving the labour force.

### Challenges in Measuring Unemployment in India
- Measuring unemployment in a developing economy is complex due to social norms affecting job-seeking decisions.
- A survey found that many women engaged in domestic work would work if opportunities were available within their households, yet they are not considered unemployed as they are not actively job-hunting.
- India's informal job nature makes it challenging; individuals may alternate between different roles over time.
- India uses two measures for classification: Usual Principal and Subsidiary Status (UPSS) and Current Weekly Status (CWS).
- UPSS considers individuals who worked in a subsidiary role for at least 30 days as employed, potentially underestimating unemployment.
- CWS uses a shorter reference period (a week) and may lead to higher unemployment rates due to a lower probability of finding daily work.

### Lockdown Impact on Unemployment
- The lockdown in March 2020 disrupted the Indian economy, but PLFS data from July to June showed no immediate impact.
- UPSS criteria might not classify someone as unemployed if they lost work during the lockdown but found employment within six months.
- The CWS standard with a shorter reference period could show higher unemployment during the lockdown quarter but lower rates when considering the entire year.

***Nut Graf:*** *Amidst differing economic structures and social norms, this article examines the intricacies of measuring unemployment in India, addressing the challenges and implications of various methodologies, and discusses the impact of the COVID-19 lockdown on unemployment rates.*

## 12. Impact of RBI's lending guidelines

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

**Mains:** Indian economic policies, financial sector reforms, and their impact.

**Prelims:** About the role and functions of RBI.

### Context
On August 18, the Reserve Bank of India (RBI) introduced guidelines enabling borrowers to switch between fixed and floating interest rates, addressing concerns and providing flexibility.

### Introduction
● On August 18, the Reserve Bank of India (RBI) introduced new guidelines allowing borrowers to switch from floating interest rate-based loans to fixed interest rate-based loans.
● The objective is to address borrowers' concerns related to loan tenure and increased EMIs when benchmark interest rates rise.
● These provisions apply to both existing and new loans and will be implemented by the end of the current calendar year.

### RBI's Instructions:

### Option to Switch Interest Rate Mechanism
● Borrowers now have the option to switch from floating to fixed interest rates for their loans.
● This switch is based on a board-approved policy drafted by the lending entity.

### Policy Guidelines
● The lending entity's policy must specify how many times such a switch is allowed during the loan tenure.
● Lenders must transparently communicate all relevant charges, service charges, and administrative costs associated with this transition.
● The responsibility lies with the lender to clearly communicate the impact of the change from floating to fixed interest rates (e.g., changes in EMI and/or loan tenure) at the time of loan sanction.

### Borrower Options
● Borrowers can choose to enhance the EMI, extend the loan tenure, or opt for a combination of both.
● They also have the choice to prepay the loan partially or in full during the loan tenure. However, prepayment may incur foreclosure charges or prepayment penalties.

### Quarterly Statements
● Lending entities are required to provide borrowers with statements at the end of each quarter.
● These statements should detail principal and interest recovered, EMI amounts, remaining EMIs, and the annualised rate of interest/Annual Percentage Rate (APR) for the entire loan tenure.
● RBI emphasises that these statements should be simple and easily understood by borrowers.

### Application of Instructions
● The instructions apply to equated instalment-based loans with variations based on the nature of the loan.

### Difference between Fixed and Floating Interest Rates
● Fixed interest rates remain constant during the loan tenure, providing certainty and security.
● Floating interest rates fluctuate based on market dynamics and the base rate, carrying some risk.
● Floating rates are generally lower than fixed rates but can rise with benchmark rates.
● Floating interest rate loans do not have prepayment penalties, unlike fixed-rate loans.

### Assessing Repayment Capacity
● RBI requires lending entities to assess the repayment capacity of prospective borrowers.
● This assessment allows borrowers sufficient headroom/margin for potential tenure elongation or increased EMIs.
● Parameters for assessment include the borrower's payment capacity and age.
● RBI suggests avoiding excessively long elongation, ensuring that extensions are reasonable.

**Commercial Decision by Banks**
- RBI emphasises that the decision to allow switches between interest rate mechanisms is a commercial decision that banks need to make.
- The guidelines provided by RBI offer a broad framework for banks to follow.

*Nut Graf: RBI's recent guidelines empower borrowers to transition between fixed and floating interest rates, emphasising transparency, options, and borrower-centric communication in loan management.*

## 13. Gresham's law: what happens when governments fix currency exchange rates

**Syllabus:** GS 3 – Economy

**Prelims:** Gresham's law

**Introduction to Gresham's Law**
- Gresham's law is a principle stating that "bad money" tends to force "good money" out of circulation.
- It occurs when the government fixes an exchange rate between two currencies at a different ratio than the market exchange rate.

**Undervalued and Overvalued Currency**
- In Gresham's law, the undervalued currency (fixed below market rate) goes out of circulation.
- The overvalued currency remains in circulation but struggles to find buyers.

**Market Exchange Rate Dynamics**
- The market exchange rate is an equilibrium price where currency supply equals demand.
- Currency supply increases with rising prices and decreases with falling prices, while demand follows the opposite pattern.

**Impact of Price Fixing**
- Government-fixed currency prices below market rates reduce currency supply and increase demand, leading to currency shortage.

**Origins and Applicability of Gresham's Law**
- Named after English financier Thomas Gresham, it applies to both paper and commodity currencies.
- It occurs when governments arbitrarily fix the price of a commodity, making it undervalued in comparison to the market rate.
- Such undervalued commodities disappear from formal markets, often entering the black market.

**Examples of Gresham's Law**
- Seen in cases where governments fix exchange rates of commodity money (e.g., gold, silver) below market prices.
- Holders may melt commodity money to sell at higher market rates.

**Sri Lanka's Recent Experience**
- Sri Lanka faced Gresham's law during an economic crisis when the central bank fixed the Sri Lankan rupee to the U.S. dollar below market rates.
- A mandated rate of 200 rupees per dollar caused the U.S. dollar to be undervalued.
- The U.S. dollar left the formal foreign exchange market, leading to black market transactions at higher rates.

**Conditions for Gresham's Law**
- Gresham's law applies when governments legally fix exchange rates and enforce them effectively.

**Complement to Gresham's Law: Thiers' Law**
- Thiers' law, also known as "good money drives out bad," complements Gresham's law.
- It occurs when people choose to use currencies they consider of higher quality when exchange rates are not fixed.
- Private cryptocurrencies are cited as an example of good money driving out bad money issued by governments.

## 14. Tracking India's growth trajectory

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

**Mains:** Complexities in the calculation of GDP and other challenges involved with inflation, tax revenue patterns.

**Prelims:** About GDP calculation and Inflation.

### Context
The article examines India's Q1 FY24 GDP growth, highlighting complexities in its calculation, inflation challenges, tax revenue patterns, and government expenditure's impact on the economy.

### Introduction
● Traditional assessment of a country's economic situation relies on GDP growth rates, both quarterly and annually.
● India's economic performance is often likened to a report card, but it tells a nuanced story.

### Q1 FY24 Growth Figures:
● Nominal GDP growth rate: 8%
● Real GDP growth rate: 7.8%
● Agriculture sector: 3.5% growth
● Services industry: 12.2% growth
● Experts suggest that the growth for the current financial year might sustain close to 6.5%.

### Calculating GDP
● NSO uses the income approach rather than expenditure approach for calculating GDP.
● The income approach involves summing up all national incomes from the factors of production and accounting for other elements such as taxes, depreciation, and net foreign factor income.
● The assumption generally is that both methods lead to similar results. However, the expenditure approach dictates headline growth to be 4.5% rather than 7.8% which is a large discrepancy.

### Inflation Adjustments
● The price deflator used for inflation adjustment has overstated real growth due to falling commodity prices.
● The base effect from COVID-19 degrowth in previous years impacts comparative statistics.
● India's inflation rate, calculated through the consumer price index, faces challenges amid rupee depreciation.
● Rising crude petroleum prices and falling domestic diesel consumption pose risks to economic activity.

### Revenue from Taxes
● Government's direct tax revenue weakened while indirect tax remained strong, forming a K-shaped pattern.
● Progressive taxation's slower growth is unexpected in an economy boosted by the services industry.
● Narrowing revenue streams indicate austerity measures to control the budget deficit.
● FY24 growth from government expenditure appears unlikely.

### A Nuanced Approach
● A meticulous analysis of Q1 FY24 reveals potential overembellishment in the growth narrative.
● Discrepancy between income and expenditure approaches raises questions about the narrative's veracity.
● Inflation adjustments and tax revenue fluctuations signal caution.
● Concerns about agriculture and fiscal constraints suggest a more restrained economic outlook.
● India's economic performance may not be the unequivocal success initially depicted, urging a more nuanced assessment.

### Conclusion
● India's economic growth in Q1 FY24 demands a critical and nuanced approach.
● The reported narrative may be somewhat overstated, considering the disparity in growth figures and other economic indicators.
● Caution is advised in assessing India's economic trajectory, despite signs of resilience.

***Nut Graf:*** *India's Q1 FY24 economic growth, although seemingly optimistic, raises doubts due to discrepancies in GDP calculation methods, inflation, tax revenue trends, and fiscal constraints, necessitating a more nuanced assessment.*

## 15. Propelling India's development

**Syllabus:** GS-3, Indian Economy and issues relating to Planning, Mobilization of Resources; Inclusive Growth and issues arising from it

**Mains:** What role can public investment play in ensuring inclusive growth and sustaining development?

**Context:**
- In the 1960s, India embarked on ambitious space research despite scepticism, diverting limited resources into space exploration.
- India's investment in advanced technology and research programs aimed to accelerate national development after decades of colonialism.
- Vikram Sarabhai, a key figure in India's space program, envisioned using satellites for telecommunications, agriculture, and health education.

**Journey to the Moon:**
- India's space journey began with the establishment of the Indian Space Research Organization (ISRO) in 1969.
- The nation's commitment to technological advancement led to various achievements, including landing a rover on the moon's south pole and launching missions to study the sun.
- Public funding played a crucial role in sustaining these endeavours, as the benefits of technology take time to materialize and may not offer immediate commercial viability.

**Technology to Remedy Underdevelopment:**
- India's development strategy can be likened to a "moonshot" approach, leveraging modern industrialization to overcome historical challenges.
- Critics argued that India should have focused on labour-intensive industries due to its surplus labour force, but the timeline and investment required for new technologies made public funding essential.
- Technologies with a "public good" nature, like the Internet, often require government support for development.
- India's state-supported technological capabilities laid the foundation for private enterprise success in various sectors, such as pharmaceuticals, information technology, and space exploration.

**Inequalities, a Hurdle for Progress:**
- Despite technological advancements, India faced persistent inequalities and social disparities.
- Land redistribution and asset ownership remained inadequate, particularly among marginalized communities like Dalits (Scheduled Castes).
- Underinvestment in basic education exacerbated these inequalities, limiting access to higher education and better-paying jobs.
- In 2021-22, a significant portion of SC workers engaged in manual labour, highlighting the contrast with more egalitarian East Asian countries.

**Reinstate State Support:**
- India should acknowledge the successes and failures of its ambitious post-independence development strategy.
- The strategy of building technological and industrial capabilities with substantial state support was correct and should be reinstated.
- Abandoning industrial planning after 1991 was a mistake, and India must now embrace industrial policies in a globalized economy, as demonstrated by the United States and China.
- Simultaneously, India needs to focus on making economic growth more inclusive, particularly in education, including higher education, for all segments of the population, including marginalized groups.
- Achieving social and human capabilities for the masses will be akin to a "lunar takeoff" in economic progress.

***Nut Graf:*** *India's journey from scepticism to space exploration, technological ambitions, and persistent inequalities is a complex narrative. Beginning with audacious space endeavours driven by public investment, it underscores the importance of state support for technological advancement. There is a need to address long-standing inequalities and reinstate state-backed industrial policies while ensuring inclusive education for all to propel India towards comprehensive economic progress.*

## 16. What are the reasons for the rise in global debt?

**Syllabus:** Mobilization of resources, Growth

**Prelims:** Concept of debt

**Mains:** Reasons for rise in global debt

**Context:** According to a recent report by IIF (Institute of International Finance), Global debt has risen by about $100 trillion over the last decade ($307 trillion now). As a share of GDP it is 336%. This rise seen after decline in the past 7 quarters and 80% of this rise is seen in advanced economies.

### What is Global Debt?
- Debt of the governments, private sector, and individuals.
- Governments borrow to Meet various expenditures that they are unable to meet through tax and other revenues, to Pay interest on the money that they have already borrowed
- Private sector borrows to invest.

### Why Global Debt is rising?
- Debt levels over time rise since the total money supply usually steadily rises each year in countries across the globe.
- Even a simple rise in the total amount of savings in an economy can cause a rise in debt levels as these increased savings are channeled into investments
- Only peculiarity: Rise seen despite an increase in interest rates.
- The reasons for decline in the past 7 quarters are – Reduced economic activity; Inflating away of debt by the governments (which eventually led to inflation.)

### Concerns?
- Debt sustainability, especially when taken to give out freebies.
- Central banks across the world have been increasing interest rates to fight inflation: can increase pressure on governments.
- Rising private debt is also a cause of concern: can cause unsustainable booms that may end in economic crisis (like 2008).

### Public Debt and India's status
- WEF warned at start of 2023 about rising public debt across the world due to 2 reasons:
  - Fiscal stimuli for businesses by govts. Post pandemic
  - Rising interest rates to manage inflation.
- India's total debt to GDP Ratio is 170% according to the Economic Survey
- Public debt is 84% of GDP.
- High but sustainable, as long as the economy continues to grow. But need to reign in on non-productive debts.

*Nut Graf: The IIF has warned that the international financial infrastructure is not equipped to handle unsustainable domestic debt levels. Hence the policies of the public and private sector should focus on making the debt sustainable.*

## 17. The G20's screen over 'mazdoors', their rights

**Syllabus:** Inclusive Growth and issues arising from it

**Mains:** Labour Rights, Inclusive Growth, Sustainable Development Goals

**Prelims:** G-20 Summit, ILO's Forced Labor Convention

### Introduction
- India achieved significant diplomatic success at the G-20 Summit.
- The African Union was granted G-20 membership, with a show of solidarity among the Global South.
- Despite concerns that a joint declaration wouldn't be possible due to the Russia-Ukraine conflict and differing interests among G-20 members, India ensured its release.
- India also passed the baton to Brazilian President Luiz Inácio Lula da Silva, who will preside over the next G-20 meeting.

- Unfortunately, India failed to utilise this opportunity to promote workers' rights and well-being during the G-20 summit despite the Labor 20 (L20) meetings held in India.
- The L20, a group of G20 leaders focused on workers' issues, held two meetings in India and was led by the Bharatiya Mazdoor Sangh (BMS) while the International Trade Union Confederation (ITUC) boycotted the meetings.

**Exploitative labour conditions: In India and West Asia**
- Saudi Arabia, which hosts over 2.5 million Indian workers, is a permanent member of the G-20, while Oman and the UAE, which were invited to the summit, have nearly 800,000 and 3.5 million Indian workers, respectively.
- India is the world's largest migrant-sending country, with an estimated 13 million workers abroad, of which an estimated nine million are working in exploitative conditions in the Arab Gulf.
- The Indian government missed an opportunity to address serious issues faced by workers in India, such as forced labour, modern-day slavery, and the Kafala system in the Arab Gulf.
- The kafala system ties migrant workers to their employers, making it difficult for them to leave their jobs or change employers, increasing the risk of forced labour and modern-day slavery.
- Workers' issues such as job creation, decent working conditions, equal pay, gender equality, the elimination of forced labour and child labour, an end to modern-day slavery, and the protection of their rights and the welfare of their families were not prioritised in the G-20 summit.
- In 2021, G-20 countries imported goods worth ₹41 lakh crore that were produced using modern-day slavery, highlighting the need for greater awareness and action against such practices.
- **Issues in India:**
  - The exploitation of Indian workers is not limited to the Arab Gulf; workers in various industries in India, including textiles, brick kilns, shrimp farming, copper manufacturing, stone cutting, and plantations, face forced labour and modern-day slavery.
  - According to the Walk Free Foundation, there are an estimated 27 million people trapped in modern-day slavery in G-20 countries, of whom 11 million are in India.

**Modern forms of forced labour**
- There are 530 million workers in India, of which 430 million are in the informal sector and vulnerable to different forms of exploitation, including forced labour.
- Forced labour and modern-day slavery are different from substandard or exploitative working conditions.
- Various indicators can be used to ascertain when a situation amounts to forced labour, such as restrictions on workers' freedom of movement, withholding of wages or identity documents, physical or sexual violence, threats and intimidation, or fraudulent debt from which workers cannot escape.
- Examples of forced labour:
  - Workers in the shrimp industry in Andhra Pradesh who are paid less or not paid for overtime, and are threatened with firing if they ask for it.
  - Workers who are forced to work until they have paid off a loan taken from the company.
  - Withholding workers' identity documents, such as Aadhaar cards or ration cards, and denying them access to these documents until the work is completed.
  - Threatening workers with sexual, physical, or mental abuse to get the work done.
- Addressing forced labour and modern-day slavery is crucial for India to reduce inequality, promote stable social justice, and protect democracy.
- The consolidation of labour laws into four labour codes by the Union government has led to protests by workers who fear it will negatively impact decent working conditions.
- India has signed and ratified the ILO's Forced Labour Convention known as C29 but conditions of forced labor continue to exist.

**Way Forward:**
- The issue of worker exploitation is not unique to India but is a common problem among all G-20 countries.
- Decent working conditions are essential for workers to earn a living wage and lift themselves and their families out of poverty.
- The G-20 should work towards investments in job creation, compliance with fundamental rights at work, ensuring minimum living wages and equal pay, social protection for all and coordinating action on inclusion to realize the Sustainable Development Goals target of eradicating poverty by 2030.

*Nut Graf: India failed to utilize the G-20 summit to promote workers' rights and well-being despite the Labour 20 (L20) meetings held in India. The government missed an opportunity to address serious issues faced by workers in India, such as forced labour, modern-day slavery, and the kafala system in the Arab Gulf. We should work towards addressing forced labour and modern-day slavery by investing in job creation, ensuring compliance with fundamental rights at work, and ensuring social protection for all.*

## 18. Ultra-long g-secs

**Syllabus:** GS 3- Economics

**Prelims:** Green bonds and G- secs.

**Introduction**
- India is issuing its first-ever 50-year government bonds and 30-year green bonds.
- Insurance firms and provident funds are interested in these long-term investment opportunities.

**Interest from Insurance Firms and Provident Funds**
- Insurance companies have a natural demand for 50-year government bonds as they align with insurers' asset-liability management needs.
- The insurance sector had requested the issuance of 50-year bonds.
- Provident funds and pension funds see value in the long-term security offered by these bonds. They are also expected to actively participate in the bond auction.

**Green Bonds Reintroduced**
- The Indian government has reintroduced green bonds for the second half.
- The goal is to raise ₹20,000 crore through these bonds, with half of it coming from the new 30-year green bonds.
- Insurance companies find comfort in longer-term green bonds for regulatory compliance.

**Investment Perspective**
- Insurance companies are interested in green bonds as a sustainable investment option.
- More investments in green bonds are expected as supply increases in the second half of the year.

## 19. Identity pangs: A report on global digital IDs brings Aadhaar's limitations, risks in focus

**Syllabus:** Indian Economy and issues relating to Growth, Development and Employment.

**Prelims:** "Decentralized Finance and Digital Assets" Report, Aadhaar Payment Bridge System (APBS), MGNREGA, NACH

**Mains:** Aadhaar leading to exclusion of rights and service denials

**Introduction**
- Moody's Investors Service has flagged concerns about India's digital identification program, Aadhaar, in a recent report **"Decentralized Finance and Digital Assets."**

**Moody's assessment of Aadhaar**
- The report highlights security and privacy risks associated with centralized digital ID systems like Aadhaar, which relies on a single entity controlling identifying credentials.
- Moody's suggests that decentralized ID systems that give users more control over their data may be more effective and secure.
- The report notes that Aadhaar's biometric-based authentication systems are not foolproof and can result in service denials, particularly for manual labourers in hot and humid climates.
- The reliability of biometric technologies for identity verification is questionable, according to Moody's.

**Impact on vulnerable groups**
- The report's findings are relevant given the Indian government's plan to transition all payments under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) to an Aadhaar-based payment system.
- Concerns about Aadhaar's efficacy and potential for excluding certain groups have been raised since its launch.
- Despite these concerns, the government has made Aadhaar mandatory for most welfare benefits and activities, including opening bank accounts, securing telephone connections, and remitting taxes.
- While Aadhaar has enabled the direct transfer of benefits to millions and reduced fraud, instances of people being excluded from services due to lack of an Aadhaar or difficulties with biometric confirmation have been reported.
- Last year, an audit of the Unique Identification Authority of India (UIDAI) by the Comptroller and Auditor General of India found lapses that jeopardize privacy and compromise data security, as well as flaws in enrolment processes leading to duplication and faulty biometrics.

**How is Aadhaar being utilised under MGNREGA?**

- Under MGNREGA, the Aadhaar Payment Bridge System (APBS) has been in use since 2017, and after its successful implementation, the government has decided to extend it to all beneficiaries.
- Due to frequent changes in bank account numbers by beneficiaries and non-updating of new account numbers by concerned programme officers, wage payments are being rejected by destination bank branches.
- To address the issue of delayed wage payments, the APBS is being used for making wage payments through Direct Benefit Transfer (DBT).
- The various forms of Aadhaar-based payments are:
  - **Aadhaar Payments Bridge System (APBS):**
    - The system facilitates recurring payments from the government to its customers for various subsidies and direct benefits.
    - Beneficiaries are identified using their Aadhaar numbers.
    - NPCI maintains an Aadhaar mapper that maps Aadhaar numbers to corresponding bank accounts.
    - Funds flow directly into the linked bank account.
  - **Aadhaar Enabled Payment (AEPS):**
    - Customers must visit a business correspondent (BC).
    - They need to provide their Aadhaar number and biometric data.
    - The BC shares this information with NPCI, which verifies the customer's identity with UIDAI.
    - NPCI also confirms the availability of funds in the connected account before approving the transaction.
  - **Aadhaar Pay:**
    - This method is designed for merchant payments.
    - Merchants must download their bank's merchant payments app.
    - They must authenticate customers using their biometric data and Aadhaar number.
    - Once authenticated, the merchant can initiate a transaction.
- For those who have not yet linked to the APBS due to technical difficulties or other reasons, the NACH system (transfer of wage payments through the bank account of the beneficiary) will continue to be available until 31st December 2023.
- Under the NACH system, it was observed that middlemen diverted wages by creating fake beneficiaries.
- According to National Payments Corporation of India (NPCI) data, APBS has a higher success rate of 99.55% or above, while account-based payments have a success rate of around 98%.
- Once Aadhaar is updated in the scheme database, beneficiaries do not need to update their account numbers, as money will be transferred to the account linked with their Aadhaar number.
- APBS helps genuine beneficiaries receive their due payment and reduces corruption by eliminating fake beneficiaries.
- Beneficiaries who come for work should be requested to provide their Aadhaar number, but work will not be denied if they don't have an Aadhaar number.
- Job cards cannot be deleted based solely on the reason that the worker is not eligible for APBS.
- Out of 14.33 crore active beneficiaries, Aadhaar has been seeded for 13.97 crore, and 13.34 crore Aadhaar have been authenticated, making 81.89% of active workers eligible for APBS.
- In July 2023, 88.51% of wage payments were made through APBS.

**Way Forward**

- India has promoted digital public infrastructure like Aadhaar as a means for service delivery in G-20 nations and beyond.
- The government should now seek an honest review of and course correction in the Aadhaar program before expanding its linkages further, including for electoral rolls, private entities, or MGNREGA payments.

***Nut Graf:*** *Moody's report highlights security and privacy risks associated with Aadhaar, particularly for vulnerable groups. It also questions Aadhaar's efficacy and potential for exclusion. An honest review and course correction of the Aadhaar before expanding its linkages further is the need of the hour.*

## 20. India's ageing population: UNFPA Report

**Syllabus:** GS 3- Economics

**Prelims:** United Nations Population Fund (UNFPA), India Ageing Report

**Rapidly Ageing Population**
- India's elderly population is growing at an estimated decadal rate of 41%.
- It is projected that by 2050, over 20% of India's population will be elderly.
- The UNFPA's 2023 India Ageing Report predicts that by 2046, the elderly population may exceed the population of children under 15.

**Economic Vulnerability**
- More than 40% of India's elderly population falls within the poorest wealth quintile.
- Approximately 18.7% of elderly individuals live without any income, which can negatively impact their quality of life and access to healthcare.

**Age Group Growth**
- The report anticipates a 279% growth in the population of those aged 80 and above between 2022 and 2050.
- This demographic includes a significant number of widowed and highly dependent elderly women, aligning with global trends.

**Gender Disparities**
- Women tend to have higher life expectancy at ages 60 and 80 compared to men, with variations across states.
- States like Himachal Pradesh and Kerala show a significant four-year life expectancy advantage for women at age 60.
- Higher life expectancy for women in certain states raises concerns about their social and economic well-being.

**Changing Sex Ratio Among Elderly**
- The sex ratio (number of females per 1,000 males) among the elderly has been steadily increasing since 1991, whereas the general population's ratio remains stagnant.
- In some regions like central India, women have surpassed men in survival after the age of 60.
- This indicates that women's longevity is increasing, especially in central India.

**Gendered Poverty in Old Age**
- Older women are more likely to be widowed, living alone, without income, and reliant on family support, contributing to the gendered aspect of poverty in old age.

**Regional Variations**
- There are significant variations in the elderly population's absolute levels and growth across different states.
- Southern and select northern states have a higher share of the elderly population than the national average.
- States with higher fertility rates, like Bihar and Uttar Pradesh, will see an increase in the elderly population but remain below the national average.

**Ageing Index and Dependency Ratios**
- Southern and western India have higher old-age dependency ratios, indicating a larger elderly population relative to the working-age population.
- Central and northeastern regions have younger demographics based on the ageing index.
- Union Territories and the northeastern region have lower old-age dependency ratios.

**Policy Implications**
- Policies need to be tailored to address the specific needs of the ageing population, especially the feminization and ruralization of this demographic.

## 21. Architect of India's Green Revolution departs

**Syllabus:** Indian Economy and issues related to agriculture, food security, and sustainable farming practices.

**Mains:** Green Revolution- Its characteristics, benefits and disadvantages.

**Prelims:** Green Revolution and M S Swaminathan

### Context
M.S. Swaminathan, the pioneering agricultural scientist behind India's Green Revolution, passed away at 98. His life, contributions, and legacy are commemorated below.

### Introduction
● M.S. Swaminathan, the renowned agricultural scientist, passed away in Chennai at the age of 98.
● He played a pivotal role in India's Green Revolution, a program that transformed agriculture.

### Career Highlights
● Joined the Central Rice Research Institute (CRRI) and Indian Agricultural Research Institute (IARI).
● Became Director of IARI in 1966, where he gained fame.
● Received the Padma Shri in 1967 and the Ramon Magsaysay award in 1971.
● Appointed Director-General of the Indian Council of Agricultural Research (ICAR) in 1972.
● Served as Principal Secretary, Union Ministry of Agriculture and Irrigation.
● Played a role in the International Rice Research Institute (IRRI) in the Philippines.
● For his contributions, he was awarded the first World Food Prize Laureate in 1987
● Established the M.S. Swaminathan Research Foundation (MSSRF) in India in 1988.
● Dr. Swaminathan served as a nominated member of the Rajya Sabha from 2007 until 2013.
● He received the inaugural World Agriculture Prize, established by the Indian Council of Food and Agriculture, in the year 2018.

### Contributions
● **Background:**
  ○ Consecutive severe droughts during the mid-1960s necessitated the political leadership and the scientific community to seek solutions to break free from the cycle of food scarcity.
  ○ At that time, India heavily relied on importing food grains from the United States, particularly PL480 wheat.
  ○ In 1966, another harsh drought year, India imported a staggering 10 million tonnes of PL480 wheat.
  ○ Dr. Swaminathan collaborated closely with two Agriculture Ministers, C. Subramaniam (1964-67) and Jagjivan Ram (1967-70 & 1974-77), in driving the success of the Green Revolution. This initiative marked a significant leap in wheat and rice production and productivity, achieved through the adoption of chemical-biological technology.
● **Green Revolution:**
  ○ The Green Revolution brought about a dramatic transformation in India's agriculture sector by providing high-yielding variety seeds, improved irrigation, and fertilisers to farmers in Punjab, Haryana, and western Uttar Pradesh primarily. Initially implemented for rice, it was later expanded to include wheat production.
  ○ In 1947, at the time of India's independence, the annual wheat production stood at approximately 6 million tonnes. However, by 1962, it had increased to about 10 million tonnes per year. Between 1964 and 1968, there was a remarkable surge in wheat production, reaching around 17 million tonnes annually. This substantial increase in production marked a revolutionary breakthrough.
  ○ Numerous researchers and scientists played crucial roles in this endeavour. Nevertheless, there is no doubt that the foundational strategic concept behind the Green Revolution in India, which involved introducing new genetic strains or 'plant types' responsive to increased fertiliser and water application, can be attributed to Swaminathan.
● **Evergreen Revolution:**
  ○ Faced criticism for some negative consequences of the Green Revolution, including ecological damage and issues for small farmers.
  ○ Swaminathan identified these concerns as far back as January 1968.
  ○ He voiced the potential risks associated with the swift replacement of diverse locally adapted crop varieties with just a few high-yielding strains over extensive regions.
  ○ He also cautioned against the intensive farming practices that neglected soil fertility conservation, warning that they could eventually result in the emergence of desert-like landscapes.
  ○ Furthermore, he raised alarms about the indiscriminate application of pesticides, fungicides, and herbicides, along with the unscientific extraction of groundwater. These prophetic warnings have undeniably materialised in

the present day.
  - ○ Swaminathan responded with the concept of the "evergreen revolution" to ensure sustainable agriculture.
- **Swaminathan** also led the National Commission on Farmers, known as the Swaminathan Commission.
  - ○ Recommended that minimum support price should be at least 50% more than production costs.

*Nut Graf: M.S. Swaminathan's demise marks the end of an era in Indian agriculture. His leadership in the Green Revolution and dedication to sustainable farming left an enduring impact on the nation.*

## 22. Current Account Deficit

**Syllabus:** GS 3- Economy

**Prelims:** Current Account Deficit

### India's Current Account Deficit (CAD) Widens in Q1 FY24
- India's CAD increased to $9.2 billion (1.1% of GDP) in the April-June quarter, up from $1.3 billion (0.2% of GDP) in the previous quarter.

### Factors Contributing to CAD Widening
- **Higher Trade Deficit:** The CAD widened primarily due to a higher trade deficit.
- **Decline in Net Services Receipts:** Net services receipts fell, mainly because of reduced exports of computer, travel, and business services, although they remained higher on a year-on-year basis.
- **Decrease in Private Transfer Receipts:** Private transfer receipts, including remittances from Indians working abroad, decreased to $27.1 billion from $28.6 billion in the previous quarter.

### Economic Concerns
- There are concerns over the fall in remittances, which, along with slowing global growth, could impact CAD.
- Rising oil prices are expected to put additional pressure on CAD.

### Income Account and Investment Highlights
- The net outgo on the income account, reflecting investment income payments, decreased to $10.6 billion from $12.6 billion in the previous quarter.
- Net foreign direct investment declined to $5.1 billion from $13.4 billion a year earlier.
- In the corresponding quarter of the previous year, there were outflows of $14.6 billion, whereas this year, there were inflows of $15.7 billion in net foreign portfolio investments.
- Net external commercial borrowings showed an inflow of $5.6 billion compared to an outflow of $2.9 billion in the previous year.

### Foreign Exchange Reserves and Future Projections
- India's foreign exchange reserves increased by $24.4 billion in the first quarter of the current fiscal year.
- ICRA Ltd. predicts that the CAD will widen further in Q2 FY24, estimating it to be between $19-21 billion (2.3% of GDP). They also project the CAD to reach $73-75 billion (2.1% of GDP) in FY24, considering an average crude oil price of $90 per barrel in H2.

## 23. Angel tax

**Syllabus:** GS 3- Economy

**Prelims:** Angel tax
● Angel tax is a tax on the capital raised by startups from external investors, often imposed when the investment amount exceeds the fair market value of the startup's shares.
● The government has relaxed angel tax rules for investments in startups by non-resident investors.
● There are now five different methods to value shares, with a 10% tolerance for deviations from accepted valuations.
● Rule 11UA under the Income Tax Act has been updated, bringing relief to foreign investors.
● These new methods offer flexibility for valuing companies, benefiting merchant bankers.
● Resident investors cannot use these five valuation methods.
● The changes address practical issues faced by Indian companies and investors.
● The amended rule provides clarity, reducing the likelihood of future disputes.

## 24. NABARD announces listing Social Bonds on BSE

**Syllabus:** GS 3- Economy

**Prelims:** Social Bonds
**Context:** The National Bank for Agriculture and Rural Development (NABARD) announced the listing of its 'Social Bonds' on the BSE.

**Details:**
● The bank had raised ₹1,040 crore through this offering. The funds would be used to refinance the Jal Jeevan Mission (the Union government's drinking water project) in Telangana.
● Issued to fund projects and initiatives that have a positive social or environmental impact.
● Governments, public entities, development organizations, and private corporations can issue social bonds.
● A key feature of social bonds is the requirement for issuers to measure and report on the social or environmental outcomes of the projects funded.

**Types of Social Bonds:**
● **Green Bonds:** These bonds are specifically earmarked for environmentally friendly projects, such as renewable energy or conservation efforts.
● **Social Impact Bonds:** These bonds are often used for social welfare programs, where investors are repaid based on the achievement of predefined social outcomes.
● **Sustainability Bonds:** These bonds cover a broader range of projects that have both social and environmental benefits.
● One of the earliest examples of a bond issued with a clear social mission was the "World Bank's Kangaroo Bond" issued in 1989.
● **India's 1st Social Impact Bond:** brought about by an MoU between Pimpri Chinchwad Municipal Corporation (PCMC) and United Nations Development Programme (UNDP).
● **NABARD:** India's first externally rated (AAA-) rupee denominated bond.

# INTERNATIONAL RELATIONS

## 1. G20 clinches New Delhi Declaration

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

**Prelims:** African Union joins G-20, Global Biofuels Alliance, G-20 Satellite Mission for Environment and Climate Observation, G-20 Deccan High-Level Principles on Food Security and Nutrition 2023.

**Mains:** Diplomatic Victory for India at G-20, Outcomes of Finance and Environment track at G-20

**Context:** The key outcomes of the G-20 summit in New Delhi are:

- **Ukraine Conflict:**
  - G-20 members agreed to a joint statement on the Ukraine war, diluting the harsh criticism of Russia contained in last year's statement.
  - The final document refers to different "national positions" of the G-20 members on the war, with a generic reference to the need for all states to refrain from the threat or use of force.This was a major diplomatic victory for India, which had been under pressure from the West to take a tougher stance against Russia.
  - The agreement was reached after tough negotiations led by Indonesia, India, Brazil and South Africa. These countries were also part of the Non Aligned Movement and hence have a history of working together.
  - The EU and G-7 countries agreed to the text in order to avoid a "no text" scenario, which would have led to comparisons to the recent BRICS Summit and concerns that the G-20 might be replaced by blocs such as the BRICS or G-7 .
- **Inclusion of African Union:**
  - G-20 also decided to include the 55-nation African Union, the second regional bloc to join the group after the European Union. This will boost the representation of developing countries in the G-20.
- **Finance:**
  - The declaration also includes agreements on strengthening multilateral development banks (MDBs), regulating cryptocurrencies, and using digital public infrastructure for financial inclusion.
  - Endorsement of the Financial Stability Board's recommendations for the regulation, supervision, and oversight of crypto-assets activities and markets.
  - Agreement on the need for "better, bigger, and more effective" multilateral development banks to meet high developmental demands from around the world
  - Implementation of recommendations of an independent panel on the capital adequacy framework of the MDBs, potentially yielding additional lending capacity of approximately $200 billion over the next decade.
- **Climate change:**
  - The declaration calls for a "quantum jump" in climate financing from billions of dollars to trillions of dollars.
  - The statement suggests that developing countries will require approximately $5.9 trillion in investments between now and 2030, while an additional $4 trillion per year is needed for clean energy technologies by 2030 to achieve net-zero emissions by 2050.
  - India launched the **Global Biofuels Alliance** on Saturday and the Prime Minister urged G-20 nations to join the initiative and increase ethanol blending in petrol to 20% globally.
  - The alliance aims to secure the supply of biofuels, ensure they are affordable, and promote sustainable production.
  - Besides India, the founding members of the alliance include Argentina, Bangladesh, Brazil, Italy, Mauritius, South Africa, the UAE, and the US. Canada and Singapore are observer countries.
  - The Prime Minister thanked the member nations who joined the alliance and emphasized the importance of international cooperation in the field of fuel blending to address climate change.
  - India also proposed the launch of the **G-20 Satellite Mission for Environment and Climate Observation**. The climate and weather data obtained from this will be shared with all the countries, especially the countries of the Global South.
  - The PM highlighted the need for an inclusive energy transition and stressed that trillions of dollars are required to achieve it, with developed countries playing a critical role. He also acknowledged the willingness of developed countries to fulfill their commitment of $100 billion for climate finance.
  - At the 2009 Copenhagen UN climate talks, developed countries agreed to provide $100 billion annually by 2020 to help developing countries address climate change. However, they have consistently failed to meet this commitment.

**Global Biofuels Alliance**

● GBA is an India-led initiative that aims to develop an alliance of governments, international organizations, and industry to promote the adoption of biofuels.

● India's existing biofuels programs such as PM-JI-VAN Yojana, SATAT, and GOBARdhan scheme.

● As per IEA, there will be 3.5-5x biofuels growth potential by 2050 due to Net Zero targets, making this a huge opportunity for India.

● 9 initiating members of GBA: India, the US, Brazil, Argentina, Bangladesh, Italy, Mauritius, South Africa, and the UAE.

● GBA Members constitute major producers and consumers of biofuels. USA (52%), Brazil (30%) and India (3%), contribute about 85% share in production and about 81% in consumption of ethanol.

● G20 Invited Countries supporting GBA: Bangladesh, Singapore, Mauritius, UAE

● Non-G20 supporting GBA: Iceland, Kenya, Guyana, Paraguay, Seychelles, Sri Lanka, Uganda, and Finland

● International Organizations: World Bank, Asian Development Bank, World Economic Forum, World LPG Organization, UN-Energy for All, UNIDO, Biofutures Platform, International Civil Aviation Organization, International Energy Agency, International Energy Forum, International Renewable Energy Agency, World Biogas Association.



**G20**

● 18th G20 Summit - September 9th and 10th, 2023.

● Theme - "Vasudhaiva Kutumbakam", which means "The world is one family".

● G20 Leaders' New Delhi Declaration achieved unanimous consensus, addressing diverse global issues, from Russia-Ukraine tensions to sustainable development, food security, and launching the Global Biofuel Alliance.

● Founded on September 26, 1999

● Initial goal: forum for the Finance Ministers and Central Bank Governors

● 2008: Elevation to the level of heads of state. "Premier forum for international economic cooperation".

● Members: Argentina, Brazil; USA, Canada, Mexico; France, Germany, Italy, Russia, Turkey, UK, EU; South Africa, AU; China, India, Indonesia, Japan, ROK, Saudi Arabia; Australia.

● Consists of 2 tracks: Finance track and Sherpa track.

● In addition, there are Engagement Groups which bring together civil societies, parliamentarians, think tanks, women, youth, labour, businesses and researchers of the G20 countries.

● No Permanent secretariat. The Presidency is supported by the Troika – previous, current and incoming Presidency.

● Next Troika: India, Brazil and South Africa

**India – Middle East – Europe mega economic corridor**
- A Memorandum of Understanding (MoU) was signed between the Governments of India, the US, Saudi Arabia, the European Union, the UAE, France, Germany and Italy to establish the IMEC.
- IMEC is part of a broader initiative called the Partnership for Global Infrastructure Investment (PGII).
- The PGII was initially introduced during the G7 summit in the UK in June 2021.
- The project aims to establish a network of transport corridors, including railways and sea lanes.
- IMEC is seen as a response to China's Belt and Road Initiative (BRI), providing an alternative infrastructure network.
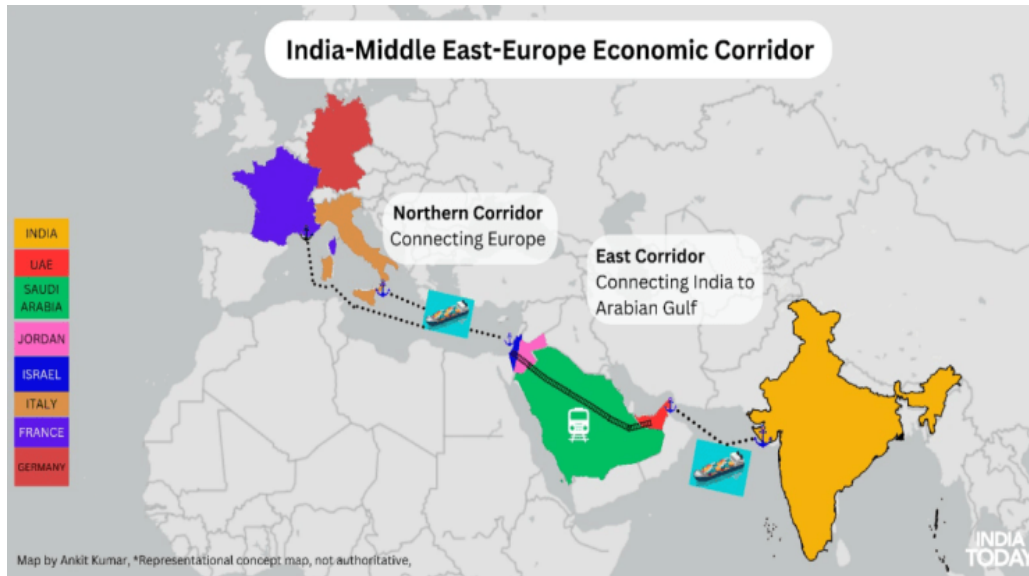


Source: India today

**G20 document prepared by World Bank lauds India's progress**
- The document emphasizes on
- Rapid Financial Inclusion: Jan Dhan-Aadhar-Mobile (JAM) Trinity that boosted the financial inclusion rate from 25% in 2008 to over 80% within 6 years.
- Pradhan Mantri Jan Dhan Yojna (PMJDY) Success: PMJDY accounts tripled from 147.2 million (March 2015) to 462 million (June 2022). Women own 56% of these accounts, exceeding 260 million.
- Government to Person (G2P) Payments: India's digital G2P architecture facilitated USD 361 billion transfers to beneficiaries from 53 ministries via 312 schemes. Achieved total savings of USD 33 billion by March 2022, equivalent to 1.14% of GDP.
- Unified Payments Interface (UPI) Dominance: May 2023 witnessed over 9.41 billion UPI transactions, valued at Rs 14.89 trillion. UPI transactions in FY 2022–23 neared 50% of India's nominal GDP.

**G20 agrees to pursue tripling renewables capacity but stop short of major goals**
- G20 countries promised to work towards tripling the global renewable energy capacity by 2030.
- If met, this single step could avoid carbon dioxide emissions by seven billion tonnes between now and 2030, according to an assessment by the International Energy Agency (IEA).
- Aligns with global efforts to limit global warming to 1.5 degrees Celsius.
- Represents a significant shift away from fossil fuels towards cleaner energy alternatives.
- The declaration acknowledges that current climate action is insufficient and highlights the need for trillions of dollars in financial resources to achieve the objectives of the Paris Agreement.
- Expanding renewable energy capacity on this scale could avoid about 7 billion tonnes of $CO_2$ emissions between 2023 and 2030.

**G20 leaders commit to boost global food security, eliminate hunger**
- G20 leaders called for the full, timely implementation of the Black Sea grain initiative.
- The agriculture working group during the G20 Presidency reached a historic consensus on two aspects: Deccan G20 High-level principles on Food Security and Nutrition and the Millet initiative called MAHARISHI.
- The seven principles under the high-level principles on food security and nutrition include humanitarian assistance, increasing food production and food security net programs, climate-smart approaches, inclusivity of agriculture food systems, one health approach, digitalization of the agriculture sector, and scaling responsible public and private investment in agriculture.
- MAHARISHI (Millets And OtHer Ancient Grains International ReSearcH Initiative) aims at advancing research collaborations and generating awareness about millets and other ancient grains during International Years of Millets 2023 and after.

**PM Modi Proposes Virtual G-20 Meeting in November**
- Indian Prime Minister Narendra Modi suggests a virtual G-20 meeting towards the end of November.
- The proposal aims to review progress made on the suggestions and proposals presented during the September 9-10 summit.
- PM Modi formally passed the ceremonial gavel to Brazil's President Luiz Inacio Lula Da Silva, symbolising the transfer of G-20 Presidency to Brazil.
- The Delhi summit saw the admission of the African Union as a new G-20 member.
- PM Modi announced a "Joint Declaration" of the summit adopted through consensus, addressing differences among members concerning the Ukraine crisis.
- Following the summit's conclusion, PM Modi held meetings with various world leaders, including German Chancellor Olaf Scholz, President Lula Da Silva, President of the European Commission Ursula von der Leyen, Turkish President Recep Tayyip Erdogan, and South Korean President Yoon Suk Yeol.

**Russia Praises New Delhi Declaration at G-20 Summit**
- Russia's Foreign Minister Sergey Lavrov hails the New Delhi Declaration as a "milestone" for the G-20 process.
- Lavrov commends India for preventing the Ukraine conflict from dominating the summit's agenda.
- He denies any disruption in military and technical supplies to India due to the Ukraine conflict, including the S-400 missile systems delivery.
- Lavrov highlights India's promise to provide new avenues of investment to utilize trade surpluses.
- Russia considers the summit's outcome a diplomatic win, with no direct mention of Russia in the summit statement.
- The declaration emphasizes the need to settle conflicts in accordance with the UN Charter.
- The New Delhi Declaration mentions Russia only in the context of reviving the Black Sea Grain Initiative.
- Lavrov praises the compromise achieved by Western countries and credits India for uniting the Global South.
- The development of a payment mechanism to bypass sanctions on Russian trade is a bilateral issue between India and Russia.
- Lavrov confirms that India-Russia military and technical ties remain unaffected, including the S-400 Triumf missile systems deal.

**Japan Seeks Deeper Defense Cooperation with India in Indo-Pacific**
- Japan views India as an "indispensable" partner in the Indo-Pacific region.
- Prime Minister Fumio Kishida emphasises the importance of developing deeper defence cooperation with India to ensure maritime security.
- Both countries have conducted joint exercises involving land, sea, and air forces this year.
- Japan's Free and Open Indo-Pacific (FOIP) strategy aims to uphold a free and open international order based on the rule of law in the Indo-Pacific.
- Japan opposes unilateral changes to the status quo in the East and South China Seas and condemns North Korea's missile activities.
- The G-20 New Delhi Declaration was defended by Mr. Kishida as a meaningful achievement despite the absence of a reference to Russia's aggression against Ukraine.
- He acknowledges the challenges posed by Russia's actions but highlights the importance of global cooperation and support for a just and durable peace in Ukraine.

**India Delays Crypto Regulation Amid G-20 Coordination**
- G-20 countries agree to explore a coordinated regulatory framework for crypto assets.
- India considers delaying domestic crypto regulations and seeks dialogue with stakeholders.
- An outright ban on cryptocurrencies, previously considered, is likely off the table.
- India aims for global consensus on crypto regulation instead of monitoring every internet device.
- G-20 leaders endorse Financial Stability Board (FSB) recommendations for crypto asset regulation.
- FSB and IMF provide a roadmap for coordinated global crypto regulation.
- G-20 Finance Ministers and Central Bank Governors will discuss the roadmap in Marrakesh next month.
- Emphasis on consistent global regulation to prevent trade shifting to other jurisdictions.
- IMF Managing Director Kristalina Georgieva acknowledges more work is needed in the digital money and crypto asset realm.

*Nut Graf: G20 summit was a diplomatic victory for India, which was able to secure a number of important outcomes. The agreements reached on the Ukraine war, climate change, and financial inclusion have been welcomed by many countries, and they could help to shape the global agenda in the years to come.*

## 2. G20 diplomacy and a shifting world order

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

**Prelims:** G20 Summit in India, BRICS, NATO, Non-Alignment, Bali Declaration

**Mains:** Changing World Order and Impact on India, Emergence of two blocs in global politics, Threats to India's Strategic Autonomy

### Context
The G-20 summit has highlighted the changing dynamics of international politics and the declining space for non-alignment in the current geopolitical landscape.

### India and G-20
- India achieved diplomatic success at the G-20 meeting in Delhi.
- Despite challenges, the New Delhi Declaration secured a consensus declaration on nearly 100 issues.
- It addressed various topics, including terrorism, climate change, renewable energy, sustainable development, and multilateral development banks.
- Initiatives like digital public infrastructure and Unified Payments Interface were also highlighted.
- The declaration emphasized compromise over conflict and supported Prime Minister Narendra Modi's vision of "One Earth, One Family, One Future."
- The agreement on the Ukraine conflict was also reached when the West agreed to refrain from blaming Russia and accepted a resolution rather than condemning it.
- This contrasts with the Bali Declaration of November 2022, which condemned Russia for its actions in Ukraine. Russia and China strongly criticized the Bali declaration.
- The outcomes of the G-20 meeting reflected the aspirations of the larger global community.
- As the host country, India can take credit for the successful outcome.

### Is China's perception of multilateralism changing?
- China has welcomed the Delhi Declaration, but feels the G-20 is being used as geopolitical and security tools.
- It also warned against the India-Middle East-Europe Economic Corridor Plan due to concerns of being used as a political tool.
- Others have expressed scepticism about the effectiveness of the G-20 in addressing global issues.
- The world is currently facing a period of multiple crises including geopolitical competition, inflation, ongoing conflicts and climate change.
- The West's acknowledgement of India's growing economic strength and India's membership in the Quad (a group seen as a key player in containing China) require India to exercise caution.
- India should avoid being caught in the crossfire of the growing tensions between the West and China.

### Emergence of two blocs:
- The role of the G-20 has shifted in recent years, with a greater focus on global political conflicts rather than economic issues.
- The world faces emerging disorder, the return of two antagonistic blocs, and shrinking space for non-aligned countries.
- Analysts suggest two opposing blocs, led by the West and China-Russia, are competing to change the balance of power.
- The US is strengthening and expanding NATO to counter "Russian expansionism" and non-NATO allies are being convinced to join a US-led alliance to counter authoritarianism represented by Russia and China.
- Russia and China are deepening their strategic alignment, with countries like North Korea cementing relationships with this bloc.
- China is challenging US naval power in the Pacific Ocean, while Russia is seeking to expand its footprint in Africa.

### Is the space for non-alignment shrinking?
- The current geopolitical landscape is making it difficult for countries to maintain their non-alignment status. For example, forums like BRICS (Brazil, Russia, India, China, and South Africa) are finding it challenging to stay neutral.
- Rival camps with different visions for the international order are becoming more prominent and security agreements between nations within a bloc have limited the space for non-alignment.
- The G-20 summit in New Delhi and mentions of the Global South's significance might not change this reality and global powers may still treat other countries as pawns in international politics, without much say in shaping the future.

*Nut Graf:* The G-20 summit in Delhi has highlighted the growing geopolitical tensions between the West and China, with the world increasingly divided into two blocs. This is shrinking the space for non-alignment and making it difficult for countries to maintain their strategic autonomy. India, as a rising power, needs to exercise caution to avoid being caught in the crossfire.

## 3. African Union to join G-20, as Sherpas reach a deal

**Syllabus:** GS 2- International Relations

**Prelims:** African Union and G20

### African Union to Join G-20
- Negotiators at the Sherpa meeting near Delhi have agreed to the African Union's (AU) membership in the G-20, making it the 55th member.
- The AU will join the European Union as the only two regional bodies in the G-20.
- The official renaming of the G-20 as the "G-21" is yet to be confirmed, but Indian officials see this development as a lasting impact of India's efforts during its G-20 Presidency.

### Ongoing Negotiations
- Sherpas, representing G-20 leaders, will continue discussions at the Delhi G-20 venue until a draft declaration is agreed upon.
- No G-20 summit has ended without a joint statement, and Indian officials aim to bridge gaps in the draft by the summit's conclusion on Sunday.

### Key Challenges
- The primary challenge is resolving the "geopolitical issue" paragraph in the draft, particularly concerning United Nations General Assembly resolutions condemning Russia's invasion of Ukraine.
- Disagreements persist in areas like climate financing, debt restructuring, fossil fuel phase-out deadlines, and carbon emission reductions.
- Tensions between Indian and Chinese delegates have led to confrontations and debates over proposed initiatives and wording.

### China and Russia's Support for AU Membership
- Chinese Foreign Ministry spokesperson Mao Ning expressed China's early support for the AU's G-20 membership.
- China views the AU as an important partner in strengthening global governance and international fairness.
- Russia's G-20 Sherpa also noted Moscow's early support for the AU's membership.

### Continued Negotiations
- While significant progress has been made, differences persist in various areas, necessitating ongoing negotiations.

## 4. India – Middle East – EU corridor

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

**Mains:** Significance of India – Middle East – EU corridor

**Prelims:** India – Middle East – EU corridor

**Context:** Recently India, the U.S, Saudi Arabia, the UAE and other countries launched the India-Middle East-Europe Economic Corridor (IMEC). However many experts informed many of the details are still being ironed out, and multiple route options are being considered that will include ports such as the one at Haifa in Israel and Piraeus in Greece.
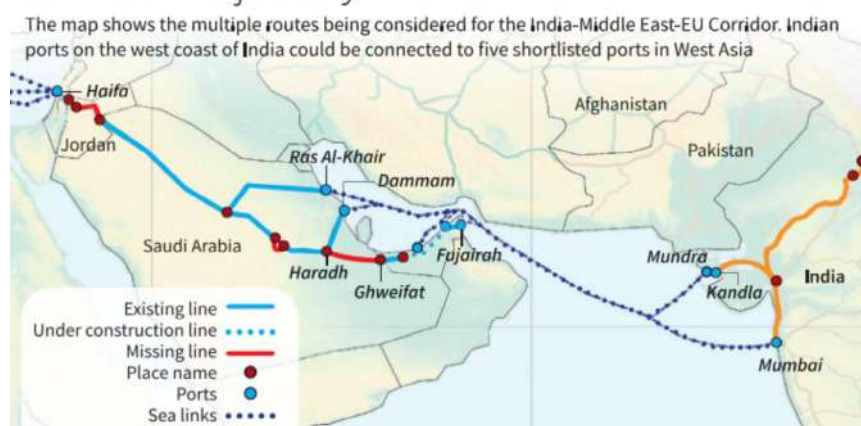
**Details:**
- The IMEC MoU was signed by India, the U.S., Saudi Arabia, the UAE, the European Union, Italy, France and Germany, in the presence of all their leaders.
- Other than the co chairs – India and US, signatories include Saudi Arabia, the UAE, the European Union, Greece, Italy, France and Germany.

**The proposed route**
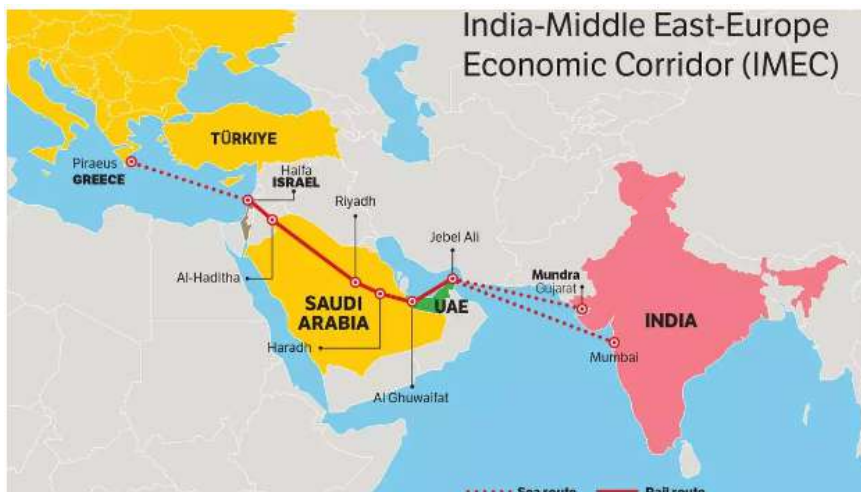


**Source: Frontline the hindu**



**Source: The hindu**

**Opportunities**

- The all-sea route is **convenient** because Indian cargo will land from point to point. It moves seamlessly without any obstructions.
- The IMEC has been proposed to **counter the Belt and Road Initiative of China.**
- **Open up a new dimension in trade and transportation for the region** – West Asia, especially Saudi Arabia, has a huge role in IMEC where a railway corridor is being proposed to be built.
- **Increased transit efficiency – 40% faster movement**
- **Reduced costs-** The route will reduce the transportation cost.
- **Reduced level of emissions**
- **Generation of Jobs**
- **Integration of Asia, Europe and the Middle East**
- **Infrastructure development –** Electricity, Digital Connectivity
- **Pipeline for Hydrogen supply**

**Hurdles and challenges**

- **Handling costs-** In the proposed IMEC, the number of times the cargo will get offloaded as it changes hands from ship to rail will increase the handling costs which include terminal-handling charges, container yard charges etc.
- **Very complex programme** and will require everything to be brought to common standards. Example- trains should run on the same gauge, similar technologies for engines should be used, dimensions of containers should be similar.
- **Large missing links still to be constructed-** There is a missing link between Ghweifat and Haradh, which will need to be constructed.
- **Standardization of the transportation medium will be needed.**
- **Egypt could raise objections to the plan** because it will lose revenue if the Suez Canal is bypassed.
- **Impact on Ties between Israel and Gulf states**.
- **Chinese presence cannot be wished away along the IMEC route-** because the Piraeus port is controlled by China Ocean Shipping (Group) Company which is a Chinese state-owned company.

**Nut Graf:** *The India-Middle East-EU corridor will have multiple routes and provide great opportunities, but multiple challenges remain.*

## 5. Launch of West Asia economic corridor is a historic step: PM

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

**Mains:** India- Saudi Arabia bilateral relations

**Prelims:** About the West Asia economic corridor

### Context
Prime Minister Shri Narendra Modi described Saudi Arabia as a vital strategic partner during Crown Prince Mohammed Bin Salman's visit.

### India's Strong Ties with Saudi Arabia
- Both nations established a joint task force to expedite the West Coast refinery project, emphasising the importance of their partnership as rapidly growing countries.

### Economic Corridor Connects India, West Asia, and Europe
- PM Modi highlighted the recent launch of the India-Middle East Europe Economic Corridor, bridging India, West Asia, and Europe.
- The economic corridor aims to boost economic growth, enhance the energy sector, and promote digitization in the region.
- India expressed gratitude for Saudi Arabia's initiatives to safeguard the welfare of Indian expatriates.

### First Meeting of India-Saudi Strategic Partnership Council (SPC)
- PM Modi and Crown Prince Bin Salman jointly chaired the inaugural meeting of the India-Saudi Arabia Strategic Partnership Council (SPC).
- The visit holds significance following Saudi Arabia's reconciliation with Iran and its recent membership in the BRICS group.
- Discussions encompassed various areas, including defence, energy, security, education, technology, transportation, healthcare, tourism, culture, space, and semiconductors as potential avenues for cooperation.

### Enhanced Energy Ties and Investment
- Both countries lent full support for the West Coast refinery project, a trilateral initiative involving ARAMCO, ADNOC, and an Indian company, with $50 billion already allocated.
- A joint task force is established to facilitate the $100 billion investment promised by Saudi Arabia, half of which is designated for the refinery.
- Delhi and Riyadh plan to elevate their energy relations to a "comprehensive energy partnership."

### Agreements and Cooperation
- Eight agreements were signed, including ones between the Central Vigilance Commission of India and the Saudi Oversight and Anti-Corruption Authority, as well as between the Indian and Saudi Exim Banks.
- The National Institute of Technology of India and the Saline Water Conversion Corporation of Saudi Arabia also inked an agreement.
- Prince Bin Salman met President Droupadi Murmu and attended a banquet dinner hosted in his honour.
- Saudi Arabia committed to being a dependable partner and crude oil supplier to India.

### Expanding Private Sector and Strengthening Defence
- The joint statement emphasises the expansion of the private sector in both nations, encouraging investment partnerships in agriculture and food industries.
- Cooperation in defence and anti-terrorism efforts was highlighted, with a focus on preventing access to missiles and drones for terrorist purposes.
- Saudi Arabia and India discussed plans to bolster tourism relations, reflecting Saudi Arabia's ongoing reforms.

**Nut Graf:** *Indian PM Modi and Crown Prince Bin Salman strengthen ties during the state visit, focusing on the West Coast refinery project and diverse cooperation areas, emphasising Saudi Arabia's role as a strategic partner.*

## 6. What is driving the Global Biofuel Alliance

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

**Mains:** Global Biofuel Alliance importance and challenges

**Prelims:** Global Biofuel Alliance

**Context:** Questions are being raised on what type of biofuel is the alliance going to concentrate on and why are countries trying to find alternatives. While opinion is divided on this, some experts say 2G ethanol will allow the reduction of greenhouse gas emissions even while stretching the life of internal combustion engines, giving time for automakers to develop robust alternatives

**Background:**
● On the sidelines of the annual G-20 summit in New Delhi, an India-led grouping came together to give impetus to the production and use of biofuels, an alternative to fossil fuels like petroleum and diesel.
● The grouping, called the Global Biofuels Alliance (GBA) would attempt to bring countries together to co-develop, accelerate technological advances in production processes, and advocate for the use of biofuels particularly in the transport sector.

**Global Biofuels Alliance (GBA)**
● Three founding members – India, the U.S, Brazil
● Other supporting countries – Argentina, Canada, Italy and South Africa (G20)
● G20 Invitees – Bangladesh, Singapore, Mauritius, UAE
● Non G 20 nations – Iceland, Kenya, Guyana, Paraguay, Seychelles, Sri Lanka, Uganda and Finland

**What are Biofuels?**
● As per **International Energy Agency** – Liquid fuels derived from biomass and used as an alternative to fossil fuel based liquid transportation fuels like gasoline, diesel and aviation fuel.
● **1st generation biofuel** – Crops such as Sugarcane, Corn, Soybean etc
● **2nd generation biofuel** – Agricultural waste, used cooking oil, processed animal residues

**Need for the Alliance**
● Increased price shocks for fossil fuels.
● Increased carbon emissions.
● Need for alternatives for long haul transport, aviation etc.
● Alternate modes of energy are still in formative stages.
● Increase in farm income.
● Creation of Jobs.

**Benefits for India**
● Will strengthen India's position globally.
● Will provide additional opportunities to Indian industries.
● It will help accelerate India's existing biofuels programs such as PM-JIVANYojna, SATAT, and GOBARdhan scheme.
● The global ethanol market was valued at USD 99.06 billion in 2022 and is predicted to grow at a CAGR of 5.1% by 2032 and surpass USD 162.12 billion by 2032.

**Moving ahead**
● USA (52%), Brazil (30%) and India (3%), contribute about 85% share in production and about 81% in consumption of ethanol.
● It is in line with meeting net zero targets.

***Nut Graf:*** *The IEA predicts that about two-thirds of the global biofuel demand will come from three emerging economies India, Brazil and Indonesia, and that they have ample domestic feedstocks, additional production capacity, relatively low production costs and a package of policies they can leverage to increase demand. However, it remains to be seen if this would indeed hasten decarbonising of the energy sector.*

**7. The implications of the expansion of BRICS**

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

**Mains:** Implications of the expansion of BRICS

**Background**
- The 15th BRICS summit recently stated that the five-member organization has welcomed six new members: Argentina from Latin America, Egypt and Ethiopia from Africa, Iran, Saudi Arabia and the United Arab Emirates (UAE) from West Asia.
- According to a study, 22 nations have formally applied for membership in the BRICS, out of the 40 nations that have expressed interest.

**Details:**
- Full membership will take effect on January 1, 2024.
- The original BRIC members had two things in common: large economies, and high potential growth rates. The expanded BRICS-11 is a less coherent group; some are going through crises, and others are thriving. This could signal an expansion of the agenda beyond economics.

**About BRICS**
- In 2001, the British Economist Jim O'Neill coined the term BRIC to describe the four emerging economies of Brazil, Russia, India, and China. The grouping was formalized during the first meeting of BRIC Foreign Ministers in 2006. South Africa was invited to join BRIC in December 2010, after which the group adopted the acronym BRICS.
- Share of BRICS: The BRICS brings together five of the largest developing countries of the world, representing 41% of the global population, 24% of the global GDP and 16 % of the global trade.

**Initiatives of BRICS**
- **New Development Bank:** During the Sixth BRICS Summit in Fortaleza (Brazil) in 2014, the leaders signed the Agreement establishing the New Development Bank (NDB - Shanghai, China). It has so far approved 70 infrastructure and sustainable development projects worth.
- **Contingent Reserve Arrangement**: In 2014, the BRICS governments had signed a treaty on the setting up of the contingent reserve arrangement. The arrangement is aimed at forestalling short-term balance of payments pressures, providing mutual support and strengthening the financial stability of the BRICS nations.
- The CRS's total lending capacity is $100 billion.

| Country | Capital contribution (Billion USD) | Access to Funds (Billion USD) | Voting Rights (%) |
|---------|-----------------------------------|-------------------------------|-------------------|
| China | 41 | 21 | 39.95 |
| Brazil | 18 | 18 | 18.10 |
| India | 18 | 18 | 18.10 |
| Russia | 18 | 18 | 18.10 |
| South Africa | 5 | 10 | 5.75 |

- **Launch of Remote Sensing Satellite:** In August 2021, the five space agencies signed an agreement on the Cooperation on BRICS Remote Sensing Satellite Constellation. The constellation is made up of six existing satellites: Gaofen-6 and Ziyuan III 02, both developed by China, CBERS-4, jointly developed by Brazil and China, Kanopus-V type, developed by Russia, and Resourcesat-2 and 2A, both developed by India.
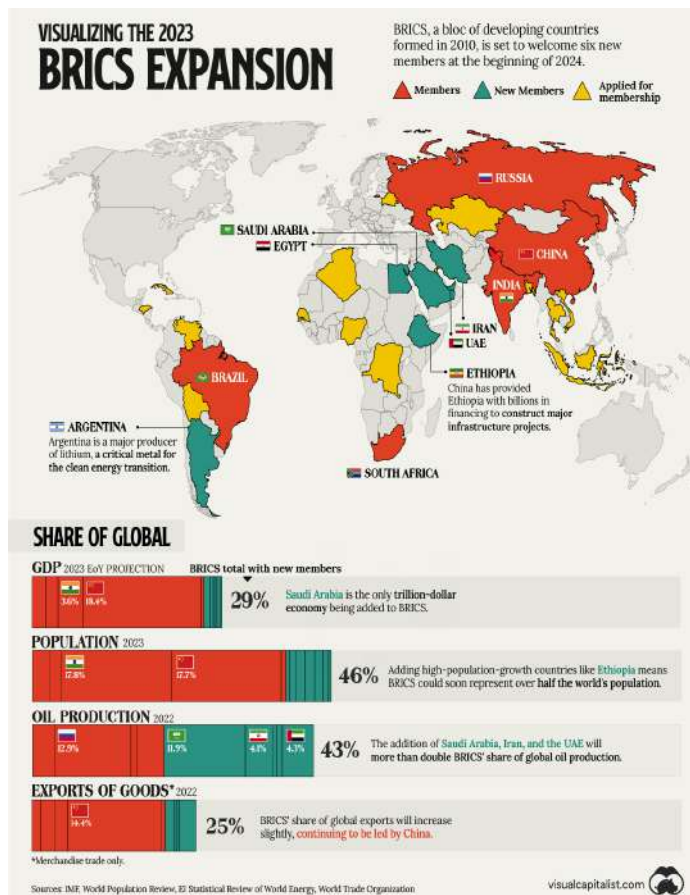
Source: IMF World Population Review, EI Statistical Review of World Energy

**Growing Significance of BRICS**
- The BRICs have given birth to two key institutions: the New Development Bank (NBD) and the Contingent Reserve Arrangement, which assist nations experiencing short-term balance-of-payments challenges.
- Members of the BRICS have all expressed discontent with Western-dominated international organizations including the World Bank, the UN, and more lately, the World Trade Organisation.
- The BRICS nations oppose the West-led global order, encourage economic and political cooperation among themselves, and create institutions that are independent of the West.
- To take into account the existence and interests of rising economies, it vigorously advocates for comprehensive changes.
- The Johannesburg Declaration clearly states that the strategic cooperation of the members would be focused on building a more equitable and representative international order.

**Arguments in favour of BRICS Expansion**
- The rapid growth in the number of BRICS members has created a grouping with similar global perspectives and goals, and their combined economic might gives the expanded conclave significant economic influence.
- 23% of world exports and 19% of global imports are accounted for by the five core members; with the addition of the additional members, these percentages will increase by 3.7% and 3%, respectively.
- The energy sector will be the most affected; in 2022, the first five BRICS members accounted for 20% of world oil production, which will now account for 42% of global output.

**Addition of Geo-Strategic value**
- The BRICS will benefit greatly from the addition of the new members from a geostrategic perspective.
- West Asians are already strongly connected to BRICS participants. Russia, which already supplies a significant amount of oil to China and India, is now considering Brazil as a market. Iran has expanded its oil output heading to China despite US sanctions.
- While Argentina is the second biggest economy in Latin America, Egypt and Ethiopia are significant players in the strategically significant Horn of Africa and the Red Sea.
- The new BRICS members readily fit into this political and economic structure, especially those from West Asia.
- Additionally, the UAE has improved relations with Iran and is concentrating on enlarging its marine presence throughout the Red Sea, the Gulf of Aden, the Gulf of Mexico, and the Horn of Africa.

**Way Forward**

India and other BRICS members insist on asserting their strategic autonomy in a multipolar world order, with member nations demanding that their voices be heard and their interests respected, while Western writers continue to focus on the emerging global binary divide and the "new Cold War." Therefore, it is not unexpected that the Johannesburg summit was referred to as a turning moment in contemporary history in a recent media article.

***Nut Graf:*** *The BRICS bloc has grown to include six additional member states, but this growth could complicate existing disagreements within it and lessen the group's capacity to act decisively as a whole.*

## 8. ASEAN

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

**Mains:** ASEAN and various challenges faced by it.

**Prelims:** About ASEAN

**Context**

Southeast Asian leaders have decided that Myanmar will not assume the chairmanship of their regional bloc ASEAN in 2026, following international condemnation of the military junta's takeover in 2021.

**India – ASEAN Summit**

- PM Modi's 12 point proposal
- Multi-modal connectivity
- Digital infrastructure sharing
- Collective fight against threats
- Multilateral engagement
- Maritime cooperation
- Food security
- ASEAN-India digital fund
- Support for research institute
- Traditional medicine center
- Affordable medicines
- Disaster resilience
- Mission LiFe

**Summit's highlights**

- PM Modi underscored the significance of ASEAN by emphasizing ASEAN's Centrality. He reaffirmed the central role of ASEAN in the Indo-Pacific region, recognizing its pivotal position in regional affairs.
- It was reiterated that ASEAN stands as a central pillar of India's Act East Policy, highlighting the importance of India's engagement with ASEAN nations.
- It was pointed out that the alignment and synergies between India's Indo-Pacific Ocean's Initiative (IPOI) and ASEAN's Outlook on the Indo-Pacific (AOIP), indicate a shared vision for regional stability and growth.
- Theme of ASEAN Summit: PM Modi acknowledged that the theme of this year's ASEAN Summit, 'ASEAN Matters: Epicentrum of Growth,' underscores the significance of ASEAN's role as a focal point for economic development and regional progress.

**ASEAN's Decision on Myanmar's Chairmanship**

- Southeast Asian leaders have decided that Myanmar will not assume the rotating leadership of their regional bloc in 2026.
- Western governments, led by the U.S., have condemned Myanmar's military junta for seizing power in 2021 and have called for the release of detained officials, including Aung San Suu Kyi.

**Philippines to Assume ASEAN Chairmanship**

- The Philippines has agreed to take over the chairmanship of the regional bloc in 2026, according to President Ferdinand Marcos Jr.
- The reasons behind Myanmar losing its chairmanship were not explained, but it is believed to be related to ongoing civil strife and concerns about relations with non-recognizing countries like the U.S. and the EU.

**Challenges in Southeast Asia**
- Continuing civil strife in Myanmar and territorial disputes in the South China Sea were key topics in ASEAN's discussions.
- Divisions within ASEAN, including the U.S.-China rivalry, have created challenges for the regional bloc.

**Call for Unity and Stability**
- Indonesian President Joko Widodo emphasized the importance of unity within ASEAN to address regional and global challenges.
- He likened ASEAN to a ship that must navigate challenges and ensure peace, stability, and shared prosperity.

**Exclusion of Myanmar's Generals**
- Myanmar's top Generals and their officials were not allowed to attend the summit due to their failure to comply with a domestic peace plan crafted by ASEAN leaders in 2021.
- Indonesian Foreign Minister Retno Marsudi confirmed ASEAN's commitment to the plan.

**Human Rights Concerns**
- Myanmar's security forces have been implicated in the killing of approximately 4,000 civilians and the arrest of over 24,000 others since the military takeover.

**Upcoming Meetings with International Leaders**
- ASEAN leaders will meet with Asian and Western counterparts, including U.S. Vice President Kamala Harris, Chinese Premier Li Qiang, and Russian Foreign Minister Sergey Lavrov.
- Japanese Prime Minister Fumio Kishida plans to address concerns regarding the release of treated radioactive wastewater from the Fukushima nuclear power plant.
- China has imposed a ban on Japanese seafood in response to the wastewater release.

***Nut Graf:*** *Myanmar's exclusion from the chairmanship and ongoing civil strife in the country underscore the challenges faced by ASEAN, which seeks unity and stability in the face of regional divisions and global issues.*

## 9. Southeast Asia's source of stability

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

**Prelims:** ASEAN and its members, RCEP, East Asia Summit, ASEAN Economic Community

**Mains:** Role of ASEAN in the US-China rivalry, Challenges to ASEAN Centrality in the Indo-pacific

**ASEAN**
- ASEAN (Association of Southeast Asian Nations) has its origins in 1967 where 5 countries came together to oppose communism.
- It has since expanded to 10 members and has become a regional intergovernmental organization that promotes economic growth, social progress, cultural development, and regional peace and stability.
- The members include Brunei, Myanmar, Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, and Vietnam
- ASEAN's two core principles are non-interference in the internal affairs of its members and consensual decision-making.
- A consistent effort has been made to maintain ASEAN Centrality (a key objective of ASEAN Charter) in its affairs.

**Importance:**
- Part of the strategically important region containing the Strait of Malacca and South China Sea.
- The ASEAN countries have a combined GDP of approximately $3.2 trillion in 2022, making them the world's fifth-largest economy.
- It has a large population of 600 million people, making it an attractive market for businesses.

**Contributions:**
- ASEAN has been successful in promoting economic cooperation and regional integration.
- ASEAN's primary goals include creating a unified market and production base within the region, reducing tariffs, and promoting economic integration among member states.
- It has established various initiatives such as AFTA (ASEAN Free Trade Area) and AEC (ASEAN Economic Community) to achieve these goals. AEC was established in 2015 to create a single market and production base in Southeast Asia.
- ASEAN has also established international forums such as ARF (ASEAN Regional Forum) (1994) and EAS (East Asia Summit) (2005) to collaborate with external partners while maintaining the "centrality" principle.
- ASEAN has entered into trade agreements with several regional partners, including Australia, China, India, Japan, New Zealand, and South Korea.
- Regional Comprehensive Economic Partnership which covers 30% of the world's population also involves the ASEAN countries apart from five other countries.

**The ASEAN way: A Success?**
- ASEAN nations are vastly heterogeneous in terms of cultures, growth and developmental levels, modes of governance, and so on.
- Singapore has the highest GDP per capita in the group, while Myanmar has the lowest.
- Singapore and Vietnam are considered as some of the world's most religiously diverse countries, while Buddhist-majority Cambodia and Muslim-majority Indonesia are fairly homogeneous.
- The success of ASEAN has been attributed to its informal organizational structure, heavy focus on consensus building, equal weightage to members, and a policy of non-interference.
- This has been called the "ASEAN Way".

**Challenges:**
- Despite its achievements, ASEAN faces several geopolitical challenges, including:
    - Inability to provide a coordinated response to China's territorial claims in the South China Sea, where five ASEAN members have contesting claims.
    - Criticism for not adequately isolating the military junta that seized power in Myanmar in 2021.
    - Dilemma of choosing sides between the US and China, given their increasing rivalry in the region.
- Critics also argue that ASEAN's informal organizational structure and consensus building approach constrains it from taking strong and cohesive action on important issues making it ineffective and toothless.

*Nut Graf: ASEAN as a regional intergovernmental organization has been successful in promoting economic cooperation and regional integration, but it faces several geopolitical challenges, such as China's territorial claims in the South China Sea and being enmeshed in the US-China rivalry.*

## 10. India – Greece relations

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

**Mains:** India – Greece relations

**Context:** Recently, India and Greece have taken a significant step by upgrading their relationship to a strategic partnership. The partnership aims to double trade, enhance defence and security collaboration, and address shared challenges.
- On this occasion, the Greek President Katerina Sakellaropoulou conferred the Prime Minister (PM) of India with "The Grand Cross of the Order of Honour".
- The Indian PM paid tribute at the 'Tomb of Unknown Soldier' in Athens.

**Areas of cooperation**
- Defence and Security: India and Greece agreed to intensify their defence and security cooperation, especially in maritime security, counter-terrorism, cyber security, and the defence industry.
- Maritime Security and Adherence to International Law: They shared their vision of a free, open and rules-based Mediterranean Sea and Indo-Pacific, in accordance with the law of the sea, in particular the provisions of the UNCLOS and with full respect for the sovereignty, territorial integrity, and freedom of navigation to the benefit of international peace, stability and security.
- Culture and Tourism: They also agreed to encourage joint efforts in preserving and protecting ancient sites and strengthen cooperation within the United Nations Educational, Scientific and Cultural Organization (UNESCO).
- Trade and investment: The two countries also aimed to double bilateral trade by 2030. They agreed to explore new opportunities in sectors such as renewable energy, infrastructure, pharmaceuticals, agriculture, and innovation.

- Mobility and Migration Partnership Agreement (MMPA): Both leaders agreed that an early finalization of an MMPA would be mutually beneficial, facilitating in particular the free movement of the workforce between the two countries.

## What is the Tomb of the Unknown Soldier?

- The Tomb of the Unknown Soldier is a war memorial located in Syntagma Square in Athens, Greece. It is dedicated to Greek soldiers who lost their lives in various wars. The tomb serves as a symbol of remembrance and honour for the sacrifices made by anonymous soldiers. It was sculpted between 1930 and 1932 by sculptor Fokion Rok.

## India – Greece relations

- **Historical Linkages:** Alexander the Great's campaign in the 4th century BCE, which reached the north-western part of the Indian subcontinent. Trading between the Mauryan Kings and Greece is evidenced by coinage and writings. Chanakya, in Chandragupta's Court, records in Arthashastra about the Yavan Ambassador in the Kings' court named Megasthenes. Gandhara art, which flourished in the region of present-day Pakistan and Afghanistan, is believed to be a result of Indian and Greek influences.
- **Commercial Relations:** Bilateral trade between India and Greece stood at USD 2 billion in 2022-23. India mainly exports aluminum, organic chemicals, fish and crustaceans and iron and steel to Greece, among other things. Meanwhile, Greece's top exports to India are minerals fuels, mineral oils and products, sulphur and aluminium foil.
- **Culture:** Dimitrios Galanos, a Greek, became the first European Indologist and spent 47 years in India translating many Hindu texts into Greek and compiled a Sanskrit-English-Greek dictionary of over 9000 words.

## 11. India – Canada Ties

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

**Mains:** India-Canada bilateral relations

### Context

Security threats faced by Indian diplomats in Canada disrupt normal mission operations. Visa issuance temporarily suspended. Calls for diplomatic parity and address terrorism.

### Security Concerns Impacting Indian Missions

- The Ministry of External Affairs (MEA) has announced that Indian missions in Canada are facing "security threats," leading to the temporary suspension of visa issuance.
- Indian diplomats in Canada have been affected by these security threats, disrupting their normal functioning.

### Call for Diplomatic Parity

- MEA spokesperson emphasised the need for "parity" in the posting of diplomats in each other's missions between India and Canada.
- There is an expectation of a reduction in the number of Canadian diplomats in India in response to this call for parity.

### No Evidence of Indian Involvement in Killing

- The MEA spokesperson stated that the Indian government has not received any evidence from the Canadian government regarding the alleged involvement of Indian entities in the killing of Khalistan Tiger Force chief Hardeep Singh Nijjar in June in Surrey.
- India has called on Canada to ensure the safety of Indian diplomats, upholding the Vienna Convention on Diplomatic Relations.

### Suspension of Visa Facility Extended to Third Country Applicants

- The suspension of the visa facility at Indian missions in Canada will also apply to third-country applicants who may choose to apply for visas through Indian missions in Canada.

### Increased Threat Perception

- The tension escalated after Canadian Prime Minister Trudeau accused Indian operatives of being involved in Nijjar's murder in Surrey, British Columbia.
- Threats against Indian diplomats in Canada and Ottawa's diplomats in India have increased, including vitriolic online comments and targeted campaigns.

**Call for Addressing Terrorism**

- The MEA spokesperson highlighted the larger issue of terrorism, supported and funded by Pakistan and the need for safe havens abroad, including in Canada, for such activities.
- Political will is a must to address terrorism and its international dimensions.

**Canada's Diplomatic Adjustments**

- The High Commission of Canada confirmed that it has "adjusted" its staff count in diplomatic missions in India to ensure the safety of its diplomats.
- Canada reminded India to uphold the diplomatic code of conduct outlined in the Vienna Convention on Diplomatic Relations, 1961.

***Nut Graf:*** *India suspends visa issuance in Canadian missions due to security threats against Indian diplomats. It highlights the call for diplomatic parity, addresses murder allegations, and emphasises the safety of diplomatic staff.*

## 12. India-Canada reset

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting the Indian interests. Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

**Mains:** India-Canada bilateral relations.

**Context**

India-Canada relations are strained, with the Khalistan issue at the centre. A 2010 apology by the Canadian PM was a turning point, but recent tensions pose challenges.

**Introduction**

- Tensions between India and Canada have reached their lowest point since the 1980s.
- Former diplomats believe that addressing the Khalistan issue is crucial for a future reset in bilateral ties.
- The 2010 apology by then-Canadian Prime Minister Stephen Harper stands as a significant example of change.

**The Apology**

- In 2010, Prime Minister Stephen Harper issued an apology for the 1985 Air India Flight 182 bombing, acknowledging Canada's role in the tragedy.
- He expressed sorrow on behalf of the Canadian government, recognizing that the bombing was planned and executed by Canadian citizens, causing mostly Canadian casualties.
- This apology was seen as a turning point, as it marked a departure from Canada's previous stance on the Khalistan issue.

**Three Key Events Leading to Canada's "Change of Heart" in 2010**

1. **9/11 Attacks (2001):** Following the 9/11 attacks in the U.S., Canada abandoned its soft approach towards "freedom movements" and signed terror conventions. It ceased providing refuge to those fleeing terror charges from countries including India.
2. **26/11 Mumbai Attacks (2008):** The Mumbai attacks in 2008 strengthened India's resolve against terrorism, pushing for a change in Canada's stance.
3. **Manmohan Singh's Visit (2010):** During then-Prime Minister Manmohan Singh's visit for the G-20 summit in Toronto, a series of agreements were signed. This visit marked a significant shift in India-Canada relations, enabled by the earlier apology by Prime Minister Harper.

---

**Five Eyes Alliance**

- Canadian Prime Minister Justin Trudeau's allegations against the Indian government regarding the assassination of a Sikh Canadian were based on information shared within the 'Five Eyes' intelligence alliance.
- The 'Five Eyes' alliance consists of Australia, Canada, New Zealand, the U.K., and the U.S., collaborating on intelligence sharing.
- U.S. Ambassador David Cohen confirmed the use of shared intelligence by Canada in making these allegations.
- A Canadian official had previously mentioned that the allegations were supported by surveillance of Indian diplomats in Canada and intelligence from a major ally, without specifying the ally.

---

**Impact of the Shift**
● Trade and investment between India and Canada increased significantly over the decade.
● Cooperation expanded in various areas, including countering terrorism, energy, and nuclear fuel.

**Recent Tensions**
● Under Prime Minister Justin Trudeau's government, ties with Khalistan separatists have strained relations.
● Some Canadian political parties prioritise engagement with these groups, impacting bilateral ties.
● Allegations of Canada tolerating extremist activities within the Sikh community persist.
● Controversial actions, such as posters targeting Indian diplomats, have exacerbated tensions.

**Canada's Response**
● Prime Minister Trudeau denies supporting hate speech but asserts the importance of protecting "freedom of speech" in Canada.
● The situation has reached a point where repairing the relationship is challenging.

**Conclusion**
● India-Canada relations have hit "rock bottom" due to the Khalistan issue.
● Addressing this issue is crucial for any future reset in bilateral ties.

*Nut Graf: Tensions between India and Canada, stemming from the Khalistan issue, have deep historical roots, with a pivotal 2010 apology marking a change. Recent strains and allegations of Canada's tolerance for extremism have brought relations to a critical juncture.*

## 13. India and the Great Power Contest in West Asia

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

**Mains:** India's role in countering Chinese ambitions in West Asia

**Context:** At the G-20 summit in New Delhi (Sep '23), the US President and others unveiled a U.S.-backed infrastructure project to connect India, West Asia and Europe with pipelines, rail networks, shipping lanes and data cables. The U.S.-China competition in the region gives New Delhi new opportunities for multi-engagement.



**Source: World Atlas**

**Source: World Atlas**

**Current US Policy in West Asia**

**Two-fold Policy**
- Bring Gulf Arab and Israel close to counter Iran (this was seen in **the Abraham Accords** reached under Donald Trump).
- Assure its friends and allies that the USA is not exiting the region.

**USA and West Asia**
- Historically, the USA has been a pivot around which West Asian countries developed their bilateral relations.
- As the US focus is shifting to East Asia and East Europe, the West Asian countries are also becoming autonomous with their foreign policies with friends and foes in the region.
- This has also created a power vacuum in the region, which China is trying to fill (the US wants India to take this role instead of China).

**Avenues for India**
- A part of the Middle East Corridor and I2U2.
- Also, a part of the **International North-South Corridor, and BRICS.**
- Multi-engagement is the key to avoiding any diplomatic mistakes as done in Afghanistan.
- India's presence in a grouping of the Abraham Accords countries was seen as a legitimate recognition of India's presence in the region.
- The **India-Middle East-Europe Corridor**, announced at the G-20 summit enhances India's standing.

***Nut Graf:*** *India's overall policy towards the West Asian region should stay anchored in the idea of multi-engagement and not in appeasing or containing any great power. With or without the U.S., or irrespective of China's presence in the region, India should strive to play a major geopolitical role in West Asia, its extended neighbourhood, without upsetting its traditional balance.*

## 14. Vietnam, key piece of America's Indo-Pacific puzzle

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

**Mains:** Rising bonhomie between USA and Vietnam and its impact on India

**Introduction:**
● The shift in U.S.-Vietnam relations since the end of the Cold War has been notable, and it reached a significant milestone on September 10 when the General Secretary of the Communist Party of Vietnam Central Committee, Nguyen Phu Trong, and U.S. President Joe Biden met in Vietnam, elevating their bilateral relationship to a Comprehensive Strategic Partnership from the previous Comprehensive Partnership established in 2013 under Vietnam President Truong Tan Sang and U.S. President Barack Obama.
● This shift in relations is particularly noteworthy given the historical complexities stemming from the Vietnam War and Vietnam's past alignment with communist states.
● Vietnam has been cautious about engaging in strategic partnerships, and the emergence of this partnership reflects evolving geopolitical dynamics, particularly concerning China's increasing assertiveness in the South China Sea, an issue that directly affects Vietnam's interests.

**A Complex Foreign Policy Legacy:**
● Vietnam's historical legacy of conflict with the United States during the Vietnam War, as well as its alignment with communist nations such as China and the Soviet Union, initially pushed its foreign policy in a direction contrary to U.S. interests. The 1978 Treaty of Friendship and Cooperation with the Soviet Union further complicated its foreign relations.
● This complex history explains why, until recently, Vietnam had established 'comprehensive strategic partnerships' with only a few nations, including China, Russia, India, and South Korea.

**Bolstering Ties between USA-Vietnam:**
● The Biden administration has displayed a proactive stance in strengthening the U.S.-Vietnam relationship. High-level visits by U.S. officials, including Defense Secretary Lloyd Austin, Vice President Kamala Harris, Secretary of State Antony J. Blinken, and Treasury Secretary Janet Yellen, have paved the way for President Biden's visit, signalling the importance of the bilateral relationship.
● The partnership is now expanding across various domains, including building political trust, enhancing cooperation in science, technology, health, and digital innovation, focusing on workforce development, addressing climate change, and establishing a robust defence relationship. These efforts also include addressing historical issues that have affected the relationship.

**An Assertive China:**
● Recent developments, such as the conflict in Europe, have posed challenges for Vietnam as it faces difficulties in importing weapons from Russia, its largest defence supplier, due to Western-led sanctions.
● Concurrently, China's assertive actions, like placing oil rigs in Vietnam's Exclusive Economic Zone and adopting an aggressive posture in the South China Sea, have tested Vietnam's traditional policy of avoiding great power politics in the region.
● Recognizing the changing dynamics, the United States views this as an opportunity and is actively working to bolster Vietnam's defence and security capabilities as a key component of its broader Indo-Pacific strategy.

**Economic and Technological Partnerships:**
● As part of President Biden's visit, there is a concerted effort to strengthen economic ties and technological cooperation between the U.S. and Vietnam. The focus is on the semiconductor industry, with plans to establish supply chains and boost Hanoi's chip manufacturing capabilities. This initiative aligns with the broader goals of enhancing economic partnership and increasing investments in critical technologies, chips, and Artificial Intelligence.
● There is also potential for expanding these partnerships across the broader Indo-Pacific region. For instance, India's Critical and Emerging Technology (iCET) partnership with the U.S., along with the Quad's principles of critical and emerging technology, could serve as an overarching framework for standardizing technology design, development, and use.
● Additionally, the vision of a supply chain extending from Vietnam to Europe via West Asia, anchored by India and its newly launched India-Middle East-Europe Economic Corridor, symbolizes the potential of a 'comprehensive strategic partnership' in the Indo-Pacific.

**Nut Graf:** *The elevation of the U.S.-Vietnam relationship to a Comprehensive Strategic Partnership holds immense significance in the Indo-Pacific region. It reflects the evolving geopolitical landscape, the need to address shared challenges, and the growing importance of Vietnam as a key player in the region. The partnership not only strengthens bilateral ties but also contributes to the broader stability and security of the Indo-Pacific.*

## 15. Three years of the Abraham Accords

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

**Mains:** Impact on India-Israel relations in the backdrop of Abraham Accords

**Context:** The Abraham Accords were signed between Israel, the United Arab Emirates (UAE), Bahrain, and later, Morocco, with the United States playing a mediating role. These historic agreements aimed to promote stability in the tumultuous West Asian region.

**Outcomes of Abraham Accords:**
One of the primary outcomes of the Abraham Accords has been the fostering of normalization and peace in the region. These agreements not only connected governments but also brought people from diverse backgrounds together, bridging the gaps created by differences in language, religion, and culture.

**Gains for West Asian Countries:**
- **Economic Impact:** The economic impact of the Abraham Accords has been substantial. Trade between Israel and other West Asian countries saw a remarkable 74% increase between 2021 and 2022. Additionally, the previously limited tourism sector experienced significant growth, with visits from Israel to the UAE increasing by 172%. The establishment of direct flights also led to a surge in the number of Israelis travelling to Bahrain.
- **Regional Cooperation:** One of the notable achievements of the Abraham Accords was the Prosperity Green & Blue Agreement. Under this agreement, Israel, the UAE, and Jordan decided to establish a solar field in Jordan to supply 600 megawatts of electricity to Israel, while in return, a desalination plant in Israel would deliver 200 million cubic meters of water to Jordan. This agreement laid the foundation for expanded regional and multinational cooperation.
- **Youth Programs:** Recognizing the importance of engaging the younger generation in fostering long-term stability, the Abraham Accords initiated youth delegations. These delegations enable young influencers to experience each other's cultures and visit significant religious and historic sites while focusing on community building. Moreover, educational exchanges between universities have further strengthened ties among the youth.
- **Promoting Tolerance:** The Abraham Accords have had a profound impact on promoting tolerance and coexistence. For example, after Emirati Foreign Minister Sheikh Abdullah bin Zayed Al Nahyan visited the Yad Vashem Holocaust Remembrance Center in Jerusalem, the UAE incorporated Holocaust education into its school curriculum as a mandatory subject. This serves as an attestation to the ability of the Accords to foster coexistence and religious tolerance.

**Opportunity for India:**
- **Connectivity Benefits:** India has reaped several benefits from the Abraham Accords. The vibrant Indian diaspora in the Gulf now enjoys the convenience of direct flights between the UAE and Israel, as well as between Israel and Bahrain. Indian students have also benefited from increased ease of travel, gaining improved access to universities and international study programs.
- **I2U2 Group:** One concrete illustration of high-level economic cooperation between governments is the establishment of the I2U2 Group, comprising Israel, India, the UAE, and the U.S. This group focuses on joint investments in critical areas such as water, energy, transportation, space, health, and food security. The Abraham Accords paved the way for such strategic collaborations.
- **Shared Interests:** India holds a significant position among the partners involved in the Accords. The scope of collaboration underscores shared interests, including championing a sustainable recovery from the COVID-19 pandemic, expanding trade, addressing climate change, and countering threats to international security. Through concerted efforts of both public and private sectors, these nations are poised to deliver promising outcomes for the world. India's special bond with these nations and their commitment to realizing the full potential of the Accords as partners in peace and prosperity remain evident.

**Nut Graf:** *The Abraham Accords, signed three years ago between Israel, the UAE, Bahrain, and later Morocco, have transformed West Asia and North Africa. These agreements have ushered in a new era of peace and cooperation, with significant economic and cultural benefits. Moreover, they have opened up exciting opportunities for India, strengthening regional connectivity and promoting mutual interests in areas like sustainability and international security. The Accords demonstrate the power of unity and cooperation in shaping a more promising future for the region.*

## 16. Harami Nala & Sir Creek Dispute

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

**Prelims:** Harami Nala & Sir Creek Dispute

**Context:**
- The Union Home Minister visited "Harami Nala" and Border Observation Posts (BOPs) of the Border Security Force (BSF) in the Sir Creek area of Kutch, Gujarat, along the India-Pakistan international border.
- Harami Nala is known for its inhospitable conditions and has been a hotspot for cross-border crime and exploitation by infiltrators.

**About Harami Nala**
- Harami Nala is a natural water body approximately 25 kilometres long that flows west to east from Pakistan into Kutch, south of the Vighakot sector.
- The channel is flanked by vast marshy mudflats that are affected by low and high tides.
- About 22 odd kilometres of the channel lie on the Indian side of the "vertical line" of the IB between India and Pakistan, which is not contested.
- Tidal waters surge from the Pakistani side and extend further on the Indian side.
- Chini-Bandh (China Bund) on the Pakistani side prevents tidal waters from inundating areas.
- It is extremely rich in fishing, especially prawns.
- Temperatures reach above 50° Celsius in summer.
- Pakistani fishing boats try to enter the Harami Nala on the Indian side, drawn by the possibilities of better fish catch.
- Marshy terrain makes it impossible to approach or patrol on foot by the Indian security agencies during low tide.
- The Indian side is mostly empty over the entire spread of the Harami Nala except for factories producing salt, bromide, and other chemicals.

**Efforts being made for improved surveillance in the region?**
- The Mooring Place project has an allocated budget of 257 crore and will allow for the berthing, repairs, and maintenance of bigger vessels, including floating BOPs, thereby enhancing the BSF's capabilities in the Creek area. The foundation stone for the same in Kutch was laid.
- Inauguration of the newly constructed Chidiya Mod-Barbet Link Road and observation post (OP) Tower in the Harami Nala area.
- The observation post tower is fitted with state-of-the-art high-resolution pan-tilt-zoom cameras, along the "vertical line" of the International Border (IB) with Pakistan, offering real-time visual monitoring and constant vigilance over the regions adjacent to Harami Nala.
- These initiatives are part of the Prime Minister's vision of a "secure border".
- The entry point of the Harami Nala on the Indian side was previously difficult to access due to lack of infrastructure, but the procurement of all-terrain vehicles (ATVs) and special scaffolding on the bank of the channel has improved the situation, allowing BSF personnel to more easily launch small patrol boats into the channel.
- Embankments and road infrastructure along the "vertical line" of the IB have enabled new observation posts to come up, allowing for better surveillance and control of infiltration attempts.

**Conclusion:**
- BSF is facing new challenges in the form of drones and unmanned aerial vehicles (UAVs) being used by terrorists and criminals to smuggle weapons and narcotics across the border. The visit by the Home Minister will boost the morale of BSF personnel and demonstrate the government's commitment to supporting them in their efforts to secure the border.

## 17. After India, Philippines, Malaysia and Indonesia protest China map

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

**Mains: Protest against China map**
- The Philippines, Malaysia and Indonesia released separate statements voicing their opposition to China's new "standard map" for 2023, which has also drawn a strong protest from India.
- But China again defended the issuing of the map on August 28, when asked about the protests from India, Malaysia and the Philippines.
- The authorities of China routinely publish standard maps of various types every year, which aim to make standard maps available to all sectors of society and raise public awareness of the standardised use of maps.
- The map showed within China's borders all of the Indian State of Arunachal Pradesh, Aksai Chin, as well as the entire South China Sea. While these were also displayed on previous versions of China's official map, the issuing of the new map has been seen by China's neighbours as complicating territorial disputes that are being negotiated.
- The Philippines Foreign Ministry in a statement said it "rejects" the 2023 version of China's "standard map" and the inclusion of the so-called nine-dash line.
- This latest attempt to legitimize China's purported sovereignty and jurisdiction over Philippine features and maritime zones has no basis under international law, particularly the 1982 United Nations Convention on the Law of the Sea (UNCLOS).
- The Malaysian government also protested against the map, saying it "rejects" the map "which shows unilateral claims to Malaysia's maritime territory" including parts of the Malaysian Exclusive Economic Zone (EEZ).
- **'Respect UN norms'**
  - Indonesia was the third ASEAN country to issue a statement, saying "the drawing of territorial lines, including in the 2023 Edition of the Standard Map of China, must be in accordance with the UN Convention on the Law of the Sea 1982 (UNCLOS 1982)."
  - Any line drawn and any claims made must be in accordance with the 1982 UNCLOS.
  - India lodged a strong protest over the map and described it as making "absurd claims" on its territory.

## 18. China's challenge in Arunachal Pradesh

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

**Mains:** India-China dispute over Arunachal Pradesh

**Context:** China denied entry to three Indian athletes from Arunachal Pradesh at the ongoing Asian Games in Hangzhou. It had instead offered stapled visas, which had been rejected by India. Union Sports Minister Anurag Thakur cancelled his visit to China as a mark of protest.

**Issue of Stapled Visas**
- China has in the past issued stapled visas to Indians from Arunachal Pradesh.
- In July, three wushu players from Arunachal Pradesh, due to take part in the World University Games in Chengdu, were issued stapled visas.
- The stapled visas for Jammu and Kashmir residents appear to have started around 2008-09, media reports have noted. In 2013, The New York Times published an account of a Kashmiri man who claimed he had been issued a stapled visa by the Chinese embassy in New Delhi and had been stopped at the airport in September 2009.
- In 2010, the Chinese refused a visa to Northern Army Commander Lt Gen B S Jaswal to attend an official meeting on the ground that he serves in "sensitive" Jammu and Kashmir.
- In 2011, ahead of a scheduled meeting between Prime Minister Manmohan Singh and China's President Hu Jintao, media reports quoted Chinese foreign ministry official Hong Lie as saying China was "ready to work with India to have friendly consultation and properly handle" issues such as the one related to the stapled visas.
- Also in 2011, the junior External Affairs Minister E Ahamed told Rajya Sabha that the Indian government was "aware" that "despite strong protest by the Indian Government, the Chinese Embassy in India has again issued stapled visas to the people of Jammu and Kashmir", and that "one officer of Indian Weightlifting Federation (IWF) along with a noted weightlifter were not allowed to board the flight to Beijing because of the stapled visas issued by the Chinese Embassy in the capital".
- In 2011, a 45-member Indian karate team was to travel to Quangzhou for an Asian Championship. Most of them got their visas days in advance except five members – three players and two officials – from Arunachal, who were stopped at the IGI Airport in New Delhi after the Chinese Embassy issued them stapled visas.
- That same year, a weightlifting federation official and lifter from the same state, bound for a grand prix, missed out

after being given stapled visas.

**What is a stapled visa?**

● A stapled visa is simply an unstamped piece of paper that is attached by a pin or staples to a page of the passport and can be torn off or detached at will. This is different from a regular visa that is affixed to the passport by the issuing authority and stamped.

● China has made it a practice to issue stapled visas to Indian nationals from Arunachal Pradesh and Jammu and Kashmir. It says the visas are valid documents, but the Government of India has consistently refused to accept this position.

**India-China Dispute over Arunachal Pradesh**



Source: https://www.opindia.com/

● China claims Ladakh, Arunachal Pradesh in latest map

● In the 2023 edition of the Standard Map of China published on Monday, China claimed part of Ladakh called Aksai Chin and Arunachal Pradesh as its own.

● China claims some 90,000 sq km of Arunachal Pradesh as its territory. It calls the area "Zangnan" in the Chinese language and makes repeated references to "South Tibet". Chinese maps show Arunachal Pradesh as part of China, and sometimes parenthetically refer to it as "so-called Arunachal Pradesh".

● China makes periodic efforts to underline this unilateral claim to Indian territory, and to undermine the sovereignty of India over parts of Indian territory. As part of these efforts, it issues lists of Chinese names for places in Arunachal Pradesh — it has issued three such lists in 2017, 2021, and in April this year — and takes steps such as issuing stapled visas.



The India-China face-off on December 9 was in Tawang, Arunachal Pradesh

Source: Indianexpress

**Analysis**

● Not the first instance of Beijing using sporting events that should have no place for politics to score geopolitical points.

● In February last year, Beijing ill-advisedly selected the PLA's commander involved in the Galwan Valley clash as one of the torchbearers for the Winter Olympics.

● The latest Chinese action serves as a reminder of the current distrust in bilateral relations, as well as of the absence

of adequate channels of communication to deal with long-persisting thorny issues, including visas.
● New Delhi has correctly made clear that restoring normalcy in relations will not be possible without completing the disengagement process along the Line of Actual Control and restoring peace in border areas.

*Nut Graf: Until Beijing reviews its stance on the border, the current state of affairs, which suits neither India nor China, is likely to endure.*

## 19. Finding Seoul in the Indo-Pacific

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

**Mains:** India – South Korea relations

**Context:** Amidst 50 years of diplomatic ties, the Camp David summit offers a strategic reset, allowing India and South Korea to collaborate.

**Significance of Camp David Summit:**
● **Repairing Seoul-Tokyo Relations:** The Camp David summit between the U.S., Japan, and South Korea signifies a positive shift in Seoul-Tokyo relations, addressing historical tensions.
● **Strengthening U.S.-Led Alliances:** It contributes to a stronger U.S.-led alliance structure in East Asia, aligning with AUKUS, the Quad, and the CHIP 4 Alliance.
● **Regional Security Adaptation:** The summit reflects an acknowledgement of the changing regional security environment, emphasizing the need for coordinated responses to emerging challenges.
● **Potential for Indo-Pacific Strategy:** The summit opens opportunities for South Korea to reorient itself in the Indo-Pacific, aligning with the American perspective on China and deepening engagement in the region.
● **Departure from Passive China Policy:** South Korea's departure from its traditionally passive approach towards China underscores its willingness to address the growing Chinese military presence in the region, despite economic dependencies.

**Opportunities for Delhi and Seoul:**
● **South Korea's Indo-Pacific Role**: South Korea's evolving strategic direction in the Indo-Pacific offers an opportunity for India to enhance its relations with Seoul.
● **Desire to Join the Quad:** South Korea's interest in joining the Quad reflects a growing desire for regional engagement and aligns with India's interests.
● **"Global Pivotal State" Vision:** President Yoon Suk Yeol's foreign policy vision positions South Korea as a "global pivotal state," creating avenues for partnership with India.

**Potential Areas for Strengthened Cooperation:**
● **Political and Diplomatic Engagement:**
  ○ **Annual Foreign Minister-level Summits:** Regular high-level meetings between the foreign ministers of India and South Korea can facilitate strategic discussions, enhance mutual understanding, and provide a platform for addressing regional and global challenges.
  ○ **2+2 Format Dialogue:** Exploring a 2+2 dialogue format, which involves meetings between the defence and foreign ministers of both countries, can deepen security cooperation and coordination on regional issues.
  ○ **Reciprocal Visits by Leaders:** Reciprocal visits by leaders, such as Prime Minister Narendra Modi of India and President Yoon Suk Yeol of South Korea, can strengthen personal rapport and political ties, fostering a closer partnership.
● **Critical and Emerging Technology:**
  ○ **iCET Initiative:** Collaborating on a South Korea-Japan-India-U.S. initiative focused on Critical and Emerging Technology (iCET) can promote technological innovation, cybersecurity, and economic growth by sharing expertise and resources in this critical area.
● **Defence Collaboration:**
  ○ **Leveraging South Korea's Expertise:** South Korea's advanced defence technology and capabilities can support India's defence modernization efforts. Leveraging this expertise can include joint research and development projects, technology transfer, and collaborative defence production.
  ○ **Co-production Opportunities:** Exploring co-production opportunities for military equipment like the K9 Vajra self-propelled howitzer and K2 Black Panther tanks can enhance self-reliance in defence production and promote economic cooperation.

- **Civilian Nuclear Reactors:**
  - **Clean Energy Cooperation:** Collaborating on Korean-built civilian nuclear reactors can help India meet its growing energy demands while reducing carbon emissions. This partnership aligns with India's commitment to clean and sustainable energy sources.
  - **Addressing Legal Challenges:** Both countries should work together to address challenges related to India's nuclear liability law and international agreements, ensuring a conducive environment for the import and operation of Korean-built reactors in India.

*Nut Graf: In commemorating 50 years of diplomatic relations, India and South Korea have a prime opportunity to strengthen cooperation in multiple key areas. This includes political and diplomatic engagement through high-level summits, exploring critical technology initiatives, deepening defence collaboration, and fostering clean energy cooperation with Korean-built nuclear reactors. These strategic partnerships align with evolving geopolitical dynamics in the Indo-Pacific, ensuring mutual benefits and regional stability.*

## 20. Delhi may turn venue for dialogue on reviving the Black Sea Grain Initiative

**Syllabus:** GS 2- International relations

**Prelims:** Black Sea Grain Initiative

### Reviving the Black Sea Grain Initiative (BSGI)
- UN Secretary-General Antonio Guterres seeks to renew the BSGI during discussions at the G-20 Summit in Delhi.
- The BSGI, facilitating grain exports from Russia and Ukraine, expired in July, prompting urgent negotiations.

### Key Leaders and Compromise Efforts
- Prominent figures attending the G-20 Summit, including Turkey's President Recep Erdogan, Russian Foreign Minister Sergey Lavrov, EU leaders, and UN officials, aim to reach a compromise.
- The objective is to enable the resumption of grain exports from blockaded Ukrainian ports at the earliest opportunity.

### India's Support and MEA's Position
- India expresses support for the BSI, although Ministry of External Affairs (MEA) officials claim to be unaware of specific sideline meetings related to the initiative at the G-20 Summit.

### BSGI Background and Lapse
- The BSI initially emerged to address potential shortages of wheat and sunflower oil during the Ukraine conflict but lapsed in July.
- Russia refused to renew the deal, citing unfulfilled promises by Western countries.

### UN's Active Involvement
- UN Secretary-General Guterres plays a proactive role in resolving the issue, with potential concessions involving greater access to financial markets for Russia.
- In return, guarantees are sought to prevent Russia from threatening or bombing Ukrainian ships or ports involved in grain exports.

### President Erdogan's Involvement
- Turkey's President Erdogan, following his Russia visit, is expected to advance discussions regarding the BSGI during his meetings in Delhi.
- He expressed optimism about reaching a swift solution.

### New Proposals and Global Food Impact
- Turkey and the United Nations collaborated on a fresh set of proposals for Russia to consider, with discussions on the way forward scheduled during their Delhi visit.
- The BSGI includes agreements among Russia, Ukraine, Turkey, and the UN to resume grain and foodstuff exports and promote Russian food products and fertilisers globally.
- Without these agreements, the world faces the risk of significant food inflation, especially impacting African nations, as Russia and Ukraine collectively account for a substantial share of global barley, maize, and wheat exports.

## 21. Modi, Biden welcome progress in defence ties

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

**Prelims:** QUAD, UNSC, GE F-414 jet engines, INDUS-X, iCET, RE-TAP

**Mains:** India – US Relations, Free and Open Indo-Pacific

### Introduction

- The joint statement issued by India and the US after the meeting between Prime Minister Narendra Modi and President Joe Biden highlights the growing strategic partnership between the two countries.
- The statement mentions several areas of cooperation, including defense, security, trade, technology, and people-to-people ties.

### Areas of Cooperation

- **Political:**
  - India and the US emphasized their commitment to further strengthening the India-US global strategic partnership based on shared democratic values, mutual respect, pluralism and trust.
- **Geo-strategic:**
  - Prime Minister Modi and President Biden reaffirmed the importance of the Quad in supporting a free, open, inclusive, and resilient Indo-Pacific.
  - President Biden also supported a reformed UN Security Council with India as a permanent member.
- **Defense**:
  - The two countries have agreed to expand their military engagements, including joint exercises, training, and capacity building and look forward to an expanded cooperation in new and emerging domains such as space and AI.
  - Both leaders also welcomed the commencement of negotiations for a commercial agreement between GE Aerospace and Hindustan Aeronautical Limited (HAL) to manufacture GE F-414 jet engines in India.
  - The India-U.S. Defence Acceleration Ecosystem (INDUS-X) team was praised by leaders for creating a strong collaboration plan to tackle common security issues.
  - President Biden endorsed the Ministry of Defense of India's request for 31 General Atomics MQ-9B drones (16 Sky Guardian and 15 Sea Guardian) which will improve India's military force's ability to gather intelligence, conduct surveillance, and engage in reconnaissance activities.
- **Trade:**
  - The joint statement highlights that the US and India have made significant progress in resolving bilateral trade disputes, including six outstanding issues settled through the World Trade Organization (WTO).
  - The US has expressed its interest in seeing India join the Indo-Pacific Economic Forum's "Trade" pillar. However, India has so far stayed away from this initiative due to concerns that binding environmental and labour regulations might affect its trade interests.
- **Technology and Innovation**:
  - The US and India have shown inclination to undertake a midterm review of the Initiative on Critical and Emerging Technology (iCET) which fosters open, accessible, secure, and resilient technology value chains.
  - The leaders reiterated their support for building resilient global semiconductor supply chains.
  - Sharing a vision of secure and trusted telecommunications, resilient supply chains, and global digital inclusion, Prime Minister Modi and President Biden welcomed the signing of a Memorandum of Understanding (MoU) between Bharat 6G Alliance and Next G Alliance.
  - The United States reiterated its commitment to working together with India in the quantum domain.
  - The leaders hailed the signing of an Implementation Arrangement between the U.S. National Science Foundation (NSF) and India's Department of Biotechnology to innovate in the field of biotechnology.
- **Energy:**
  - India's National Investment and Infrastructure Fund and the U.S. Development Finance Corporation intend to each contribute up to $500 million to establish a renewable infrastructure investment fund.
  - Both leaders agreed to enhance cooperation in nuclear energy, including the development of advanced small modular reactors.
  - The two countries have also launched the India-U.S. Renewable Energy Technologies Action Platform (RE-TAP) to promote collaboration in renewable energy research, policy, and investment.
- **People to People:**
  - The leaders agreed to promote entrepreneurship through the "Innovation Handshake" program, with events in India and the US, connecting start-ups, investors, and officials to boost bilateral ties.

**Conclusion**

The joint statement suggests that the US and India are strengthening their strategic partnership across various sectors, with a focus on promoting regional stability, enhancing economic ties, and advancing technological collaboration.

*Nut Graf: India and the US have agreed to strengthen their strategic partnership in several areas, including geo-strategic, defense, security, trade, technology, and people-to-people ties.*

## 22. Change the playbook, repatriate Indian children

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

**Mains: Issues affecting the Indian Diaspora**

**Context:**
- Several expatriate Indian mothers have been separated from their children by host countries in a gross violation of human rights affecting the well-being of the mothers, children, and families.

**Instances of children removed from parental custody**
- Priyadarshini Patil and Dhara Shah are among the mothers affected by child protection agencies in foreign countries.
- Priyadarshini Patil ended her life after her children were confiscated by Australian child services authorities, and the family's pleas to have the children repatriated to India were not accepted.
- Dhara Shah and her husband have been separated from their baby girl, who was sent to permanent foster care by Germany's child welfare agency in 2021.
- The parents were accused of having injured the child, but there is evidence to the contrary supported by expert medical reports, and the court-appointed psychological expert recommended that the child be placed under supervision at a parent-and-child centre, which the court ignored in its decision.
- India's government has asked for the baby's return to Indian child protection authorities, but Germany has not considered it yet.

**Cultural Prejudice in Dealing with Parenthood**
- Typically, young families move to work in a high-income country, and parents are accused of abusing their children. They are subjected to a one-sided trial that is culturally prejudiced, and parental custody is terminated.
- Children are placed in foster care without links to their origin and raised in a home environment that doesn't reflect Indian culture, including food, language, etc. Adapting to these conditions is tough for infants, toddlers and primary schoolers.
- Due to a lack of sufficient foster homes, children are shifted from one carer to another which causes damaging trauma to the child.
- Protracted legal battles over custody without a global standard operating procedure have caused distress to parents, children and all stakeholders involved.

**Why should they be repatriated to India?**
- These children are usually not citizens of the country of residence and have no substantial ties with their country of origin.
- A return to safe placement in the home country is a more humane and compassionate solution for such children instead of leaving them in the custody of a foreign state agency.
- Returning these children to their home country will benefit them where they can live with extended family and grow up in familiar cultures.

**Way ahead?**
- Foreign nations should engage in a sincere inquiry into parents' claims of cultural prejudice and unfair trials in their child protection system.
- Develop a global protocol for the repatriation of children removed from their parents by foreign child services to prevent similar tragedies.
- If the home country is willing to take responsibility for the child's safety and welfare, as India has done in the case of the Gujarati baby in Germany, there should be no reason to refuse repatriation.
- The child's humanity and rights should be prioritized over jurisdictional issues, and the cultural context of upbringing should not be disregarded.

*Nut Graf: Expatriate Indian mothers have been separated from their children by host countries in a gross violation of human rights. These children should be repatriated to India, where they can live with extended family and grow up in familiar cultures.*

## 23. Pakistan's internal challenges

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting the Indian interests. Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

**Mains:** Foreign policy dynamics of Pakistan and its engagement with Afghanistan

### Context
The article discusses Pakistan's evolving stance in Afghanistan and the rise of the Tehrik-e Taliban Pakistan (TTP) following the Taliban's takeover of Kabul.

### Introduction
- Ashraf Ghani, former Afghan President, sought Pakistan's cooperation to rectify Afghan policy errors.
- In a critical May 2021 meeting with Pakistan's military leaders and the UK Chief of Defence Staff, promises made by the Pakistani military were often diluted down the chain of command.
- Mr. Ghani observed a consistent drop in implementation percentages as orders went from Gen. Bajwa to Gen. Faiz Hamid to subordinate field commanders, revealing complexities within Pakistan's military.

### Pakistan's Changing Mood
- Pakistan's mood shifted dramatically after the Taliban's unexpected victory in Afghanistan.
- Military and political leaders celebrated the perceived liberation of Afghanistan from oppression.
- International community views evolved from jubilant acceptance to condemnation of the Taliban's actions.
- Pakistan's claims of being a victim of terrorism found little traction, even within Pakistan.

### Pakistan's Radicalization Challenge
- Following the Taliban's takeover of Kabul, Pakistan witnessed a concerning shift.
- Tehrik-e Taliban Pakistan (TTP) gained strength with almost 40 allied groups, leading to a surge in insecurity marked by a rise in suicide attacks.
- Pakistan found itself as a new battleground, grappling with an intensifying phase of radicalization.

### TTP's Potency and Strategy
- TTP's resurgence was outlined in Noor Wali Mehsud's book, emphasising local alliances and organisational discipline.
- The TTP mirrored the Afghan Taliban's provincial structure, focusing on urban insurgency.
- TTP employed effective media tactics and commented on financial, governance, and corruption issues to rally public support.
- TTP leveraged a potent narrative exploiting divisions and grievances, presenting Afghanistan's Taliban success as a governance model.

### Pakistan's Struggles Against the TTP
- The outlook is grim due to ingrained structural grievances, widespread radicalization, and local sympathy for TTP.
- Public frustration with the military's role was underscored.
- The absence of support from the United States in terms of intelligence, drone operations, and financial aid further compounded Pakistan's challenges.

### Shift in Pakistan's Strategy
- Pakistan's historical pursuit of strategic depth in Afghanistan, including backing non-state actors against friendly governments, underwent a significant change.
- The dynamic reversed as the Afghan Taliban secured a strategic foothold within Pakistan, often with the support of entities like the TTP and other radical groups.
- Taking military action against the TTP posed risks for the Afghan Taliban.

### Reasons Afghan Taliban Won't Act Against TTP
- The Afghan Taliban avoided strong action against the TTP to prevent internal division and the potential loss of its ranks.
- They understood that antagonising the TTP could result in losing secure havens across the Durand Line.
- The TTP possessed the capability and geographical advantage to challenge the Afghan Taliban's authority in Afghanistan.
- Pakistan's historical use of religious madrasas to exert influence is now in the hands of the Afghan Taliban, providing substantial support.
- Shifts in financial support from Afghans to TTP groups complicated the situation and indicated a paradigm shift.

**Pakistan's Need for Introspection**

- Navigating a way forward requires a thorough re-evaluation of Pakistan's policy on cultivating radical Islamist groups, both domestically and internationally, for foreign policy gains.
- Pakistan's continuation of this policy, while other nations abandoned it, now casts a shadow over the nation's future.
- Pakistan must redefine its military's role to prioritise civilian governance and support the Pashtun Tahafuz Movement (PTM), which advocates regional peace and opposes Pakistan's dual-centric policy.
- Urgency is underlined by rampant radicalization, poverty, economic challenges, and India's advancements.
- Pakistan stands at a crossroads, necessitating a new path for stability, prosperity, and better relationships with neighbours, including India and Afghanistan.
- The cost of recent policies falls on innocent citizens, leading to concerns about talent and resources wasted in the harsh reality of survival.

*Nut Graf: Pakistan's shifting strategy in Afghanistan, with a focus on the rise of the TTP, reveals complex dynamics, risks, and the need for introspection in its foreign policy.*

## 24. Nepal says no to China's security initiative

**Syllabus:** Bilateral, regional and global groupings and agreements involving India and/or affecting the Indian interests. Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

**Mains:** Nepal's foreign policy decisions and its relationship with China

**Context**
Nepal's response to China's Global Security Initiative and commitment to crossborder connectivity projects during Prime Minister Prachanda's visit to Beijing.

**Introduction**
- Nepal's response to China's Global Security Initiative (GSI) and commitment to cross-border connectivity projects during Prime Minister Prachanda's visit to Beijing.
- A joint statement outlines key developments in the Nepal-China relationship.

**Nepal's Position on GSI**
- Nepal did not endorse China's Global Security Initiative (GSI).
- Instead, Nepal expressed support for the Global Development Initiative (GDI) and willingness to consider joining the Group of Friends of the GDI.
- Nepal emphasised its cautious approach to security cooperation with China.

**Cooperation on Tibet and Territorial Integrity**
- Nepal reaffirmed its commitment to not allow any separatist activities against China on its soil.
- China expressed firm support for Nepal's independence, sovereignty, and territorial integrity.

**Security Cooperation Elements**
- Both countries agreed to undertake a joint inspection of the China-Nepal boundary.
- Acknowledged the significance of law enforcement cooperation for bilateral security.
- Commitment to enhance information exchange, capacity building, and cooperation between law enforcement institutions.

**Crossborder Connectivity Projects**
- Flagship project: Cross-border railway from Lhasa to Kathmandu.
- Agreement to strengthen connectivity in ports, roads, railways, airways, and grids.
- Plan to jointly build the Trans-Himalayan Multi-Dimensional Connectivity Network.
- Notable port openings and future border ports under consideration.

**Infrastructure and Projects**
- China backs the fourth phase of the Araniko Highway maintenance project.
- Commitment to renovate the Syaphrubesi-Rasuwagadhi Highway following demolition activities.
- Accord to build a 220 KV Cross-Border Power Transmission line.
- Advancements in the feasibility study of the Jilong/Keyrung-Kathmandu Cross-Border Railway.

**Friendship Gesture**
● Nepal's symbolic gesture of gifting a pair of unicorn rhinos to China, akin to "panda diplomacy."
● Signifying a symbol of enduring friendship between the two countries.

**Conclusion**
● Nepal is carefully balancing its act in its relationship with China, focusing on development projects while approaching security cooperation cautiously.
● Strengthening cross-border connectivity projects marks a significant aspect of their bilateral ties.

*Nut Graf: During Prime Minister Prachanda's visit to China, Nepal did not endorse China's Global Security Initiative but expressed support for cross-border connectivity projects, highlighting its cautious approach to security cooperation.*

## 25. The signals from this 'Made in China' smartphone story

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

**Prelims:** Deep Ultraviolet (DUV) and Extreme Ultraviolet (EUVs) lithography tools, Kirin 9000 processor

**Mains:** US-China Rivalry, Chip War between the US and China, Opportunities for India's Semiconductor Industry

**Context:**
● Huawei, a Chinese smartphone company, has launched the Mate 60 Pro, which features the Kirin 9000 processor. This processor was made using Semiconductor Manufacturing International Corp (SMIC)'s second-generation 7nm fabrication technique.
● This development demonstrates China's capability to manufacture a 7nm chip with big implications for China's strategic and commercial interests.

**What are the challenges for China's dominance in semiconductor technology?**
● The fabrication techniques used in the manufacturing of these processors are inefficient, resulting in a low wafer yield (less than 50%) compared to Taiwan (over 90%). Yield is the actual number of wafers produced to the total numbers of wafers that were put into the fabrication system. The higher the yield, the higher the productivity.
● China's process is expensive, up to 10 times the cost of other players in the market, making it uncompetitive.
● The 7nm fabrication technique represents the limit of China's capabilities with available Deep Ultraviolet (DUV) lithography tools, which are less advanced than the Extreme Ultraviolet (EUVs) tools used by the US and its allies. These tools are used to etch patterns with precision in chip design.
● The use of DUVs leads to a lower yield due to the need for multiple rounds of layering on the wafer.
● Uncertainty exists on whether Huawei-SMIC can produce the current chipsets on a large scale due to restrictions on China's access to DUVs.
● Due to the sanctions imposed by the US and its allies on China's semiconductor industry, failure to commercialize the product could impact innovation and long term competitiveness.

**Comparison of semiconductor industry in the USA and China**
● **Functional Specialization:**
   ○ The US-led ecosystem is part of the most advanced economies in the world, allowing for functional specialization. It is more distributed in nature, with different countries specializing in different aspects of the chip production process, such as EDA tools, lithography tools, specialized materials, and fabrication.
   ○ China, on the other hand, aspires to become self-sufficient in each segment of the value chain, which is highly capital-intensive and difficult to achieve. It is also relatively isolated, limiting Beijing's potential with finite resources.
● **Cost Distribution**
   ○ The US-led ecosystem can distribute costs among participating countries making it easier to compete with a larger pool of resources.
   ○ China is under pressure to perform and deliver with limited resources and in an authoritarian system, limiting the country's appetite for absorbing failures.
   ○ Innovation thrives best in a free environment, which is lacking in China's system.
● **Human Capital**
   ○ The US-led ecosystem allows for sourcing talent from diverse regions through its open immigration policy while China relies solely on its national or overseas diaspora.
   ○ Movement of human capital to China is becoming increasingly difficult due to deepening rivalry in high-tech sectors.

**Conclusion:**

China might have achieved some victories in specific areas of tech development but replicating such success across all domains and throughout the value chain is unlikely given the limitations of its isolated tech ecosystem and resource constraints.

**Nut Graf:** *China's breakthrough with the 7nm chip is a significant development in its semiconductor industry. However, China faces challenges in achieving dominance in this sector, including low wafer yields, high costs, and restrictions on access to advanced technology affecting its long-term competitiveness.*

## 26. Winds of change in the global governance

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

**Mains:** Change in the global governance

**Context:** From last year's climate change conference in Egypt to the G-20 summit in Delhi, there is a growing consensus among the world's powers that the agenda of developing countries should be given top priority

**What is the global south?**
● The term 'Global South' is believed to have been coined in the U.S. In 1969, American anti-war activist Carl Oglesby, who campaigned against what he called the oppression by 'the North' (the U.S., Europe, Russia, etc.) of the 'Global South'
● In the early 1970s, discussions around organising countries of the Global South also resulted in the setting up of the UN Office for South-South Cooperation by the UN General Assembly in 1974
● In the present times global organisations as well as powers all make their play for the Global South's participation in decision making



**Source: ResearchGate**

**Need for the emergence of the global south**
● It has around 3/4th of the global population.
● It was impacted the most due to supply chain disruptions.
● It is impacted the most due to climate change.

**Groupings for global south – G 77**
● Founded on June 15, 1964, by 77 developing nations.
● They were the original signatories of the "Joint Declaration of the Seventy-Seven Countries" declared at the end of the first session of the United Nations Conference on Trade and Development (UNCTAD) in Geneva.
● **Aim** – to ensure that the developing world's collective interests are safeguarded along with the enhancements of its negotiation capabilities in the wider United Nations system and other international forums.

**UNOSSC**
● United Nations office for South South Cooperation.
● Established by the UNGA in 1974.
● Aim – Improved multilateralism.

**Nut Graf:** *The sense that the centre of gravity of global governance has now shifted Southwards is growing, as organisations like G7, G-20, BRICS, the EU, the Shanghai Cooperation Organisation, the Quad, the Indo-Pacific Economic Forum and global players all make their play for the Global South's participation in decision making.*

## 27. Mali, Niger and Burkina Faso sign mutual defence pact

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

**Prelims:** Mali, Niger and Burkina Faso mutual defence pact

● Leaders of the military in Mali, Burkina Faso, and Niger have inked a mutual defence agreement in Bamako, Mali.
● This agreement, known as the Liptako-Gourma Charter, sets up the Alliance of Sahel States (AES) with the goal of establishing a structure for collective defence and reciprocal support.
● The agreement aims to tackle the security issues presented by the jihadist insurgency in the Liptako-Gourma area, where the borders of Mali, Burkina Faso, and Niger come together.
● It combines military and economic efforts to combat terrorism, with a priority on fighting terrorism in these three countries.
● The charter commits the signatories to assist each other militarily in the event of an attack on any of them and considers such an attack as aggression against all parties, leading to a duty of assistance, including the use of armed force to restore security.
● Additionally, it obliges the three countries to work together to prevent or resolve armed rebellions.
● The Sahel region has been grappling with jihadist violence and instability, with the insurgency spreading across Mali, Niger, and Burkina Faso since 2012, leading to coups in these nations.
● The mutual defence pact is aimed at enhancing security and stability in the region.

## 28. Quad Ministers hold talks on rules-based order, UN reform

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

**Prelims:** QUAD

**Context:** Foreign Minister of the Quad met at the fringe of the 78th session of UNGA.

**Major takeaways:**
● Commitment to a "free and open" Indo-Pacific region, where disputes are settled in accordance with international law.
● Committed itself to the principles of the UN charter and reform of the institution.
● A new initiative to help countries respond to terror attacks was also discussed.
● With respect to Ukraine was the same stance as G20 (no mention of Russia as an aggressor).
● Backed UN efforts to restart the Black Sea Grain Initiative.
● Condemned Pyongyang's "destabilizing" missile launches and pursuit of nuclear weapons.
● On Myanmar, the Quad supported a transition to an "inclusive federal democracy" and the ASEAN Five-Point Consensus.

**About the Quad**
● Quadrilateral Security Group.
● Emerged as an informal group after the 2004 tsunami.
● Idea first proposed in 2007, but Australia didn't join.
● Came into being in 2017.
● First formal summit in 2021 in Washington DC.
● Quad-Plus: Quad+ S. Korea, New Zealand, and Vietnam.
● Know more about Quad in the link.

## 29. IBSA meet seeks to amplify the Global South's voice

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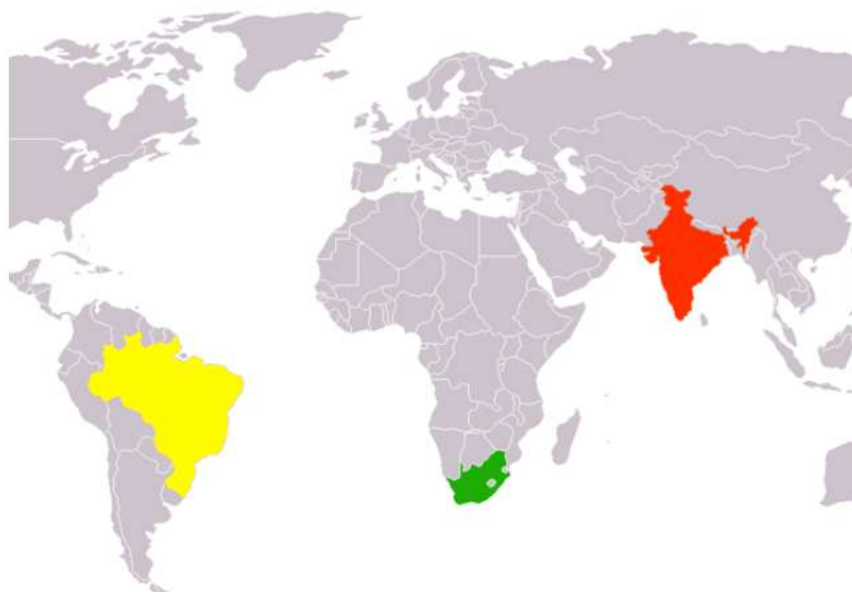
**Prelims:** IBSA

**Context**: The Indian External Affairs Minister is in New York to address the 78th session of the United Nations General Assembly (UNGA) and for plurilateral and bilateral meetings.

**Details:**

- Joint statement released on the sidelines of UNGA 78th session.
- Standalone meeting of foreign ministers in the first quarter of 2024.
- Reaffirmed stance on supporting and advancing the interests of Global South.
- Peaceful resolution of conflicts.
- UN reforms; expressed "frustration with the paralysis" of intergovernmental negotiations on UN Security Council (UNSC) reform and, more generally, comprehensive UN reform. Called for written decisions and fixed timelines.
- Agreed to push for the adoption of the Comprehensive Convention on International Terrorism at the UN, and "reaffirmed the sole authority of the UN Security Council for imposing sanctions.
- Also called for the reform of the World Bank and the International Monetary Fund and regretted that developed economies had not met their climate finance goal of $100 billion per year by 2020.

**About IBSA:**

- Formalized and named the IBSA Dialogue Forum when the Foreign Ministers of the three countries met in Brasilia on 6 June 2003 and issued the Brasilia Declaration.
- Rotational presidency; Brazil has had it since March 2023.
- 5 leadership summits held until now. The 5th IBSA Summit was held in Pretoria on 18 October 2011.
- IBSA Fund: IBSA Facility for Poverty and Hunger Alleviation. Est. March 2004; functional by 2006. Has supported over 35 developmental programs across 31 countries.
- IBSA Fellowship Program: launched Nov 2016.



**Source: ibsa-trilateral.org**

## 30. Philippines removes China's barrier in disputed shoal

**Syllabus: GS 2 – International Relations**

**Prelims: Scarborough Shoal**

- The Philippine coast guard has removed a floating barrier placed by China's coast guard in the South China Sea.
- Chinese coast guard ships erected a 300-metre-long obstruction, supported by buoys and nets when Philippine fishing vessels approached the area.
- The barrier was set up in order to stop Filipino fishing boats from accessing a contested lagoon located at Scarborough Shoal.
- Officials from the Philippines view this barrier as a breach of both international law and their nation's sovereignty.
- The Philippine Coast Guard successfully removed the barrier in a "special operation" following the order of President Ferdinand Marcos Jr.
- Philippine officials insist their actions align with international law and protect their territorial rights.
- China claims the shoal and its adjacent waters as its own territory and says the Philippine vessel trespassed without permission.
- This dispute adds to long-standing territorial conflicts in the resource-rich South China Sea, involving multiple nations, including the Philippines, Vietnam, Malaysia, Brunei, Taiwan, and China.

**31. Global dispute settlement, India and appellate review**

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

**Mains:** Provisions for Dispute Settlement at WTO, ISDS

**Context:** G-20 called for WTO reforms to ensure the dispute settlement system, especially the appellate body, becomes functional and accessible by 2024. A need to fast-track an appellate review mechanism for ISDS (Investor-State Dispute Settlements) also exists.

**Background:**
● The WTO's dispute settlement system has been dysfunctional since 2019 because the United States has blocked the appointment of appellate body members.
● The dispute settlement system is considered as the crown jewel of the WTO. It has the scope for appellate review and mechanisms to enforce rulings. It has issued over 493 rulings since its establishment in 1995.

**Investor-State Dispute Settlement Mechanism (ISDS)**
● It is a common component of the Bilateral Investment treaties. A principal means to settle international investment law disputes.
● The arbitration tribunals consist of 3 arbitrators (1 each by the 2 parties; 3rd mutually agreed upon by an international agency.)

**Issues with ISDS**
● Hundreds of ISDS tribunals operating under different arbitral institutions have, on several occasions, offered diverging interpretations of the same treaty provision.
● There is no means of appeal.
● It operates through ad hoc or one-off arbitration tribunals without any appellate review.

**Benefits of an appellate review**
● An appellate mechanism will be better than existing mechanisms such as the annulment proceedings, which only apply to arbitrations administered by the International Centre for Settlement of Investment Disputes (India is not a member).
● It will have the power to uphold, modify, or reverse the decision of a first-tier tribunal and thus bring coherence and consistency, which, in turn, will infuse predictability and certainty into the ISDS system.
● An appellate review mechanism will allow for rectifying errors of law and harmonising diverging interpretations.

**India's status**
● India has had a checkered history with ISDS, with five adverse awards: four in favor, and several pending claims.
● Supports the idea of an appellate review in the ISDS because Article 29 of the Indian model BIT talks of it.

**WTO's Dispute resolution procedure**
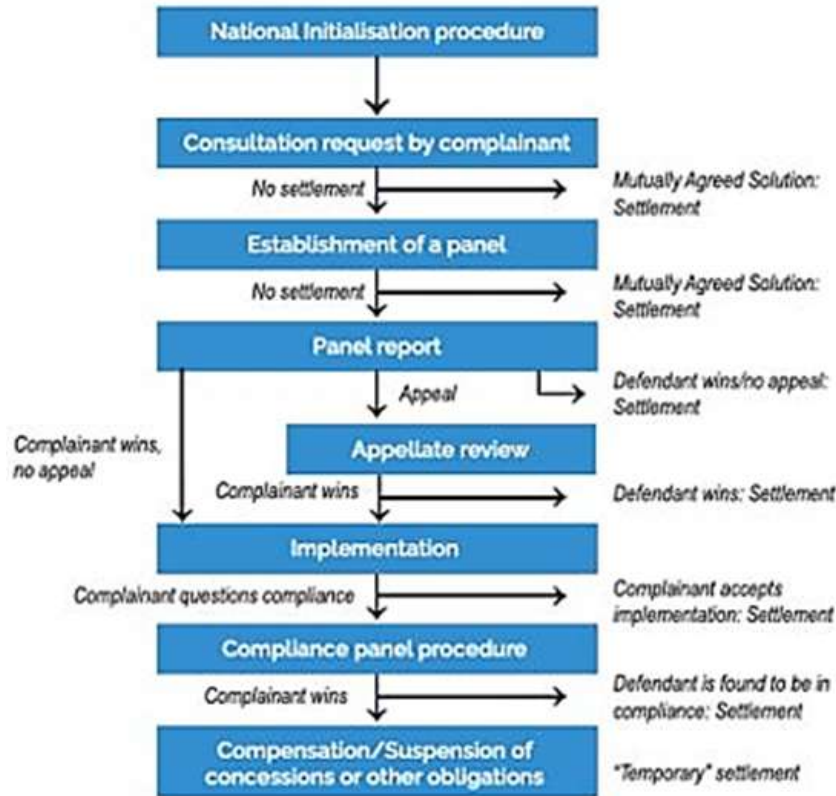


**Source: ORF**

***Nut Graf:*** *Since India's quest has always been to establish a rule-based global order, it should support an appellate review which will lead to greater confidence for states and investors in international investment law.*

# SCIENCE AND TECHNOLOGY

## 1. Somatic genetic variants

**Syllabus:** GS 3- Science and Technology

**Prelims:** Somatic genetic variants

**Context and background:** The human genome has 23 pairs of chromosomes, one inherited from each of our parents. The genome is the blueprint of our genetic makeup.
- After fertilisation, the combined single cell, with the 23 chromosomes, starts to divide, copying the genetic material over and over to nearly a trillion cells – which make up the human body.
- As the cells divide, the DNA is copied with extremely high accuracy thanks to proteins that proofread and correct errors in the DNA.
- But despite this mechanism, various studies have estimated that there is still an error rate of 0.64-0.78 mutations per billion base pairs per division. But this rate is also minuscule given the large size of the human genome.
- The number and effect of these errors vary significantly, depending on the stage of development or the point in the life-cycle at which they occur.

**'Copy - Paste' mistakes**
- An error that occurs in the DNA after birth but during development is called a somatic genetic mutation.
- Their occurrence is driven by the repeated 'copy-pasting' of the genome – which means there will be more somatic genetic mutations the older an individual is and the higher the turnover of the tissue.
- Sometimes, a somatic genetic mutation can render a cell fitter than others, which lead to the formation of tumours. So these mutations are called driver mutations.

**Influence on Human Health**
- Cancer
- Neurological disorders
- Ageing and tissue functions
- Immune system issues

**Harnessing genetic variants for human health**
- Disease biomarkers:
- Detecting specific mutations can aid in early disease detection and predicting disease progression.
- Precision Medicine
- Ageing and Longevity
- Solution for genetic diseases

**2. Aditya L1 mission**

**Syllabus:** GS-3, Achievements of Indians in science & technology; indigenization of technology and developing new technology.

**Mains:** Functioning and Purpose of Aditya L1

**Context: Aditya L1 in new orbit.** ISTRAC in Bengaluru injected the mission into an earth-bound orbit; it will stay on such orbits for 16 days.

**About Aditya L1 and the Significance of L1**

**Lagrange Point:**
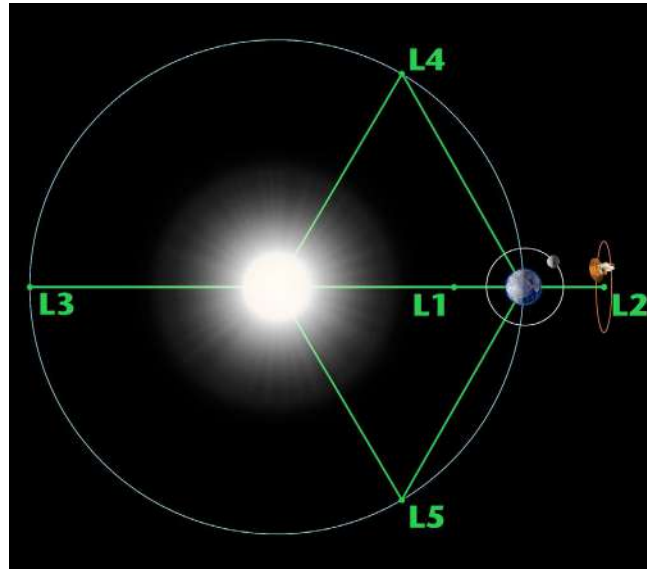


**Source: The Hindu**

- Mathematician Joseph Louis Lagrange made the discovery of L1.
- It is one of the five locations, about 1.5 million kilometres apart, where the gravitational pulls of the Sun and the Earth are equal.
- A spacecraft positioned at L1 will thus orbit the Sun at the same speed as Earth and provide a continuous view of the Sun.
- It is therefore a perfect viewing point for solar observatories that are located in space.
- The Solar and Heliospheric Observatory (SOHO), operated by the European Space Agency (ESA) and the National Aeronautics and Space Administration (NASA), is now based on the L1. SOHO monitors the Sun and its motions.
- Aditya L1 will work with this observatory to solve the Sun's dynamics' puzzles.
- Aditya L1 will serve as a weather station in orbit. These devices' data allow researchers to forecast potential geomagnetic storms and get a deeper understanding of the mechanics of space weather.

**Significance of Aditya L1 To understand climate variability**
- Sunspots can number in the hundreds while the Sun is active and are almost nonexistent during solar minima.
- The atmosphere's composition, temperature, and other factors are impacted by the absorbed energy. It is critical to understand how much fluctuation in the UV radiation that the Sun emits affects Earth's climate.
- Any unexpected emergence of bright spots, such as solar flares on the disc, will be picked up by the onboard intelligence system.
- The automated technique will cause quick photography of several levels, allowing us to create a 3D tomographic image of the Sun.
- We can learn more about the appearance, development, and energetics of transient events on the surface of the Sun in the UV area thanks to the data from Aditya L1.

**Study of Coronal Mass Ejection (CME)**

● A Coronal Mass Ejection (CME) is when a portion of the corona abruptly accelerates and shoots into interplanetary space.
● This cloud is launched at 250 km/s to 3,000 km/s and contains billions of tonnes of energetic plasma combined with a solar magnetic field.
● The only time the corona is often seen in the glare of the radiant Sun is during a total solar eclipse.
● To examine the corona, solar physicists can engineer artificial eclipses with the coronagraph, a solar telescope.
● We still don't fully grasp the process that causes the CMEs since we don't have any knowledge of the inner dynamics of the solar corona.

**Study of solar storms**

● The Sun releases a steady stream of charged particles and a variety of solar magnetic fields that flow across interplanetary space in addition to sunlight and electromagnetic radiation.
● The flow close to Earth moves at an average speed of around 300 kilometres per second and is known as solar wind.
● It constantly batters the Earth's magnetosphere, which serves as a shield and diverts most of the solar wind.
● Electrical outages and fire can ensue from magnetic-induced currents that intense geomagnetic storms can create in the electrical system and pipelines.
● Charged particle energy warms the upper atmosphere, increasing its density and adding to the drag experienced by low-earth orbiting satellites.



**Source: The Hindu**

● The Indian Space Research Organisation (ISRO) performed the first earth-bound firing to raise the orbit of Aditya-L1, India's first solar observatory mission, which was launched recently.
● The ISRO Telemetry, Tracking and Command Network Work (ISTRAC) in Bengaluru performed the manoeuvre.
● The satellite was "healthy" and operating nominally. The new orbit attained was 245 km x 22,459 km.
● After the successful launch, the ISRO said that Aditya-L1 started generating power as the solar panels were deployed.
● Aditya-L1 will stay on earth-bound orbits for 16 days, during which it will undergo five manoeuvres to gain the necessary velocity for its journey.
● Subsequently, Aditya-L1 undergoes a Trans-Lagrangian1 insertion manoeuvre, marking the beginning of its 110-day trajectory to the destination around the L1 Lagrange point.
● Upon arrival at the L1 point, another manoeuvre binds Aditya-L1 to an orbit around the L1, a balanced gravitational location between the earth and the sun.
● The satellite spends its whole mission life orbiting around L1 in an irregularly shaped orbit in a plane roughly perpendicular to the line joining the earth and the sun.

**Corona:** The corona is the outermost part of the Sun's atmosphere. The corona is about 10 million times less dense than the Sun's surface. This low density makes the corona much less bright than the surface of the Sun.
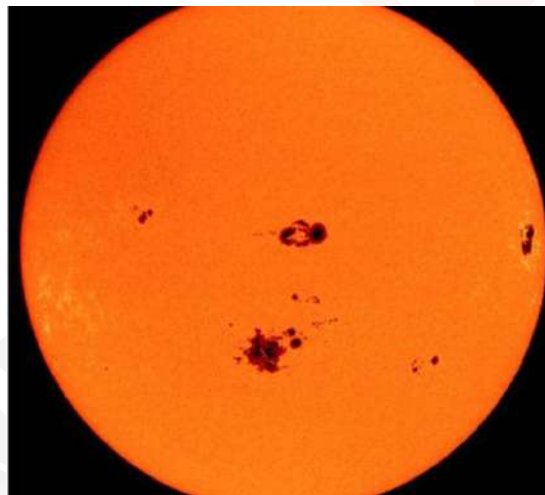
**Source: Nasa**

**Sunspots:**

Sunspots are areas where the magnetic field is about 2,500 times stronger than Earth's, much higher than anywhere else on the Sun.

Because of the strong magnetic field, the magnetic pressure increases while the surrounding atmospheric pressure decreases.



**Source: Nasa**

**Payloads**

Solar Ultraviolet Imaging Telescope (SUIT): To study the variations in UV rays. Suit will operate in the far and near ultraviolet regions, covering wavelengths of 200-400 nanometers.

● Solar Low Energy X-Ray Spectrometer (SoLEXS)
● High Energy L1 Orbiting X-Ray Spectrometer (HEL1OS)
● Visible Emission Line Coronagraph (VELC)
● Aditya Solar Wind Particle Experiment (ASPEX)
● Plasma Analyser Package for Aditya (PAPA)

**Conclusion:** Numerous spacecraft can be directly impacted by changes in space weather because of the abundance of satellites in the near-Earth environment. The effect of a solar storm on the upper atmosphere has the potential to alter the trajectory. International cooperation is needed to understand space weather, and data from Aditya L1 will help with model building and storm forecasting.

**Nut Graf:** *Aditya L1 will serve as a weather station in orbit. Space weather refers to variations in the density, velocity, and direction of the solar wind. Space weather is unfavourable as a result of solar storms.*

## 3. Democratization of Space: A global common?

**Syllabus:** GS 3- Science and Technology

**Mains:** Concept of a global common challenges and opportunities

**Context:**
- The launch & success of Chandrayaan.
- The 5th space agency to launch a solar mission.
- Been helping the developing world in their efforts to launch their satellites.
- All this is an amazing example of democratization of space: making space accessible to all.

**Global Commons**
- Global Common: A part of the planet that does not fall within the sovereignty of any nation.
- 4 global commons recognised by UN and International laws: high seas, atmosphere, Antarctica and Outer Space.
- Allows everyone to use the resources emanating from these.
- However, can lead to the tragedy of commons, which can inhibit the ability of the less developed nations to use the resources.

**Global Treaties/Initiatives on Space to ensure it stays a global common**

**Led by United Nations:**
- Outer Space Treaty (1967)
- Moon Agreement (1984)
- Liability Convention (1972)
- Registration Convention (1976)
- Resolutions on Peaceful Uses of Outer Space
- Space Sustainability Initiatives

**Non-UN Initiatives:**
- Artemis Accords
- Outer Space Code of Conduct
- International Telecommunication Union (ITU)
- Global Exploration Roadmap
- Moon Village Association
- International Partnerships and Collaborations
- Commercial Space Ventures

**How can India further contribute to this?**
- As a champion of Global South, represent the developing world, and represent the developing world in the revision of the old treaties.
- As space resource extraction becomes more plausible, we need to work towards ensuring that space does not become a victim to tragedy of commons.
- At a domestic scale: Space Policy has been declared, to promote involvement of the private sector.

## 4. Pragyan completed its tasks; rover safely parked and set into sleep mode, says ISRO

**Syllabus:** GS 3- Science and Technology

**Prelims:** Pragyan and Vikram Lander

- The Indian Space Research Organisation (ISRO) announced that Chandrayaan-3's rover, **Pragyan**, had finished its tasks and was safely parked and put into sleep mode.
- The rover's Alpha Particle X-ray Spectrometer (APXS) and Laser-Induced Breakdown Spectroscope (LIBS) have been switched off, and data from them has been sent back to Earth through the lander.
- APXS is developed by Ahmedabad's Physical Research Laboratory (PRL). It is used for analysis of the elemental composition of soil and rocks on the surface of planetary bodies having little atmosphere like the Moon. The instrument has radioactive sources which emit alpha particles and X-rays onto the surface sample to perform the analysis.

- On the other hand, LIBS instruments are developed at the Laboratory for Electro-Optics Systems (LEOS)/ISRO, Bengaluru.
- APXS and LIBS systems had earlier confirmed the presence of Sulphur on the surface of the moon.
- The rover's battery is fully charged, and its solar panel is positioned to receive sunlight when the next sunrise occurs on September 22.
- ISRO expressed hope for a successful awakening for further missions or else the rover would remain on the Moon as India's lunar ambassador.
- The rover has traveled over 100 meters from the lander Vikram across the lunar surface.

**Vikram Lander**
- Vikram, the lander of Chandrayaan-3, was put into sleep mode by ISRO.
- Prior to that, Vikram successfully conducted a hop experiment, elevating itself by about 40 cm and landing safely at a distance of 30-40 cm, which is a significant milestone for future lunar missions.
- In-situ experiments were carried out by ChaSTE, RAMBHALP, and ILSA payloads on the lander before sleep mode activation, and the collected data was sent back to Earth.
- Lander receivers were kept on, while payloads were switched off.
- Pragyan, the rover, had already completed its assignments and was set into sleep mode, with its receiver still active.
- Vikram and Pragyan are expected to wake up on September 22, 2023, once solar power is depleted and their batteries are drained.
- The lander and rover have a mission life of one lunar day (14 Earth days) to conduct scientific experiments on the lunar surface.
- The successful hop experiment and kick-start have implications for future lunar missions, including sample return missions and human missions.
- NASA's Surveyor 6 in 1967 was the first spacecraft to conduct a lunar hop, lifting off from the lunar surface and landing a short distance away.

## 5. Hubble constant

**Syllabus:** General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology, bio-technology

**Mains:** Key findings and developments in the field of astrophysics and cosmology.

**Prelims:** About Hubble constant

**Context:**
The article discusses the challenges in determining the Hubble constant, a key parameter in cosmology, and introduces a new method utilising lensed gravitational waves for more accurate measurements.

**The Big Bang and Cosmic Expansion**
- About 13.8 billion years ago, the universe began with the Big Bang, expanding and cooling over time.
- Initially, it expanded rapidly before slowing down, but around 5-6 billion years ago, dark energy caused it to accelerate again, a discovery confirmed in 1998.

**Hubble's Law and the Hubble Constant**
- American astronomer Edwin Hubble formulated Hubble's law, which describes the universe's expansion.
- The precise rate of this expansion, known as the Hubble constant, remains a challenge in cosmology.

**A New Approach to Determine the Hubble Constant**
- Researchers from ICTS Bengaluru, IUCAA Pune, and UCSB propose a novel method to calculate the Hubble constant.
- This method offers independent measurements of cosmological parameters and has the potential to resolve existing discrepancies.

**Traditional Hubble Constant Measurement Methods**
- Scientists have used three conventional methods to calculate the Hubble constant: comparing supernova brightness, studying cosmic microwave background (CMB), and observing gravitational waves.

**Discrepancies and Evolution of the Hubble Constant**
- These methods yield different values for the Hubble constant, which may be due to methodological errors or the possibility that the Hubble constant evolves over time.

**Lensed Gravitational Waves**
- Gravitational waves, similar to light, can be lensed by massive objects, offering a new way to measure the Hubble constant.
- Upcoming gravitational-wave detectors are expected to detect thousands of lensed gravitational waves, making this method promising.

**Independent Hubble Constant Estimation**
- This method allows for independent estimation of the Hubble constant during different stages of the universe's expansion.
- It could also be utilized to determine other cosmological parameters, such as matter density.

**Expert Opinions**
- Astrophysicists acknowledge the significance of using gravitational waves for cosmological measurements.
- Challenges include addressing the signal-to-noise ratio in identifying the source of gravitational waves and exploring other potential applications, including research on dark matter.

*Nut Graf: Scientists are exploring a novel method involving lensed gravitational waves to calculate the elusive Hubble constant, aiming to address discrepancies and provide independent cosmological measurements, potentially reshaping our understanding of the universe's expansion.*

## 6. Genetic engineering gives mosquito control an upgrade

**Syllabus:** General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology, bio-technology. Recent developments and their applications and effects in everyday life

**Mains:** Genetic engineering, gene-drive technology, and their applications in controlling mosquito populations.

**Prelims:** About Genetic engineering and gene-drive technology.

**Context**
Mosquitoes, as persistent disease vectors, have posed significant health challenges throughout history. This note explores genetic manipulation as a modern tool in the ongoing battle against mosquito-borne diseases.

**Introduction**
- Mosquitoes have been a persistent nuisance throughout human history, causing irritation and transmitting deadly diseases.
- Early evidence of mosquito-borne diseases dates back to ancient Egypt.
- Apart from malaria, mosquitoes transmit diseases like dengue, Zika, lymphatic filariasis, and yellow fever.

**Challenges in Mosquito Control**
- Urbanization and climate change have led to a surge in mosquito-borne illnesses.
- Mosquito control methods include mosquito nets, insecticides, and the use of symbionts like Wolbachia.
- Insecticide resistance in mosquitoes is rising, necessitating new approaches.

**Genome Sequencing and Manipulation**
- Advancements in next-generation sequencing techniques provide access to mosquito genome sequences.
- High-quality reference genomes for Anopheles stephensi have been prepared.
- Genetic manipulation aims to control mosquito populations by interfering with their reproduction.

**Gene Drive Technology**
- Gene-drive technology forces mosquitoes to inherit specific genes, disrupting normal inheritance patterns.
- The technology was conceived by Austin Burt in 2003.
- Various gene-drive versions reduce mosquito reproductive capabilities or render them sterile, preventing malaria transmission.

**Recent Advances**
● Researchers enhanced a gene in mosquitoes to secrete antimicrobial substances, disrupting Plasmodium parasite development.
● Computational modeling suggests this approach could significantly disrupt malaria transmission.

**Genetically Modified Mosquitoes in the Field:**
● The U.S. Environmental Protection Agency authorized the release of genetically modified mosquitoes in Florida and Texas.
● Genetically modified male mosquitoes mate with females, but a self-limiting gene prevents female offspring from surviving.
● Trials in India, Brazil, and Panama showed promising reductions in mosquito populations and dengue incidence.

**Benefits and Risks**
● Drastic mosquito population reduction may impact food chains and ecosystems.
● Unforeseen ecological disruptions and gene spread beyond target populations are concerns.
● Policymakers face dilemmas in making decisions that affect individuals, communities, and populations.

**Challenges and Regulations**
● Critics express concerns about unintended consequences and ecological disruptions.
● Data collection, monitoring, and stakeholder discussions are essential.
● The Department of Biotechnology in India released guidelines for genetically engineered insects.

***Nut Graf:*** *Amid rising mosquito-borne diseases and insecticide resistance, genetic manipulation of mosquitoes, including gene drive technology, offers hope and controversy in controlling these disease vectors, with potential benefits and ecological risks.*

## 7. Nipah Virus Disease

**Syllabus:** Recent developments and their applications and effects in everyday life. General awareness in the field of biotechnology.

**Mains:** Nipah virus outbreak and its transmission dynamics.

**Context**
Kozhikode, Kerala, confirmed the third Nipah virus case, raising the total to five. Contact tracing and restrictions are in place, and monoclonal antibodies are expected.

**Nipah outbreak in Kerala**
● **Current Status**
  ○ Nipah infection has emerged for the third time in Kozhikode district, Kerala.
  ○ The number of confirmed cases has risen to five, including a healthcare worker from a private hospital, who tested positive recently.
● **Contact Tracing and Surveillance**
  ○ The State Health Department has swiftly initiated contact tracing efforts.
  ○ A contact list comprising 789 individuals connected to the two deceased and two infected patients is being actively monitored.
  ○ A comprehensive 'route map' detailing the travel history of the deceased individuals since the onset of symptoms has been released.
● **Preventive Measures**
  ○ The government has imposed restrictions on large gatherings and events in Kozhikode until September end to prevent further spread.
  ○ Health authorities are actively monitoring and preparing for the distribution of monoclonal antibodies for potential treatment, expected to be available shortly.
● **Strain and Mortality Information**
  ○ The Health Minister has confirmed that the cases are linked to the Bangladesh strain of Nipah, which is known to have a high mortality rate of 70%.
● **Containment Efforts**
  ○ To control the spread of the virus, nine gram panchayats in the district have been declared as containment zones.

**Ecological dynamics of Nipah virus**

**Persistent Nipah Outbreaks in Kerala**
● In 2019, the Nipah virus (NiV) reemerged in Kerala, with experts warning of potential annual outbreaks due to the presence of the Pteropus medius bat species, known as the key reservoir of NiV in the state.
● Kerala has faced its fourth Nipah outbreak but has not invested in disease epidemiology, hindering preparedness for this zoonotic infection with a high case fatality rate.
● Except for a single case in Ernakulam in 2019, all other outbreaks have occurred in Kozhikode, often in nearby locations.
● The recurring question is why these virus spillover events continue to happen in the same Kozhikode belt despite the widespread presence of Pteropus bats everywhere.

**Lack of Understanding and Preparation**
● The state lacks clarity on how and when the virus spillover occurs and the possible transmission routes.
● Uncertainty surrounds how the index case contracted the virus during each outbreak.
● One hypothesis is that humans could contract the virus by consuming fruits contaminated by bat saliva.
● To address these uncertainties, experts emphasise the need for systematic surveillance of bat species, ecological studies on NiV dynamics, and epidemiological investigations into spillover transmission to humans.

**Shift in Health System Priorities**
● After each Nipah outbreak subsides, the health system's priorities shift, and research takes a back seat.
● Previous assumptions that outbreaks coincided with the bat breeding season (from December to May) are being challenged, as outbreaks have occurred in September (2021) and August.

**Expert Insights**
● Experts underscore the importance of systematic bat species surveillance and studies on NiV ecological dynamics and spillover epidemiology.
● Experts also highlight the uncertainty surrounding seasonality predictions for Nipah outbreaks, given the changing patterns observed in recent cases.

***Nut Graf:*** *Kerala grapples with its fourth Nipah outbreak while neglecting vital disease epidemiology. Experts call for bat surveillance, ecological studies, and spillover transmission research as recurring outbreaks defy predictions.*

## 8. Monoclonal antibodies

**Syllabus:** GS 3- Science and Technology

**Prelims:** Monoclonal antibodies

**Introduction**
● India reached out to Australia for monoclonal antibodies to tackle the Nipah virus outbreak in Kerala.
● The Indian Council of Medical Research (ICMR) anticipates receiving 20 doses soon.
● In the Kozhikode district, the Nipah virus has claimed two lives and infected five others.
● Remarkably, this marks Kerala's fourth Nipah outbreak since 2018.
● It's important to note that, as of now, no one in India has received these antibodies because they are most effective when administered early in the infection.

**Understanding Monoclonal Antibodies**
● Monoclonal antibodies are laboratory-engineered proteins that mimic the immune system's natural antibodies, safeguarding against diseases and foreign invaders.
● These antibodies attach themselves to specific antigens, typically disease-causing molecules, helping the immune system eradicate them.
● They are custom-designed to target particular antigens, a breakthrough for which the Nobel Prize in Medicine was awarded in 1984.

**Meet m102.4: A Powerful Monoclonal Antibody**

- m102.4 is a "potent, fully human" monoclonal antibody that effectively neutralises both Hendra and Nipah viruses, both within and outside living organisms.
- m102.4 has successfully passed phase-one clinical trials, where it was tested with a small group of individuals to determine the right treatment dosage that doesn't cause side effects.
- Currently, this antibody is used on a 'compassionate use' basis, meaning it's administered under strict conditions when no authorised alternatives are available, and patients can't participate in clinical trials.
- Dr. Christopher Broder and his team at the Uniformed Services University of the Health Sciences (USU) in Bethesda, Maryland, developed m102.4 with support from the U.S. National Institutes of Health (NIH).

**How Monoclonal Antibodies Function**

- These antibodies are meticulously engineered to target specific diseases by binding to their unique antigens, usually proteins.
- A prime example is the successful development of monoclonal antibodies during the COVID-19 pandemic, which were engineered to bind to the spike protein of the SARS-CoV-2 virus, preventing it from infecting other cells.
- The technology for producing hybridoma cells, a fusion of B cells (which produce antibodies) and myeloma cells (abnormal plasma cells), was first established by Dr. Köhler and Dr. Milstein in 1975. This advancement allowed for the creation of monoclonal antibodies.
- Today, these antibodies are produced using recombinant DNA technology.

**Targeting the Nipah Virus with m102.4**

- Glycoproteins are significant components of viruses causing diseases in humans.
- Research indicates that m102.4 monoclonal antibody binds to the immunodominant receptor-binding glycoprotein of the Nipah virus, potentially neutralizing it.

**Insights from Phase One Clinical Trial**

- A successful clinical safety trial was conducted involving 40 volunteers between March 2015 and June 2016 for monoclonal antibody m102.4.
- Dr. Geoffrey Playford from Princess Alexandra Hospital in Brisbane, Australia, led this groundbreaking study, which was the first human trial to assess the safety, tolerability, and immunogenicity of m102.4.
- It was a double-blind study, meaning neither participants nor researchers knew who received the antibody or the placebo.
- There were no deaths or severe adverse effects that would have necessitated discontinuing the study.
- The results affirmed that both single and repeated doses of m102.4 were well-tolerated and safe, with no adverse responses from participants' immune systems.
- The monoclonal antibody m102.4 used in Dr. Playford's clinical trial was manufactured by the Australian Institute for Bioengineering and Nanotechnology.

**Regulatory Status and Future Prospects**

- Dr. Bahl from ICMR noted that there were no immediate avenues for further research after the initial phase of the trial.
- Notably, m102.4 has been available since 2010 in Queensland for treating Hendra virus infections and has been shared by USU and the Henry M. Jackson Foundation for the Advancement of Military Medicine.
- Both Hendra and Nipah viruses belong to the bat-borne Paramyxoviridae family, which contains single-strand RNA of negative-sense genome, akin to viruses causing diseases like measles and influenza, replicating within infected cells.

**Conclusion**

- India's proactive approach in procuring monoclonal antibodies, especially m102.4, represents a promising step in combating the Nipah virus outbreak.
- These antibodies, designed to target specific antigens, hold the potential to mitigate the impact of this recurring and dangerous virus.

## 9. Taking a giant leap for a new ethics in outer space

**Syllabus:** GS-3, Awareness in the fields of Space, Achievements of Indians in Science & Technology; Indigenization of Technology and Developing New Technology.

**Mains:** Need for new space treaty in the backdrop of ongoing space race

**Context:** There is a renewed global interest in lunar exploration, with various countries and private entities aiming to land missions on the Moon. However, this surge in lunar exploration also raises concerns about the potential for an arms race in outer space, where nations compete to establish dominance or military superiority beyond Earth's atmosphere.

### History of Antarctica:
- In the early 20th century, a historic race to reach the South Pole unfolded between two prominent explorers, Robert Scott and Roald Amundsen. Amundsen's successful expedition led to Norway's claim over a significant portion of Antarctica. This race for exploration triggered the interests of several nations, including Britain, which asserted territorial claims on Antarctica.
- To address the growing concerns of territorial disputes and the possibility of Cold War rivalry extending to Antarctica, the Antarctic Treaty was negotiated in 1959.
- **Antarctic Treaty:** This treaty aimed to ensure the peaceful use of the continent, promote scientific research, and prevent activities that could harm its fragile environment. Notably, it prohibited nuclear testing, military operations, economic exploitation, and the establishment of further territorial claims. Know more about the Antarctic Treaty in the link.

### Regulation and Antarctica's well-being:
- The Antarctic Treaty has proven successful in regulating activities on the continent. Currently, there are 54 parties to the treaty, with 29 having consultative status. Robust monitoring systems are in place to oversee the activities of the countries present in Antarctica, ensuring the preservation of its ecological integrity.
- However, despite these regulatory efforts, questions persist regarding the sustainability of Antarctica's environment.
- The presence of numerous research stations and a substantial population during the summer months, as well as a smaller winter population, has raised concerns about the potential impacts of human activities on this delicate ecosystem. It forces us to consider whether the scientific research conducted in Antarctica justifies the ecological footprint it leaves behind.

### Is Moon the new Antarctica?
- Drawing parallels between the historical race to reach the South Pole and the current race for lunar exploration, there is a need to apply the lessons learned from Antarctica to outer space. It underscores the importance of preserving outer space as a domain for peaceful purposes and international scientific collaboration.
- **The Moon Agreement**, adopted by the UN General Assembly in 1979, reflects similar principles to the Antarctic Treaty. It emphasizes the peaceful use of the moon, the protection of its environment, and the notion that lunar resources are the common heritage of mankind.

### Way forward:
- As a pioneer in lunar exploration, India should adopt a mature policy regarding its lunar plans. India's role should be one of leadership in shaping the future of the moon, advocating for the moon's status as a partner rather than property.
- The focus should be on promoting collaboration in scientific endeavours and maintaining outer space as a realm dedicated to peaceful and cooperative activities.
- To further this vision, the development of a declaration outlining the fundamental rights of outer space. Such a declaration would establish a new ethical framework for human activities in space, placing a strong emphasis on the non-militarization of outer space. In doing so, the Outer Space Treaty and the Moon Agreement would not only align with the latest advancements in space missions but also uphold a moral compass guiding humanity's actions in the cosmos.
- This approach ensures that outer space, like Antarctica, is treated as the common heritage of all and not subject to territorial claims or domination by any single entity.

*Nut Graf: In an era marked by a renewed race for lunar exploration, we can draw compelling parallels with the historic race to reach Antarctica's South Pole. It underscores the importance of safeguarding outer space as a realm for peaceful collaboration, drawing inspiration from the Antarctic Treaty.*

## 10. Oldest yet fossils of a plant eating dinosaur found in Rajasthan

**Syllabus:** GS 3- Science and Technology

**Prelims:** Evolution

**Discovery of Tharosaurus Indicus**
- Researchers from IIT Roorkee identified dinosaur fossils in India's Thar desert.
- The fossils belong to a sauropod dinosaur called Tharosaurus indicus, a member of the Dicraeosauridae family and Diplodocoidea superfamily.
- These fossils, which are 167 million years old, are the world's oldest known diplodocoid fossils.

**Unique Dinosaur Characteristics**
- Dicraeosauridae sauropods like Tharosaurus were smaller with shorter necks and tails compared to other long-necked sauropods.
- Sauropods, in general, were massive, growing over a hundred feet in length, making them one of the largest dinosaur groups.
- India had few sauropod fossils from the Middle Jurassic period, creating a paleontological mystery.

**Ancient Indian Landmass Significance**
- India's geological position as part of Gondwanaland, 167 million years ago is crucial.
- The scientists believe Tharosaurus may have originated in India and migrated to other continents.
- The fact that other continents have younger diplodocoid fossils supports this theory, suggesting India played a vital role in sauropod evolution.

**Importance of More Fossils**
- While the discovery is significant, it's based on partial dinosaur remains.
- Additional fossils, especially from different parts of Tharosaurus or related skeletons, are needed to understand sauropod evolution better.
- More paleontological exploration and investment in India are necessary due to the country's rich fossil wealth.

**Rare Indian Dinosaur Discoveries**
- Indian dinosaurs are rare due to limited paleontological interest and investment compared to other countries.
- The lack of natural history museums in India emphasises the need for more attention to paleontological discoveries.
- The discovery of Tharosaurus indicus highlights the potential for Middle Jurassic dinosaur findings in India.

**Nut Graf:** *Researchers unearthed Tharosaurus indicus, shedding light on India's pivotal role in sauropod evolution and emphasising the need for more paleontological exploration in the country.*

**11. Osiris-Rex mission to Bennu asteroid**

**Syllabus:** GS 3- Science and Technology

**Prelims:** NASA's Osiris-Rex mission

**Introduction**
- NASA's Osiris-Rex mission successfully returned with asteroid samples after a seven-year journey.
- The capsule parachuted into the Utah desert after releasing from the spacecraft during a flyby of Earth.

**The Sample Collection**
- Osiris-Rex released the sample capsule from a distance of one lakh kilometres (about 62,000 miles) from Earth.
- The small capsule landed on remote military land approximately four hours later.
- The mothership continued its mission to another asteroid.

**Successful Landing**
- Flight Control announced the successful touchdown of the capsule, which arrived a few minutes earlier than expected.
- Scientists approximate that the capsule holds a minimum of one cup's worth of substance from the carbon-rich asteroid known as Bennu.
- The exact contents will be determined once the container is opened.

**Challenges During Collection**
- During the collection process three years ago, excess material led to spillage and drifting, resulting in the container's lid getting stuck due to jammed rocks.
- Japan is the only other nation to have effectively brought back asteroid samples, having gathered approximately a teaspoon's worth through two missions.

**Significance of Samples**
- The pebbles and dust retrieved represent the largest haul from beyond the moon.
- These preserved building blocks from 4.5 billion years ago will aid scientists in understanding the formation of Earth and life in our solar system.

**12. Newly minted NRF has a chance to bridge India's science, society gap**

**Syllabus:**

Recent developments and their applications and effects in everyday life, Indigenisation of technology and developing new technology. Government policies and interventions aimed at development of science and technology.

**Mains:** Government initiatives for scientific research- National Research Foundation (NRF)

**Prelims:** About National Research Foundation (NRF)

**Context**

The article explores the establishment of India's National Research Foundation (NRF) and the ongoing debate about its funding philosophy, emphasising the need for research aligned with societal challenges.

**Introduction**

- The National Research Foundation (NRF) is a recently approved research funding agency in India.
- It has a budget of ₹50,000 crores over five years.
- NRF aims to boost research and innovation by providing funding, streamlining processes, and fostering collaboration between academia, industry, society, and government.

**Debates on Research Funding Rationales**

- Scientists are discussing what kind of research NRF should fund to yield innovative solutions to practical challenges.
- One viewpoint emphasises that research should not be prescriptive but driven by curiosity, as discoveries often emerge unexpectedly.
- Another perspective stresses the importance of collaboration between scholars, industries, and government from the outset of problem-solving.
- Some experts highlight involving societal stakeholders in defining research directions for science, technology, and innovation (STI).

**The 'Curiosity-Driven' Argument**

- This argument, based on Vannevar Bush's 1945 paper, suggests that innovation should be driven by "the free play of free intellects" following curiosity.
- It assumes that new knowledge naturally leads to technological advances and economic growth.
- Examples include genome sequencing and medical diagnostics.

**Challenging the 'Curiosity-Driven' Notion**

- Daniel Sarewitz's 2016 essay argues that many key inventions in the U.S. were driven by the technological demands of the Department of Defense (DOD) rather than curiosity.
- DOD investments influenced the development of computers and computer science, leading to innovations like the World Wide Web.
- Even the discovery of penicillin had a target-driven effort and industrial involvement.

**The Emergence of New Innovation Models**

- The 'national innovation system' model, popularised in the 1980s, emphasises interconnectedness, learning, and entrepreneurship.
- Japan and South Korea's economic growth is attributed to such systems.
- A third model focuses on sustainability and societal transformation, involving citizen science and stakeholder participation.
    - Denmark's wind power success is an example of this model.

**Revisiting India's STI Policies**

● Historically, India has favoured the 'pipeline model,' letting curiosity guide STI.
● NRF offers an opportunity to reconsider this model and explore newer approaches.
● The emphasis now shifts towards innovation driven by social challenges and stakeholder participation for a more just and sustainable future.

**Conclusion**

● The NRF's establishment marks a pivotal moment for India to reshape its STI policies and embrace innovative models that address societal challenges, ensuring a more sustainable and inclusive future.

***Nut Graf:*** *As India launches the National Research Foundation (NRF) with a substantial budget, discussions arise on whether research should be curiosity-driven or problem-focused, reflecting a shift towards collaborative and impactful innovation models.*

**13. Dhanush guns**

**Syllabus:** Recent developments and their applications and effects in everyday life, Indigenisation of technology and developing new technology. Government policies and interventions aimed at development of science and technology.

**Prelims:** Dhanush guns

● The Indian Army has placed an order for 114 Dhanush artillery guns and currently has one operational regiment.

● The delays in the Dhanush project have been resolved, and the Army aims to equip balance regiments by 2026.

● **Dhanush:**
  ○ Dhanush is a towed artillery gun with a calibre of 155mm and a range of 36 km (which can be extended to 38 km with specialised ammunition).
  ○ It is an upgrade of the existing 155mm, 39-calibre Bofors FH 77 gun.
  ○ The Advanced Weapons and Equipment India Ltd., responsible for manufacturing Dhanush guns, is working closely with the Army.

● **Pinaka:**
  ○ The Army is focusing on increasing the range and configurations of Pinaka Multi-Rocket Launch Systems (MRLS).
  ○ The original Pinaka rockets had a range of 37 km, which was enhanced to 45 km with the upgraded Mk-1 version.
  ○ The Defence Acquisition Council has given its approval for the procurement of the guided Pinaka rocket system, which boasts a range of 75 km.
  ○ Additionally, a Pinaka rocket system designed for Area Denial Munition has been successfully developed.
  ○ DRDO is working on a Pinaka with a range of 120 km, as previously stated by officials.
  ○ At present the Army currently possesses four Pinaka regiments

● The Pralay surface-to-surface quasi-ballistic missile is in advanced stages of induction.

# 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

## Weekly Updates

**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"

# DEFENCE AND INTERNAL SECURITY

## 1. Spotlighting another border point, the 'rogue channel'

**Syllabus:** GS-3, Security Challenges and their Management in Border Areas – Linkages of Organized Crime with Terrorism.

**Prelims:** Harami Nala, Border Security Force (BSF), Sir Creek area, The Mooring Place project, Chidiya Mod-Barbet Link Road

**Mains:** BSF's role in the management of border areas, Threats to Internal Security from the Sir Creek region

### Context:
- The Union Home Minister visited "Harami Nala" and Border Observation Posts (BOPs) of the Border Security Force (BSF) in the Sir Creek area of Kutch, Gujarat, along the India-Pakistan international border.
- Harami Nala is known for its inhospitable conditions and has been a hotspot for cross-border mischief and exploitation by infiltrators.

### About Harami Nala
- Harami Nala is a natural water body approximately 25 kilometres long that flows west to east from Pakistan into Kutch, south of the Vighakot sector.
- The channel is flanked by vast marshy mudflats that are affected by low and high tides.
- About 22 odd kilometres of the channel lie on the Indian side of the "vertical line" of the IB between India and Pakistan, which is not contested.
- Tidal waters surge from the Pakistani side and extend further on the Indian side.
- Chini-Bandh (China Bund) on the Pakistani side prevents tidal waters from inundating areas.
- It is extremely rich in fishing, especially prawns.
- Temperatures reach above 50° Celsius in summer.
- Pakistani fishing boats try to enter the Harami Nala on the Indian side, drawn by the possibilities of better fish catch.
- Marshy terrain makes it impossible to approach or patrol on foot by the Indian security agencies during low tide.
- The Indian side is mostly empty over the entire spread of the Harami Nala except for factories producing salt, bromide, and other chemicals.

### Efforts being made for improved surveillance in the region?
- The Mooring Place project has an allocated budget of ₹257 crore and will allow for the berthing, repairs, and maintenance of bigger vessels, including floating BOPs, thereby enhancing the BSF's capabilities in the Creek area. The foundation stone for the same in Kutch was laid.
- Inauguration of the newly constructed Chidiya Mod-Barbet Link Road and observation post (OP) Tower in the Harami Nala area.
- The observation post tower is fitted with state-of-the-art high-resolution pan-tilt-zoom cameras, along the "vertical line" of the International Border (IB) with Pakistan, offering real-time visual monitoring and constant vigilance over the regions adjacent to Harami Nala.
- These initiatives are part of the Prime Minister's vision of a "secure border".
- The entry point of the Harami Nala on the Indian side was previously difficult to access due to lack of infrastructure, but the procurement of all-terrain vehicles (ATVs) and special scaffolding on the bank of the channel has improved the situation, allowing BSF personnel to more easily launch small patrol boats into the channel.
- Embankments and road infrastructure along the "vertical line" of the IB have enabled new observation posts to come up, allowing for better surveillance and control of infiltration attempts.

### Conclusion:
- BSF is facing new challenges in the form of drones and unmanned aerial vehicles (UAVs) being used by terrorists and criminals to smuggle weapons and narcotics across the border. The visit by the Home Minister will boost the morale of BSF personnel and demonstrate the government's commitment to supporting them in their efforts to secure the border.

**Nut Graf:** *The construction of embankments and roads along the "vertical line" of the IB has made it easier for the BSF to monitor and control the movement of people and goods across the border. The recent visit by the Home Minister also highlights the strategic importance of the BSF's role in securing the India-Pakistan border and the need for continued support and investment in the force's infrastructure and capabilities.*

## 2. Indian Navy's Swavlamban 2.0

**Syllabus:** GS-3, Security Challenges and their Management in Border Areas

**Prelims:** Swavlamban 2.0

- The Indian Navy will release its updated indigenisation roadmap called 'Swavlamban 2.0' in the first week of October 2023.
- The purpose of 'Swavlamban 2.0' is to report achievements and future plans.
- In 2022, the Navy committed to developing 75 technologies as part of Azadi ka Amrit Mahotsav, and this goal has been met and even exceeded.
- These technologies meet world-class standards and are cost-effective because they are made in India.
- The achievement was primarily through initiatives like SPRINT, the Naval Innovation and Indigenisation Organisation, and the Technology Development Acceleration Cell.
- The Swavlamban road map's goal is to collaborate, coordinate, and develop new technologies through partnerships.
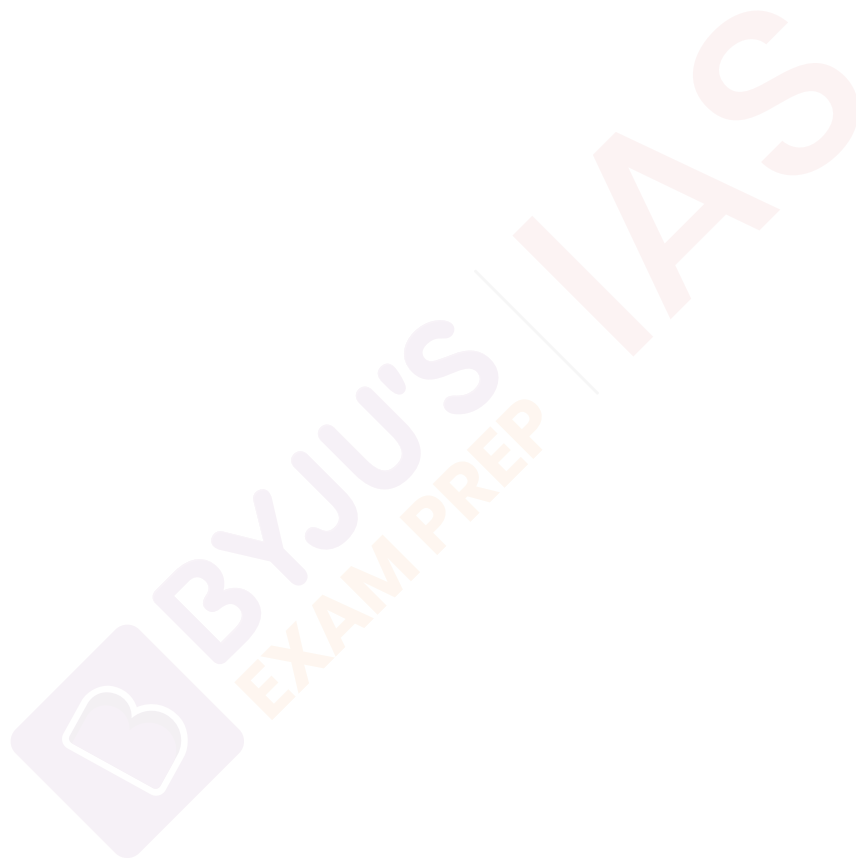
# ENVIRONMENT AND ECOLOGY

## 1. Elephant Corridor of India report

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Prelims:** Elephant Corridor of India report

**Context:** Recently, the Elephant Corridor Report 2023 was released by the Ministry of Environment.

**Details:**
- **New Corridors:** Centre has identified over 60 new corridors used by elephants for movement between two habitats, taking the total number of identified passages across the country to 150. Previously there were 88 Elephant Corridors. West Bengal has the highest number (26) of identified elephant corridors in India, accounting for over 17% of all the passages.
- **Corridor Mapping:** The report mapped 150 elephant corridors in 15 states, categorizing them into four geographic regions: northern, northeast, east-central, and southern. About 84% (126) of the identified elephant corridors occur within the state boundaries. About 13% (19) are interstate elephant corridors that extend into two or more states. There were six transnational corridors between India and Nepal.
- **Increase in Elephant Movement:** Approximately 40% of mapped corridors have seen an increase in elephant movement, with some regions showing stability.
- **Expansion of Elephant Ranges:** Elephants have expanded their ranges in regions like Vidarbha, southern Maharashtra, Madhya Pradesh, and northern Andhra Pradesh.
- **Corridor Impairment:** Despite habitat rejuvenation efforts, 10% of elephant corridors have become impaired over the years, due to factors like increased human activity.
- **Decline in Usage:** 29 corridors (19% of the total) have recorded a decline in elephant usage, primarily due to encroachment, mining, and infrastructure development.

**Elephant Corridor:**
- Corridor is a strip of land that facilitates the movement of elephants between two or more viable habitat patches.
- Corridors are directly beneficial in buffering wildlife populations from the perils of habitat fragmentation; they have become a cornerstone for wildlife conservation across the globe.

**Project Elephant:**
- It was launched by the Government of India in the year 1992 as a Centrally Sponsored Scheme with following objectives:
  - To protect elephants, their habitat & corridors
  - To address issues of man-animal conflict
  - Welfare of captive elephants
- The Ministry of Environment, Forest and Climate Change provides financial and technical support to major elephant range states in the country through the project.
- Conservation Status (Asian Elephant):
  - IUCN Red List: Endangered
  - CITES: Appendix I.
  - Wildlife (Protection) Act, 1972: Schedule I.

## Number of elephants in Karnataka goes up by 346 from last census, touching 6,395

According to Elephant Census-2023, Karnataka leads the country in the total number of elephants

August 09, 2023 08:18 pm | Updated August 10, 2023 04:47 pm IST

THE HINDU BUREAU

## Elephant numbers on the rise

| Year | Elephants |
|------|-----------|
| 2010 | 5740 |
| 2012 | 6072 |
| 2017 | 6049 |
| 2023 | 6395 |

## 2. India 1st carbon-negative garrison

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Mains:** Significance of India 1st carbon-negative garrison

**Context:** PUNE-based College of Military Engineering (CME) commissioned a 5-megawatt (MW) solar power plant taking its solar power generation capacity to 7 MW becoming India's first carbon negative garrison or military formation.

**Details:**
- The CME, which was established in 1948 as a premier institute of the armed forces, trains all ranks of Indian Army, Navy and Air force, including those from friendly foreign countries in various technical and tactical aspects with changing character of warfare.
- A plethora of projects has been undertaken in the recent past at CME by the Military Engineering Services (MES) through the office of Garrison Engineer (CME), Khadki, in order to reduce the institute's carbon footprint.
- The biggest project is implementation of the 7-MW solar power plant in CME in two phases.
- The carbon negative refers to an entity emitting less than zero carbon dioxide and carbon dioxide equivalent ($CO_2e$) greenhouse gasses, effectively.
- Emitting a negative amount of carbon being carbon negative refers to the net emissions of the entity by offsetting more carbon, through processes like carbon capture, sequestration and avoidance, than the entity contributes to the environment.

**India's solar power initiatives**
- **Solar Park Scheme:** The Solar Park Scheme plans to build a number of solar parks, each with a capacity of nearly 500 MW, across several states.
- **Rooftop Solar Scheme:** The Rooftop Solar Scheme aims to harness solar power by installing solar panels on the roof of houses.
- **National Solar Mission:** It is a major initiative of the Government of India and State Governments to promote ecologically sustainable growth while addressing India's energy security challenge.
- **SRISTI Scheme**: Sustainable rooftop implementation of Solar transfiguration of India (SRISTI) scheme to promote rooftop solar power projects in India.
- **International Solar Alliance:** International Solar Alliance is an action-oriented, member-driven, collaborative platform for increased deployment of solar energy technologies.
- **Kisan Urja Suraksha evam Utthan Mahabhiyan (PM-KUSUM):** The PM-KUSUM scheme was launched by the Ministry of New and Renewable Energy (MNRE) to support installation of off-grid solar pumps in rural areas and reduce dependence on grid, in grid-connected areas.

**3.  Emperor penguin**

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Prelims:** Emperor penguin

**Context:** Emperor penguins' breeding cycle heavily relies on stable sea ice, where they spend their entire breeding cycle. The sea ice, present from April to December, provides the necessary platform for their breeding and fledging activities (the stage in the development of young birds when they acquire the feathers and abilities necessary for flight.).

**Details:**
●  As a result of the loss of sea ice, the penguin chicks were unable to develop their waterproof adult wings and regulate their body temperature. This led to their vulnerability to drowning or freezing to death.
●  While emperor penguins usually adapt to localized ice loss by moving to stable sites, the extensive shrinking of sea ice extent makes this strategy unfeasible.
●  This incident marked the first recorded instance of widespread breeding failure of emperor penguins across multiple colonies due to sea ice loss.

**About Emperor Penguins**
●  The emperor penguin is the tallest and heaviest of all living penguin species and is endemic to Antarctica.
●  Like all penguins, it is flightless.
●  Its diet consists primarily of fish, but also includes crustaceans.
●  While hunting, the species can remain submerged around 20 minutes.
●  It is the only penguin species that breeds during the Antarctic winter.
●  The lifespan is typically 20 years in the wild, although observations suggest that some individuals may live to 50 years of age.
●  IUCN status: Near threatened

| PENGUIN SPECIES | |
| --- | --- |
| **Genus** | **Species** |
| Crested group (*Eudyptes*) | Macaroni, Royal Fiordland, Rockhopper, Snares Crested, Erect-Crested |
| Banded group (*Spheniscus*) | Humboldt, Magellanic, African, Galapagos |
| Brush-tailed group (*Pygoscelis*) | Chinstrap, Gentoo, Adélie |
| Large group (*Aptenodytes*) | Emperor, King |
| Yellow-Eyed (*Megadyptes*) | Yellow-Eyed |
| Little (*Eudyptula*) | Little (or Fairy) |

Source: Smithsonian Institute

**Source: Down to Earth**

## 4.   State of India's Birds 2023 Report

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Prelims:** State of India's Birds 2023 Report

**Context:** State of India's Birds 2023 is a collaborative effort of 13 government and non-government organisations, including the Bombay Natural History Society (BNHS), Wildlife Institute of India (WII), and Zoological Survey of India (ZSI), Wildlife Trust of India (WTI), Worldwide Fund for Nature–India (WWF–India) etc.

### Methodology used
- Long-term trend (change over 30 years)
- Current annual trend (change over the past seven years)
- Distribution range size within India

### Key Pointers
- For the 338 species with identified long-term trends, 60% have experienced declines, 29% are stable, and 11% have shown increases.
- Among the 359 species with determined current annual trends, 39% are declining, 18% are rapidly declining, 53% are stable, and 8% are increasing.

### Positive news
- The Indian Peafowl, the national bird of India, has shown a remarkable increase in both abundance and distribution.
- This species has expanded its range into new habitats, including high-altitude Himalayan regions and rainforests in the Western Ghats.
- The Asian Koel, House Crow, Rock Pigeon, and Alexandrine Parakeet are also highlighted as species that have demonstrated a notable increase in abundance since the year 2000.

### Key pointers - The decline
- Specialists vs generalists:
- Grassland specialists have declined by more than 50%.
- Migrants vs resident birds
- **Cases:**
  - White-rumped Vultures, Indian Vultures, and Red-headed Vultures have suffered the maximum long-term declines (98%, 95%, and 91%, respectively).
  - Endemic species, unique to the Western Ghats and Sri Lanka biodiversity hotspot, have experienced rapid declines.
  - The Yellow-crowned Woodpecker, inhabiting widespread thorn and scrub forests, has declined by more than 70% in the past three decades.
  - Sarus Crane has rapidly declined over the long term.
  - While half of all bustards worldwide are threatened, the three species that breed in India – the Great Indian Bustard, the Lesser Florican, and the Bengal Florican – have been found to be most vulnerable.

### Reasons
- Decline in insect population
- Riverine sandbar-nesting birds are also declining due to multiple pressures on rivers.
- Forest Degradation, urbanization, and energy infrastructure
- Climate change
- Avian diseases
- Illegal hunting and trade

### Way Forward
- Habitat conservation and restoration
- Protected areas and reserves
- Reduction of pollution
- Mitigation of climate change
- Better research to understand the alternate food chain

## 5. What is heat index and why is it important to measure

**Syllabus:** GS 3- Environment

**Prelims:** Heat Index

### Iran's Unprecedented Heat
- In August, Iran experienced a record-breaking heat index of 70°C in its coastal region, leading to extreme conditions considered nearly unsurvivable.
- Public holidays were declared in early August due to the unprecedented heat.

### Repeat Occurrence of Extreme Heat
- This year, Iran has faced multiple instances of extreme heat, including a heat index of 66.7°C recorded in July at the Persian Gulf Airport.

### Understanding Heat Index
- The heat index, or apparent temperature, gauges how hot the weather feels to humans and is influenced by both air temperature and relative humidity.

### Calculating Heat Index
- Dr. Robert Steadman of Colorado State University developed a complex formula in 1979 to calculate the heat index, considering factors like air temperature, humidity, wind, extra radiation, and barometric pressure.
- The dew point, the temperature at which air becomes saturated with moisture and condensation occurs, is a crucial element in this calculation.

### Importance of Measuring Heat Index
- Heat index matters because higher temperatures increase the air's moisture-holding capacity, affecting how humans perceive the temperature.
- During heatwaves, humidity is often elevated, causing the heat index to surpass the actual air temperature.
- High humidity can lead to heat stress, with symptoms including elevated heart rate, heat-related exhaustion, rashes, and potential fatalities if untreated.

### Impact of High Humidity on the Body
- High humidity impedes the body's ability to dissipate excess heat through sweating and evaporation, as the air is already saturated with moisture.
- In contrast, lower humidity allows for efficient sweat evaporation, making the apparent temperature closely align with the actual air temperature.
- Thus, the heat index is a more accurate indicator of the heat's impact on humans.

### Adaptation to Extreme Heat
- A heat index exceeding 67°C poses severe risks to people and animals with prolonged exposure.
- In light of climate change, preparing for and adapting to such extreme conditions is crucial.
- Strategies may include early warning systems, adjusting work schedules, and implementing sustainable cooling solutions to safeguard health and well-being.

## 6. Invasive Alien species

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Mains:** Challenges of Invasive Alien species

**Context and background:** The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) has recently released an "Assessment Report on Invasive Alien Species and their Control."

### Findings of the report

● Presence of approximately 37,000 alien species, introduced by human activities, across various regions and biomes.
● Of these, more than 3,500 are classified as invasive alien species, posing severe threats to local ecosystems.
● About 6% of alien plants, 22% of alien invertebrates, 14% of alien vertebrates, and 11% of alien microbes are known to be invasive.
● The water hyacinth ranks as the world's most widespread invasive alien species on land.
● Lantana, a flowering shrub, and the black rat hold the second and third positions on the global invasion scale.
● 34% of the impacts of biological invasions were reported from the Americas, 31% from Europe and Central Asia, 25% from Asia and the Pacific, and about 7% from Africa
● Most devastating impact is on islands.

### Impact
● Loss of biodiversity
● Ecosystem engineers
● Phasing out of native species
● Economic impact
● Food security
● Zoonotic diseases

### Reasons for the rise in number
● Globalized trade and travel
● Climate change
● Pollution and changing settlement patterns

### International conventions
● Convention on Biological Diversity
● Convention on Migratory Species
● CITES

## 7. Fukushima N-wastewater controversy

**Syllabus:** Environment Conservation, Environmental pollution and degradation and Environmental impact assessment. Disaster Management (Laws, Acts etc.)

**Mains:** Environmental impact assessment, nuclear policy and safety

**Prelims:** Fukushima nuclear accident

### Context
Japan's plan to release Fukushima nuclear plant wastewater into the sea faces backlash over safety concerns, impacting regional politics and public perception.

### Introduction
● In April 2021, Japan announced plans to release contaminated water from the Fukushima nuclear plant into the sea.
● The wastewater, a byproduct of the 2011 earthquake and tsunami, poses a dilemma due to limited storage space and safety concerns.

**Treatment of Contaminated Water**
- Tokyo Electric Power Company (TEPCO) manages the treatment of water.
- Advanced Liquid Processing System (ALPS) removes 62 types of radioactive materials but not tritium.
- Tritium concentration is claimed to meet international standards, and its radiation is considered weak.

**Public Concerns**
- Public, both domestic and foreign, express health concerns, particularly in countries heavily reliant on seafood.
- Protests in Seoul, South Korea, and a ban on Japanese seafood by China highlight public opposition.

**Safety Concerns**
- Exposure to low-level radiation, including tritium, can harm humans and the environment.
- Tritium can pass through the placenta, potentially causing developmental issues in babies.
- The International Atomic Energy Agency (IAEA) is criticised for potentially downplaying risks.

**Rationale for Release**
- Limited storage space and risk of potential leakages leave Japan with no alternative.
- Releasing wastewater is cost-effective compared to storing it across the country.

**Regional Politics**
- Sustaining openness regarding the potential dangers and the actions being implemented has bolstered Japan's position both domestically and in terms of its international relations especially with South Korea.
- Geopolitical considerations, especially regarding China and North Korea, influence leaders' actions.

**China's Response**
- China's response is viewed within a broader geopolitical context.
- China aims to exploit tensions between South Korea and Japan but may not succeed in further dividing them.

**Future Plans**
- Japan plans a 30-year release of treated wastewater.
- Continual monitoring of seawater radiation is planned.
- Compensation for affected fishers and a revival of the nuclear power industry are part of Japan's strategy.

**Conclusion**
- The Fukushima N-wastewater controversy is a complex issue involving safety concerns, regional politics, and the challenge of balancing scientific evidence with public perception.
- Japan's efforts to address the issue include transparency and compensation measures.

**Nut Graf:** *Amidst growing opposition, Japan's decision to discharge Fukushima's treated radioactive water highlights the delicate balance between scientific safety claims and public fears, with implications for regional relations.*

## 8. Ecocides

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Prelims:** Ecocides

**Context:** Countries across the world are considering passing laws against the act of ecocides.
Mexico has become the latest country to propose a bill on this.
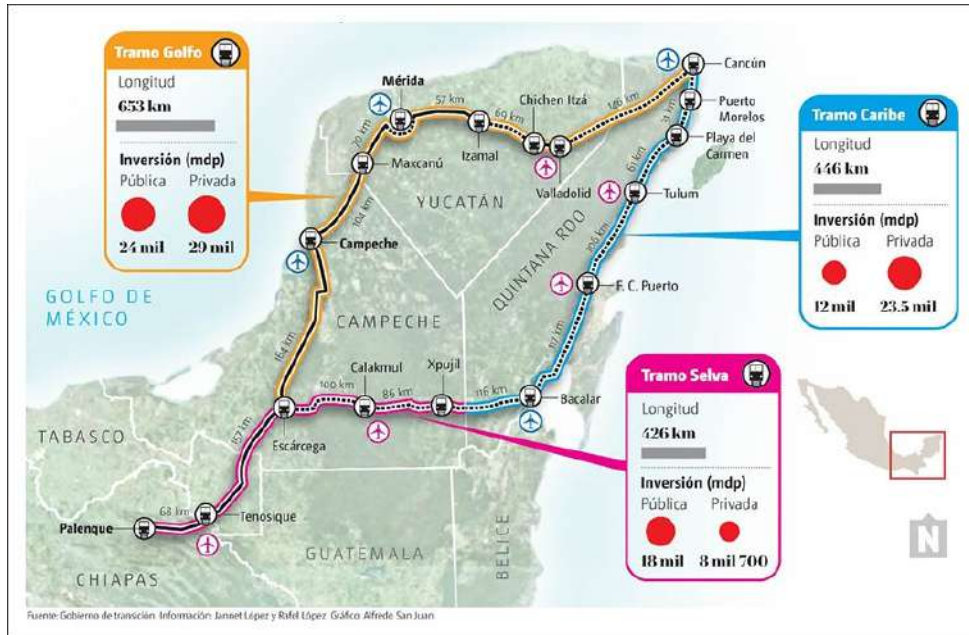


**Source: Mexico News Daily**

### What is ecocide?
● Defined in 2021.
● Mass destruction of the environment by human actions.
● Widespread, and/or long-term.
● Characterized by actions such as deforestation, pollution, contamination of water sources, and the release of harmful chemicals into the environment on a large scale.
● Problems with the definition: too wide and ambiguous

### Which countries have criminalized it?
● Damage to the environment is already a crime in most countries, but formal recognition lacks.
● It is a crime in 11 countries, while 27 countries are considering to add it to their statute.
● Ukraine is investigating a possible ecocide case against Russia for the breach in the Kakhovka dam in June 2023.

### Moves by other countries/organisations/CSOs
● Brazil: ecocide bill proposed in the congress (June 2023) against the massive deforestation in Amazonian forests.
● March 2023: European Parliament supported inclusion of ecocide-level crimes in the EU's revised environmental crime directives.
● Global NGO: Stop Ecocide, lobbying to include it in the charter of International Criminal Court.

### What is India's Stance?
● Article 48A
● Multiple environmental acts, which impose varying penalties on acts against environment: EPA 1986, Compensatory Afforestation Fund Act, 2016, Air Act 1981, Water Act 1974, Wildlife Protection Act 1972, Forest Act, NGT Act 2010, but no recognition of ecocides.
● NGT has no jurisdiction of certain acts;
● New proposed acts like the Forest Conservation (Amendment) Bill, are controversial.

## 9. Global Stocktake Report

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment.

**Mains:** Climate change policies, international climate agreements (related to Paris Agreement).

**Prelims:** About Global Stocktake Report

### Context
The United Nations released a synthesis report on countries' progress toward Paris Agreement goals. It sets the stage for the 28th UN climate conference and highlights the need for urgent climate action.

### Introduction
● The United Nations climate secretariat has released a 'synthesis report' summarising the outcomes of three meetings conducted to assess the progress made by countries in attaining the objectives outlined in the 2015 Paris Agreement.

### Global Stocktake Overview
● The 'global stocktake' is conducted every five years to assess countries' progress towards the goals of the 2015 Paris Agreement.
● Countries committed to limiting global temperature rise to below 2 degrees Celsius by the end of the century and "as far as possible" below 1.5 degrees Celsius.
● The first stocktake report in 2023 will influence discussions at the 28th UN climate Conference of Parties (COP) in Dubai in November.
● It encourages countries to set higher climate targets before the next Nationally Determined Contributions (NDCs) are published in 2025.

### Contents of the Report
● The 45-page synthesis report reveals 17 key findings.
● These findings collectively indicate that global progress toward meeting the Paris Agreement targets is insufficient.
● There is a narrowing window of opportunity for countries to take substantial action.
● The report doesn't significantly differ from the UN synthesis report of 2022, which found that the NDCs of 166 countries were inadequate to meet the Paris Agreement goals.
● The United Nations Emissions Gap Report from the previous year highlighted the need to cut 23 billion tonnes of $CO_2$ emissions to align with the Paris Agreement.
● However, even if countries fully implement their current commitments, it would only reduce emissions by 2-3 billion tonnes, leaving a substantial emissions gap of around 20 billion tonnes.

### Key Findings
● The Paris Agreement has spurred countries to set climate goals and recognize the urgency of the climate crisis.
● Governments should support transitioning economies away from fossil fuels, ensuring equitable and inclusive economic change.
● Ambitious emissions reduction targets are needed: 43% by 2030, 60% by 2035, and net-zero $CO_2$ emissions by 2050 globally.
● Renewable energy must be expanded, and unabated fossil fuels rapidly phased out.
● Efforts to combat deforestation, land degradation, and emission-reducing agricultural practices should be prioritised.
● Climate adaptation efforts are fragmented and unequally distributed, requiring transparent reporting and international cooperation.
● Addressing 'loss and damage' from climate impacts requires comprehensive policies and increased funding.
● Financial flows should align with climate-resilient development and boost climate finance access in developing nations.
● Trillions of dollars must be unlocked and redirected to support low GHG emissions and climate-resilient development.

**Impact of the Report**

● The report is expected to shape discussions at the upcoming COP conference.
● It influenced the G20 Leaders Declaration, which recognized the significant financial requirements for transitioning to a renewable energy economy.
● The declaration acknowledged the need for trillions of dollars to achieve clean energy and climate goals, signalling a commitment to funding and transitioning to a sustainable future.
● Specifically, it highlights the need for USD 5.8-5.9 trillion before 2030 to support developing countries and an additional USD 4 trillion annually for clean energy technologies by 2030 to achieve net-zero emissions by 2050.

*Nut Graf: The UN's synthesis report on Paris Agreement progress underscores the world's insufficient climate efforts. It is expected to shape discussions at the upcoming UN climate conference. It also influenced the G20's acknowledgement of substantial funding needs for the renewable energy transition.*

## 10. Operation Gaja shines spotlight on Chittoor's kumkis

**Syllabus:** Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

**Prelims:** Kumkis, Operation Gaja, Asian Elephant – Conservation Status, Project Elephant

**Mains:** Human – Animal Conflicts in India, Conservation of Forests

**Introduction:**
A wild elephant caused destruction in Ramapuram village in Andhra Pradesh's Chittoor district, killing farmers and injuring others.

**How was it handled?**
● The Forest Department considered the elephant "very dangerous" and deployed a team of 100 personnel, including watchers, animal trackers, and beat officers from six ranges in Chittoor and Tirupati districts, to catch the elephant.
● **Kumkis** (trained elephants) from the Naniyala Forest Camp (Chittoor, Andhra Pradesh) were brought in to help with the operation. These are captive-trained elephants used in operations to capture and rescue or to provide medical treatment to an injured wild elephant.
● The wild elephant was found in a sugarcane field and the kumkis chased it for a couple of hours before it was finally caught and sedated.
● The captured elephant was taken to the **Sri Venkateswara Zoological Park** in Tirupati for medical examination and safekeeping.
● The Forest Department and villagers credited the trained elephants for their crucial role in capturing the wild elephant during **"Operation Gaja."**

**Conservation Efforts**

● **Asian Elephant**
  ○ It is the largest land mammal in Asia.
  ○ They are smaller than African bush elephant
  ○ Tusks typically absent in females, more prominent in males
  ○ Large and well-developed neocortex, similar to that found in humans, apes, and some dolphin species
  ○ Greater volume of cerebral cortex available for cognitive processing compared to other land animals
  ○ Exhibits a range of emotions and behaviors, including compassion, cooperation, self-awareness, and language
  ○ Sri Lankan Elephant (Elephas maximus maximus), Indian Elephant (Elephas maximus indicus) and Sumatran Elephant (Elephas maximus sumatranus) are the important subspecies.
  ○ It has been listed as **'Endangered'** on the IUCN Red List
  ○ It is listed in **Schedule I** of the Indian **Wildlife (Protection) Act, 1972**, and in **Appendix I of CITES.**
  ○ It can be found in 16 out of 28 states across India.

**Project Elephant** was introduced by the Government of India in 1992 as a Centrally Sponsored Scheme with three main goals:

● To safeguard elephants, their habitats, and migration routes.
● To mitigate human-wildlife conflicts.
● Improve the welfare of captive elephants.
   ○ The Ministry of Environment, Forest and Climate Change offers financial and technical assistance to key elephant range states through Project Elephant.

*Nut Graf: A wild elephant that killed farmers and injured others in Andhra Pradesh's Chittoor district was captured by a team of 100 personnel and two kumkis (trained elephants). This has highlighted the role played by Indian elephants in dealing with Human-Wildlife Conflict.*

## 11. Emerging countries need women-led climate action

**Syllabus:** GS-3, Conservation, environmental pollution and degradation, environmental impact assessment.

**Mains:** Significance of women-led climate action

**Background**
● The effects of climate change have significant negative effects on people and have become one of the largest worldwide problems in recent years. Location, social class, and gender all affect how the climate is changing.
● In a 2009 report, the United Nations noted that, regardless of gender, women are thought to be far more susceptible to the effects of climate change than males.

**"Gender equality and environmental goals are mutually reinforcing and create a virtuous circle that will help accelerate the achievement of the Sustainable Development Goals (SDGs)."**

**Vulnerabilities of women in low-income countries**
● Women are particularly susceptible to the effects of climate change in emerging and less developed nations.
● This is a result of their reliance on labour-intensive jobs and natural resources for their subsistence.
● Due to their greater responsibility for providing food, water, and other household duties that are not compensated, women from low-income homes are more at risk.
● One of several social, economic, and cultural factors that renders women more vulnerable to the consequences of climate change is that they are more likely than males to live in poverty.

**Vulnerabilities of Rural Women**
● Due to the environmental issue, obtaining basics takes more time and effort. Providing their family with access to clean water, sufficient cooking fuel, and wholesome food is frequently the responsibility of rural women.
● Women may be more vulnerable to health and safety risks due to their daily long-distance travels for fuel and water collection.
● Due to this, rural women are more severely impacted by climate change than urban women.

**Disasters and Gender-specific Issues**
● A UN survey found that women and girls make up the majority (80%) of individuals who have been displaced by climate-related disasters.
● Women, particularly those from at-risk populations, experience unique challenges both during and after natural catastrophes.
● Women who have been uprooted are more vulnerable to discrimination and exploitation.
● For instance, the United Nations Population Fund (UNFPA) discovered women were more vulnerable to trafficking and exploitation following the 2015 earthquake in Nepal.
● Some of the challenges women encounter because of their gender include being cut off from social networks, having a higher risk of gender-based violence, and having less access to important health services including sexual and reproductive health care and psychosocial support.

**Concerns of women in the agricultural workforce**
- In emerging nations, women make up a disproportionately big percentage of agricultural labour.
- Agriculture productivity is negatively and dramatically impacted by climate change.
- Women who work in agriculture often lack technical expertise and access to high-quality inputs.
- As a result, female farmers and workers are at risk and negatively harmed.
- Additionally, several studies show how flooding has worsened water scarcity, violence against, and exploitation of women.

**Way Forward**
- The impacts of climate change can significantly worsen socioeconomic vulnerability and poverty among women.
- Inequality for women is related to climate change as well. Women have a lot to give when it comes to responding to a changing atmosphere.
- If we want to be able to withstand the effects of climate change, we must invest in women's access to resources, education, and training.
- By educating people on sustainable agriculture, water management, and energy production, we can lessen the detrimental effects of climate change on people's living conditions. For instance, the Self-Employed Women's Association (SEWA) educates women farmers in India on how to adapt to changing climatic trends in order to better sustain themselves.
- Supporting organizations that educate the public, teach people how to adapt to climate change, and invest in women's education and environmental agricultural training is crucial.

**Conclusion**
Women's participation in climate policy decision-making at all levels is essential for effective mitigation and adaptation strategies as well as for securing suitable employment. Since women are more vulnerable to the effects of climate change, gender equality in decision-making bodies is essential. One such effort in South Asia is the Gender and Climate Change Development effort, which aims to give women a greater voice and consequently strengthen their influence in policy making. Similar worldwide actions are required for efficient climate change adaptation and mitigation. We may say that developing and emerging countries urgently require women-led climate action.

*Nut Graf: Women in many regions of the world are especially vulnerable to climate change due to their reliance on natural resources and labour-intensive jobs.*

## 12. What should be done with electronic waste?

**Syllabus:** Conservation, Environmental Pollution and Degradation

**Prelims:** Indian Cellular and Electronics Association, Pathways to Circular Economy in Indian Electronics Sector report, E-waste,

**Mains:** Circular Economy Approach, Sustainable E-waste management in India

**Context?**
- The issue of electronic waste (e-waste) is a growing concern globally, with India being one of the largest producers of e-waste.
- To address this issue, the Indian Cellular and Electronics Association (ICEA) has proposed a circular economy approach in its report **"Pathways to Circular Economy in Indian Electronics Sector"**, that focuses on refurbishing and reusing electronic components.

**What is the circular approach to e-waste management?**
- It involves setting up reverse supply chains, where used devices are collected, refurbished, and then sold again.
- This would not only reduce electronic waste but also help recover valuable resources that can be reused in the production of new products and reduce emissions.

**What are the challenges in implementing this approach?**

● The current method of handling e-waste involves disposing of devices and parts in landfills or incinerators. This is unsustainable and harmful to the environment. Incentives for various stakeholders in the supply chain to adopt a circular economy approach is missing.
● Lack of infrastructure and technology to properly process and recycle e-waste.
● Inverted duty structure leading to methods called cannibalization, which refers to the practice of buying complete devices to harvest spare parts at lower costs, to maintain competitiveness. Increased refurbishing needs access to spare parts at lower prices.
● Currently, most e-waste is handled by the informal sector, which often lacks the necessary expertise and equipment to safely and efficiently recycle electronic components. For example, about 90% of waste collection and 70% of the recycling are managed by the informal sector.
● Another challenge is the lack of awareness among consumers about the importance of proper e-waste management. Many people are hesitant to hand over their used devices for recycling due to concerns about data privacy and security. According to reports, around 200 million are believed to be left unused in people's homes due to this.
● Viability of recycling plants are doubtful as materials to recycle are disaggregated and scattered increasing the cost of operations.

**Way Forward:**

● ICEA report recommends establishing public-private partnerships to set up high-tech recycling centers that can extract the maximum value from e-waste.
● It also recommends educating consumers about the benefits of e-waste recycling and promoting initiatives that offer incentives for responsible device disposal.
● An auditable database could be created to track the materials collected through this process.
● Geographical clusters could be set up where devices are gathered and disassembled.
● 'High yield' recycling centers should be incentivized to maximize the value extracted from recycled materials, such as rare earth metals found in semiconductors.
● The government could provide financial support (e.g., covering 25% of capital expenditures) to encourage the establishment of advanced recycling facilities.
● Encouraging repair and extending product lifetimes through a "right to repair" policy.

**Nut Graf:** *Adopting a circular economy approach to managing e-waste is essential for reducing the environmental impact of electronic devices and conserving valuable resources. While there are challenges to overcome, with the right policies and technologies in place, India can become a leader in sustainable e-waste management practices.*

## 13. Climate phenomena and food security

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Mains:** Changing precipitation patterns and their environmental impact, disaster vulnerability and the need for improved forecasting and early warning systems.

**Prelims:** About the impacts of Climate Change

**Context**
The article discusses India's vulnerability to disruptive weather patterns and climate phenomena, emphasising their impact on agriculture, food security, and water resources.

**Introduction**
● India experiences complex weather and climate phenomena, impacting its precipitation system.
● Recent events like a prolonged Western disturbance and El Niño phase intensification have raised concerns.

**Impact on Infrastructure and Life**
● The extended Western disturbance caused landslides and flooding in the western Himalayas and northern India.
● The affected area covered 2,124 to 7,362 sq. km with a population of potentially over 25 lakh.

**El Niño and its Consequences**
● El Niño, a climate-linked warming in the Pacific Ocean, can weaken winter precipitation from the Western disturbance and shift it to intense rain events.
● Its adverse effects on Indian agriculture, including delayed rains and hot temperatures, are of great concern.

**Green Water and Food Security**
● Indian agriculture depends on both green and blue water.
● Green water, from rain-fed soil moisture, is crucial, especially for rain-fed crops and staple foods.
● Food production, dietary needs, and food security are closely tied to green water.

**El Niño's Impact on Agriculture**
● El Niño events can disrupt Indian agriculture, causing declines in crop production, such as soybean.
● The recent warm and dry weather in India raises concerns about El Niño's effects.

**Northeast Monsoon and Rabi Crops**
● Reservoirs and groundwater conditions after the southwest monsoon determine water availability for winter crops (rabi crops).
● Northeast monsoons and Western disturbances contribute to water availability.

**Central India's Vulnerability**
● Central India's highlands, crucial for water, food, and ecological security, face significant water stress.
● Water stress affects both urban and rural areas, impacting millions of people.

**Changing Precipitation Patterns**
● Monsoon precipitation has been declining since the 1950s, with indications of more intense rain events and heat stress.
● Hydrologically incompatible land use and infrastructure worsen disaster vulnerability.

**Uncertainty and Future Projections**
● Climate models have limitations in simulating precipitation trends, leading to uncertainty.
● Adapting to more frequent intense rain events and heat stress is essential.

**Adaptation Strategies**
● Reducing dependence on water-intensive crops and promoting crops such as millets can enhance food system resilience.
● Shifting to alternative crop varieties with shorter growing cycles can mitigate risks.
● Improved forecasting, early warning systems, and dam management are vital for disaster prevention.

**Society and Governance Response**
● Diversifying agro-food systems, sustainable water-sharing, and river rejuvenation are essential.
● Effective governance and societal responses will determine the well-being of India's population.

**Nut Graf:** *Recent events, including prolonged Western disturbance and El Niño intensification, highlight India's susceptibility to climate-related challenges, impacting agriculture, water security, and the well-being of its 1.4 billion people.*

**14. Complex path to biofuel sustainability**

**Syllabus:** Environmental Pollution and Degradation

**Mains:** Necessity of sustainable biofuel

**Prelims:** Generations of Biofuel

**Context:** The relevance of biofuels amidst the rise of electric vehicles (EVs), particularly 2G biofuels, in the backdrop of the G20's establishment of the Global Biofuels Alliance.

**Necessity of Biofuels in the Wake of EV**

- **EV Dominance vs. Decarbonization Challenges:**
  - While electric vehicle (EV) adoption has surged, questions arise regarding the role of biofuels in addressing the challenges of decarbonization.
  - The transition to EVs necessitates substantial capital investments to replace existing internal combustion engine (ICE) vehicles and infrastructure, highlighting the trade-offs involved.
  - Importing critical minerals for EV batteries raises environmental concerns related to mining practices and supply chain ethics.
- **Biofuels as a Viable Alternative:**
  - Biofuels present themselves as a practical alternative, as they can power existing ICE engines with minimal modifications.
  - Unlike EVs, biofuels offer import independence, reducing dependence on mineral imports.
  - However, it's imperative to distinguish between sustainable and unsustainable biofuels for effective decarbonization strategies.

**Generations of Biofuels:**

- **1st Generation (1G) Biofuel in India:**
  - In the Indian context, biofuels predominantly refer to 1G ethanol derived from food crops.
  - India's policy targets a 20% ethanol blend (E20) with petrol by 2025-26, primarily achieved using 1G ethanol sourced from sugarcane and food grains.
- **2nd Generation (2G) Biofuels as a Sustainable Option:**
  - 2G biofuels, made from crop wastes and residues, present a more sustainable alternative.
  - However, scaling up 2G ethanol production faces challenges related to the feedstock supply chain.
  - Achieving economies of scale while addressing energy needs and costs for biomass collection and transportation is a major concern.

**Challenges of 1G Biofuel:**
- The cultivation of sugarcane raises concerns about groundwater depletion and jeopardizes food security.
- Stagnation in crop yields, exacerbated by climate change, threatens agricultural productivity.
- The agriculture sector emits a substantial amount of greenhouse gases, making it challenging to justify increasing emissions for motor fuel production to offset emissions from the transport sector.

**Importance of Sustainable Biofuels:**
- 'Sustainable' biofuels, produced from crop residues and waste with minimal environmental impact, offer a viable solution.
- India's commitment to climate action is demonstrated through initiatives like the Global Biofuels Alliance, formed at the G-20 Summit in New Delhi, aimed at strengthening sustainable biofuels and promoting ethanol use.

**Way Forward:**

● **Sustainable Biomass for Specific Sectors:**
  ○ Prioritizing the use of sustainable biomass in sectors with limited low-carbon alternatives, such as long-haul aviation and road freight, becomes imperative.
  ○ Targeting petrol vehicles, which are currently subject to ethanol blending, may not be the most suitable approach for sustainable biofuels.
● **Global Targets for Sustainable Biofuels:**
  ○ Meeting global net-zero emissions targets by 2050 requires tripling sustainable biofuel production by 2030.
  ○ The potential of 2G ethanol as a sustainable fuel is highlighted, particularly if production can be decentralized to reduce the transportation of crop residues.
● **Balancing Economies of Scale and Sustainability:**
  ○ A significant challenge lies in balancing the advantages of economies of scale with the energy requirements and costs associated with biomass collection and transportation.
  ○ The Global Biofuels Alliance is poised to drive innovation and technology development, fostering an efficient biomass supply chain and supporting smaller-scale decentralized biofuel production.
● **The complexity of Achieving True Sustainability:** Achieving genuine sustainability in biofuels is a multifaceted challenge that necessitates a comprehensive examination within the broader ecosystem to avoid unintended negative consequences.

*Nut Graf: The necessity of biofuels in the wake of EVs is evident, but it's crucial to distinguish between sustainable and unsustainable biofuels. India faces challenges with 1G biofuels, and the way forward involves prioritizing sustainable biomass for specific sectors, global targets for sustainable biofuels, and addressing the complexity of achieving true sustainability, with the support of initiatives like the Global Biofuels Alliance.*

## 15. Disentangling the 2030 global renewable energy targets

**Syllabus:** GS-3, Conservation, Environmental Pollution and Degradation

**Mains:** Role of developed and developing countries in Renewable Energy transition, Environmental justice

**Introduction:**
● The 28th Conference of Parties (COP28) of the UNFCCC proposed a global target to triple renewable energy (RE) capacity by 2030.
● This target is also mentioned in the G-20 declaration but is considered aspirational.
● While the proposal seems appealing, a closer examination reveals several challenges and inequities.

**Current State of Renewable Energy (RE) Capacity:**
● In 2021, the global installed RE capacity for electricity generation was 3026 GW, comprising 39% of total capacity.
● However, RE contributed only 28% to total electricity generation.
● Hydropower dominated RE generation, with solar and wind accounting for a combined 36%.

**Tripling RE Capacity and its Implications:**
● Tripling RE capacity by 2030 means adding about 6000 GW, surpassing the total capacity from all sources in 2021.
● Solar and wind are expected to provide most of this capacity.
● Assuming a 25% capacity utilization factor for solar and wind combined, this implies generating 13,000 TWh of electricity from RE alone.
● Meeting this target would require 38% of global electricity production to come from RE.

**Regional Disparities in Electricity Demand:**
● Global electricity demand varies significantly among countries and regions.
● Developing countries like China and India experience rapid electricity demand growth (6.6% and 6.3% annually), while developed regions like the EU and the US have slower growth or decline.
● Meeting the target requires different approaches in different regions.

**The Role of Developed vs. Developing Countries:**
● Developed countries like the US and the EU can meet the target by phasing out fossil fuel capacity and adding RE capacity, sharing a fair burden.
● Without phasing out fossil fuels, the US would need only 0.4% of the additional 6000 GW, while India would require 12%.
● Developing countries face challenges in scaling up RE capacity without substantial support for grid infrastructure and financing.

**The Origin of the Global RE Target:**
● The source of the global RE target lacks transparency but is influenced by the International Renewable Energy Agency (IRENA).
● IRENA's scenario aligns with an inequitable projection, with developing regions shouldering most of the RE capacity.
● Absolute capacity projections overlook energy demand growth and are riskier than relative targets.

**Lack of Equity and Resource Challenges:**
● Developing countries can't achieve this RE capacity increase without corresponding non-RE capacity for supply stability and adequate storage solutions.
● Building national grids at this scale poses financial challenges, given inadequate climate finance resources.

**Targets for Developed vs. Developing Nations:**
● Developed countries, like the US and the EU, lack absolute RE targets domestically, relying on market signals rather than government intervention.
● Developing countries, especially India, should consider the global RE target only if developed nations commit to equitable and absolute targets under the Paris Agreement.

*Nut Graf:* *The proposal to triple global RE capacity by 2030 raises concerns about equity, transparency, and feasibility. Regional disparities in electricity demand and commitment to absolute targets by developed nations should be addressed for a fair and effective transition to renewable energy.*

## 16. CM announces 15-point winter action plan to fight air pollution

**Syllabus:** Environmental pollution and degradation

**Prelims:** 15-point winter action plan to fight air pollution

**Mains:** The National Capital Region of India Air Quality, the major reasons for this and steps undertaken to address the issue.

**Context:** Chief Minister of Delhi announced a 15-point action plan to tackle air pollution during winter when the city struggles with smog, poor visibility, and a drop in the air quality mainly due to meteorological factors and stubble burning. The stubble burning has commenced. The winter season might see the Pollution Dome effect.



Cleaner air

According to data provided by the Delhi Pollution Control Committee, PM2.5 and PM10 levels reduced by over 30% between 2014 and 2022.

(Figures in per cubic metres of air) ■ PM10 ■ PM2.5

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|
| PM10 | 324 | 295 | 303 | 277 | 277 | 230 | 187 | 221 | 223 |
| PM2.5 | 149 | 133 | 137 | 130 | 128 | 112 | 101 | 113 | 103 |
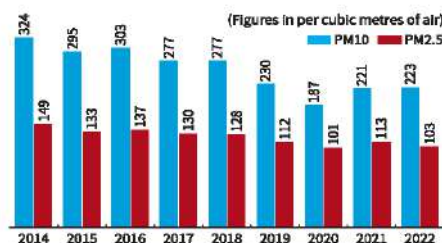
The CM described air pollution as a 'regional problem' and urged the Centre to call a meeting of the northern States to formulate a joint plan to tackle the issue. SUSHIL KUMAR VERMA

**Source: The Hindu**

**Key highlights of the Plan**
- For Stubble Burning: Use of bio-decomposer made by the Indian Agricultural Research Institute, Pusa in over 5000 acres of surrounding farmlands.
- To reduce the concentration of PM 2.5 and PM 10, a complete ban on the sale, storage, production, and bursting of firecrackers for the third consecutive year.
- Identification of 13 pollution hotspots, and action plans for all.
- 591 teams to monitor construction sites.
- 611 teams had been formed to implement the existing ban on burning garbage in the open.
- To control dust pollution on roads, 82 mechanical road sweeping machines, 530 water sprinkling machines, and 258 anti-smog guns will be deployed during winter.

**Graded Response Action Plan**
- Set of emergency measures that kick in if the air quality levels bypass a threshold.
- Approved by Supreme Court in 2016; notified in 2017.
- Till 2020, implemented by SC-appointed EPCA.
- EPCA dissolved in 2020. Since 2021, implemented by the Commission for Air Quality Management.
- Data used: forecasts from IMD and IITM

**Pollution Dome**
- A pollution dome, also known as an inversion layer, is a type of air pollution event where a layer of cold air is trapped below a layer of hot air near the ground.
- This creates a dome-like shape that prevents the dispersion of pollutants into the atmosphere, leading to the accumulation of high concentrations of pollutants in the lower layer.
- The formation of a pollution dome is typically caused by a combination of meteorological conditions and human activities.
- During the day, the sun heats the ground, which in turn heats the air above it. This warm air rises, allowing pollutants to disperse and mix with the surrounding air.
- However, at night, the ground cools faster than the air above it, leading to the formation of a stable layer of cooler air near the ground. If there is little or no wind, this cool air gets trapped under a layer of warmer air, creating a pollution dome.

*Nut Graf: The CM has been announcing action plans before the onset of winter every year, at least since 2019. He had announced a similar 15-point action plan last year as well. These steps are positive but it would be more effective when all the northern states and centre work on the issue in a comprehensive manner.*

## 17. A GM crop decision that cuts the mustard

**Syllabus:** E-Technology in the Aid of Farmers, Technology Missions

**Mains:** Concerns and challenges associated with GM crops.

**Context:** The environmental release of GM mustard DMH-11 marks a new era in self-reliance and sustainability in agriculture in India.

**Background:**
- The adoption of science-based technologies for crop improvement such as genetic engineering for developing genetically modified (GM) crops as a supplement to conventional breeding methods has become an absolute necessity to address the burgeoning and complex challenge of achieving global food and nutritional security under the fast-changing climate.
- According to the Global Food Security and Nutrition Report, 2019, it is difficult to achieve the 'Zero Hunger' target by 2030.

**Need for GM crops**
- Sustainable Development Goal 2: Zero Hunger.
- Increased stress on agricultural lands.
- Population pressure.
- Climate change.
- Global economic gains – (1996-2018) – $ 224.9 bn – 16 million farmers – 95% from developing countries.
- Has benefitted 26% of the global population.

**India specific needs**
- India faces a major deficit in edible oils.
- Imports – 13 million tonnes – Rs 1.17 lakh crore.
- Per hectare yield is low.
- Saves soil moisture and nutrients.
- Effective weed control.
- Will boost vibrant genetic engineering research.
- Enhance farm income.

**What is DMH-11?**
- The signature feature of DMH is that it carries a gene for herbicide resistance. i.e. herbicide tolerant.
- It has been developed by scientists from the Centre for Genetic Manipulation of Crop Plants (CGMCP), Delhi University.
- They developed the hybrid containing two alien genes isolated from a soil bacterium called Bacillus amyloliquefaciens.
- The barnase-barstar GM technology was deployed to develop DMH-11. The researchers found a popular Indian mustard variety 'Varuna' (the barnase line) with an East European 'Early Heera-2' mutant (barstar).
- It contains 3 important genes Bargene, Barnase and Barstar, all derived from soil bacterium.
- It would be a high-yielding variety of the mustard crop.

**Concerns**
- The availability of GM crops is a major concern.
- Local varieties of seeds will get ignored leading to a loss of biodiversity.
- Herbicide-resistant weeds will increase.
- The capability of the GMO to escape and potentially introduce the engineered genes into wild populations.
- The persistence of the gene after the GMO has been harvested.
- The susceptibility of non-target organisms (e.g. insects which are not pests) to the gene product.
- The stability of the gene and increased use of chemicals in agriculture.

***Nut Graf:*** *Cultivation of these GM mustard hybrids developed indigenously could help enhance farmers' income, reduce the oil-import burden and help achieve much-needed self-reliance in edible oil production. The environmental release of DMH-11 marks the beginning of a new era of self-reliance and sustainability in agriculture. More improved GM food crops are needed to boost the profitability of Indian farmers.*

## 18. Green Nudges and Greenwashing

**Syllabus:** GS 3- Environment

**Prelims:** Green Nudges and Greenwashing

**Context:** A recent study in China stated that green nudges can lead to lesser pollution.

**What are Green Nudges?**
- Gentle interventions to persuade people to make environmentally friendly choices.
- In China, Alibaba experimented with a Green Nudge of making "no cutlery" option as the default option in 3 test cities. (Jan 2019-Dec 2021)
- This increased the share of no cutlery orders, thereby reducing pollution by Single Use Plastics.
- In India too, Zomato started this in August 2021.

**Greenwashing**
- Deceptive or misleading practice of promoting a company's products, services, or environmental initiatives as being more environmentally friendly or sustainable than they actually are.
- Can manipulate customers.

**Ways of Greenwashing:**
● Exaggerated Claims
● Vague Terminology
● Hidden Trade-offs
● Irrelevant Information
● False Certification
● Unsubstantiated Claims
● Failure to Disclose
● Cherry-picking data

## 19. UN's Climate Ambition Summit

**Syllabus:** GS 3- Environment

**Prelims:** Climate Action Plan

### Absence of Major Economies
● The Climate Ambition Summit (CAS) at the United Nations General Assembly was missing key players: China, the U.S., and India.
● These countries, responsible for 42% of global greenhouse gas emissions, didn't attend a summit meant to showcase climate leaders with credible actions.

### Limited Participation
● Despite nearly 100 heads of state responding to UN Secretary-General Antonio Guterres's call for climate action, only 34 states and seven institutions spoke at the summit.
● Neighbouring countries like Sri Lanka, Nepal, and Pakistan, as well as emerging economies like South Africa and Brazil, were among the speakers.
● The European Union, Germany, France, and Canada also participated.

### Criteria for Speaking Slot
● To speak at the summit, countries needed updated pre-2030 Nationally Determined Contributions (NDCs), net-zero targets, energy transition plans without new coal, oil, and gas commitments, fossil fuel phase-out plans, ambitious renewable energy goals, Green Climate Fund pledges, and adaptation and resilience plans.
● All main emitters and G-20 governments were asked to commit to presenting more ambitious economy-wide NDCs with absolute emissions cuts by 2025, covering all gases.

### UN's Climate Action Team's Role
● The UN Secretary General's Climate Action Team engaged with governments, businesses, and local authorities to ensure net-zero transition plans met the UN-backed credibility standard.
● The UN did not clarify India's participation, and India's Ministry of Environment, Forests, and Climate Change did not provide information.

### India's Climate Pledges
● India last updated its climate commitments in 2022, aiming to reduce emissions intensity by 45% from 2005 levels by 2030.
● It pledged to meet 50% of its electricity needs with renewable, non-fossil fuel sources, up from 40% agreed at the Paris Agreement.
● India also promised to create a carbon sink of 2.5 to 3 billion tonnes of $CO_2$ equivalent through additional forest and tree cover by 2030.

### Call for Urgent Climate Action
● UN Secretary-General Guterres emphasised the urgency of climate action, warning of a dangerous and unstable world with a 2.8-degree temperature rise if nothing changes.
● The focus of the summit was on climate solutions in response to the escalating climate crisis.

**20. Kaimur Wildlife Sanctuary**

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Prelims:** Kaimur Wildlife Sanctuary

**New Tiger Reserve Planned**
● Bihar is preparing to establish its second tiger reserve in Kaimur district, expected to be operational by late 2023 or early 2024.
● The Valmiki Tiger Reserve (VTR) in West Champaran district is the state's existing tiger reserve.

**Approval Process Underway**
● Bihar's State Forest Department is seeking approval from the National Tiger Conservation Authority (NTCA) to designate the Kaimur Wildlife Sanctuary as a tiger reserve.
● The NTCA granted preliminary approval to the proposal in July, and the department is now working on the final proposal for formal NTCA approval.

**Tiger Population Growth**
● The tiger population in the Valmiki Tiger Reserve (VTR) has increased from 31 in 2018 to 54, according to an NTCA report.

**Kaimur District's Geography**
● Kaimur district in Bihar comprises two distinct landscapes: the Kaimur plateau (hills) and the western plains, bordered by the Karmanasa and Durgavati rivers.
● The region boasts dense forests and is inhabited by tigers, leopards, and chinkaras.
● Kaimur's forest cover spans 1,134 sq km, including the 986 sq km Kaimur Wildlife Sanctuary.
● Kaimur shares its borders with Jharkhand, Uttar Pradesh, and Madhya Pradesh.

**21. Maharashtra's ephemerals**

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Prelims:** Maharashtra's ephemerals

**Context:** Researchers and environmental groups are documenting floral species in the State and educating people about their existence through nature walks

**About Ephemerals:**

**Source: The Hindu**

- A short-lived plant that grows only during favorable periods and lies dormant as seeds during unfavorable times.
- Monsoon Ephemerals: bloom towards the end of May and throughout June, July, August, and September.
- Examples: Orchids, Lilies, Wild yams, Indian Squill, pond weeds, lantern flowers, etc.

## 22. Balsams in Western Ghats

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Prelims:**

- Balsams, also known as 'touch-me-not,' are in full bloom in Munnar, attracting tourists with their small pink flowers along the Kochi-Dhanushkodi National Highway's Devikulam stretch.
- The widespread flowering of balsams indicates the continued activity of the microclimate in the Munnar hill station.
- India has 220 balsam species, with 135 found in the southern Western Ghats, making Idukki a balsam paradise.
- New balsam species are regularly discovered in the high ranges of the Western Ghats, including the Periyar Tiger Reserve.
- Balsams have a typical life cycle from June to December, favouring humid habitats, and are sensitive indicators of climate change.
- Munnar is home to 46 balsam species, and the Forest Department actively protects these plants in forested areas.
- The region's unique biodiversity includes 46 species of balsams, making Munnar's diversity unmatched worldwide.

## 23. Animals in News

**Syllabus:** Conservation, Environmental pollution and degradation, Environmental impact assessment. Disaster Management.

**Prelims:** Animals in News

**Nilgiri tahr**

**Context: Tamil Nadu, Kerala to join hands to count endangered Nilgiri tahr**



Source: The Hindu

● Endangered (IUCN Status); Southern India's only mountain ungulate.
● Endemic to the Western Ghats and Southern Hills.
● Habitat: ranging between the Nilgiris in the north and the Kanniyakumari hills in the south
● The habitats face pressure from both humans and invasive species (wattles, pines, and eucalyptus in the grasslands).
● State Animal of Tamil Nadu.
● Tamil Nadu launched Project Nilgiri Tahr in December 2022; October 7: Nilgiri Tahr Day.
● A component of Project Nilgiri Tahrs aims to study the possible causes of the lumpy skin disease that has been observed in the animal and suggest a remedy.
● Census proposed under Project Nilgiri Tahr.

**Tasmanian tiger**

**Context:** RNA has been recovered for the first time from an extinct species: Tasmanian tiger (Thylacine). Mithun, a bovine species from North-East India has received the "Food animal" tag from FSSAI (Food Safety and Standards Authority of India).



Source: WION

● IUCN Status: Extinct
● Biggest carnivorous Marsupial
● Range: Australia, Tasmania, New Guinea
● Not a true tiger.
● It Became extinct in Australia 2000 years ago but persisted in Tasmania.
● Reason for extinction in Tasmania: persecution by European settlers due to concerns about livestock predation, along with habitat loss
● Last known Tasmanian tiger, known as "Benjamin," died in captivity at the Beaumaris Zoo in Hobart, Tasmania, on September 7, 1936.

**Mithun**
● No formal IUCN status as its a domesticated breed.
● Range: northeastern regions of India (Arunachal Pradesh, Nagaland, Manipur, Mizoram, and Meghalaya), Myanmar, Bangladesh, and Bhutan.
● Forested and hilly habitats.
● Holds significant cultural and economic importance for many indigenous communities in northeastern India. It is often used in rituals, ceremonies, and traditional events.

**Songbirds**



**Source: The Hindu**

● According to a study the ability to imitate sounds or vocal learning complexity is associated with better problem-solving abilities and larger brains in songbird species.
● Complex vocal learning is an important component of human spoken language and has been supposed to be associated with advanced cognitive abilities. **Except humans, it has been observed in a small number of taxa, including songbirds.**

# HISTORY, ART AND CULTURE

## 1. Konark Wheel and Nataraja at G-20

**Syllabus:** Indian Culture – Salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

**Prelims:** Konark Wheel and Nataraja features

**Context:** A replica of the Konark Wheel, and the World's biggest Nataraja statue have been placed at the G-20 Summit venue in New Delhi.

### About the Konark Wheel
- Part of Konark Sun Temple, a UNESCO World Heritage Site.
- Rotating motion of the wheels symbolises time, 'Kaalchakra', as well as progress and continuous change.
- The size and architecture of the 24 wheels is the same but each one of them has been differently carved all over.
- Each wheel has 8 wider and 8 thinner spokes
- It also features on our new Rs. 10 notes.



**Source: thekonark.in**

### About the Sun Temple
- Designed in the shape of a huge chariot with 12 pairs (24) of wheels.
- The chariot of Sun God.
- Drawn by 7 horses.
- Built during the 13th century under the reign of King Narasimhadeva-I of the Ganga dynasty.
- Added to the UNESCO World Heritage site list in 1984.
- The temple is believed to function as a sundial or solar calendar.
- The precise alignment of the temple allows the first rays of the sun to pass through the main entrance and hit the temple's main deity at specific times of the day.
- In addition to the main temple, the complex includes a Natya Mandap (dance hall), Jagamohana (assembly hall), and other smaller shrines.

### About Nataraja
- Representation of Lord Shiva
- 4 arms, standing on one leg, with the other leg lifted in a dance pose (Tandava Pose).
- One hand holds a damaru.
- Other hand holds a Flame.
- The 3rd is in Abhaya mudra.
- The 4th hand is extended across the body, pointing towards the uplifted left foot.
- Surrounded by Prabha Mandal (Aureole of Fire)
- Nataraja is shown standing triumphantly on the figure of Apasmara, a dwarf or demon.
- Chidambaram Temple in Tamil Nadu, India, is a famous shrine dedicated to Nataraja.

## 2. Disappearing languages, vanishing voices

**Syllabus:** Indian Culture – Salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

**Mains:** Importance of Linguistic Diversity and reason for its decline

**Prelims:** Linguistic Diversity Index

**Context:** The stark reality of language loss threatens diverse cultures, erasing identities and traditions, fueled by migration and globalization, demanding urgent preservation efforts.

### Extinction of Languages:
● The extinction of languages is a global phenomenon affecting the world's linguistic diversity. There are approximately 7,000 distinct languages spoken worldwide, each representing a unique cultural and historical heritage.
● Mathematical models predict that around 40% of languages with fewer than 35,000 speakers could disappear within the next century. This extinction implies that these languages will no longer be spoken as a mother tongue or as the principal language of a community.
● In the Indian context, the prevalence of a few dominant languages, such as English, which boasts 340 million native speakers and over 1.2 billion second language speakers, contributes to the shrinking linguistic diversity. English's global reach can be attributed in part to British colonial rule.

### Linguistic Diversity Index (LDI):
● The Linguistic Diversity Index (LDI) quantifies the decline in the number of mother-tongue speakers of the world's languages over a specified period, typically 30 years.
● The Language Diversity Index measures the probability that two randomly selected people within a population have different mother tongues. It ranges from 0 (everyone speaks the same language) to 1 (no two people share the same mother tongue).
● The UK has an LDI of 0.139, indicating a moderate level of linguistic diversity, while India has an LDI of 0.930, reflecting its high linguistic diversity.
● The USA, despite its predominant use of English, has an LDI of 0.353, illustrating the influence of significant immigrant populations who bring their languages and contribute to diversity.
● The top-ranking three countries with the highest LDI are Papua Guinea (0.990), Vanuatu (0.972) and the Solomon Islands (0.965).

### Reasons for Shrinking Linguistic Diversity:
● Shrinking linguistic diversity is primarily driven by migration patterns. When people migrate to countries where a dominant language is spoken, they often face social and economic pressures to adopt that dominant language. As a result:
  ○ First-generation migrants typically become bilingual, retaining their mother tongue but acquiring proficiency in the dominant language.
  ○ The next generation may have a weaker connection to their parents' mother tongue, as they prioritize the dominant language for education and social interaction.
  ○ By the third generation, the original mother tongue may no longer be spoken or understood, leading to its potential extinction within the family.
● The increasing globalization and interconnectedness of the world further encourage the adoption of dominant languages for better economic opportunities and communication.

### Impact of Shrinking Linguistic Diversity:
● A loss of linguistic diversity equates to a loss of cultural diversity. Languages are carriers of cultural values, traditions, and indigenous knowledge.
● As languages become extinct, unique identities and cultural expressions vanish, erasing the rich tapestry of human culture.
● Dozens of languages are currently on the brink of extinction, with only one living native speaker. This precarious state reflects the urgent need to preserve these languages to safeguard cultural heritage.

**Provisions in the Indian Constitution for Minority Languages:**

- **Article 29** of the Indian Constitution safeguards the interests of minorities by ensuring that they have the right to conserve their distinct language, script, or culture.
- **Article 345** empowers Indian states to specify their official language(s) for official purposes within the state.
- **Article 348(1)(a)** allows for the use of any language for official purposes of the Union, thus promoting linguistic diversity and inclusivity.
- **Article 350 B** provides for the appointment of a special officer for linguistic minorities to investigate and monitor the protection of their rights, further emphasizing the importance of linguistic diversity in India.
- 3 language formula of National Education Policy 1968
- Right to Education Act, 2009
- New Education Policy 2020 and National Curriculum Framework 2022.

*Nut Graf: In a world where linguistic diversity is rapidly diminishing, the Linguistic Diversity Index (LDI) serves as a crucial tool to assess and comprehend this decline. This index measures the decline in mother-tongue speakers of languages worldwide. It sheds light on the profound consequences of language loss and the urgent need for preservation efforts.*

## 3. Toto language

**Syllabus:** Indian Culture – Salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

**Prelims:** Toto language

**Introduction**
- Toto is a language spoken by a mere 1,600 people in West Bengal, near the Bhutan border.
- A professor at the University of Calcutta has undertaken an initiative to create a Toto language dictionary.

**Toto Language Background**
- Toto is a Sino-Tibetan language used by the tribal Toto people.
- It is typically written in the Bengali script.
- Despite the recent development of a Toto script in 2015 by community member Dhaniram Toto, most individuals still use the Bengali script or write in Bengali.

**The Significance of the Dictionary**
- The dictionary aims to preserve the Toto language, which has primarily been passed down orally, by documenting its vocabulary in print.
- Toto words will be translated into Bengali and English, utilising the Bengali script since the Toto script is in its early stages, and tribe members are more familiar with Bengali script.
- This dictionary is significant because the Toto community lacks any prior word collections or published primers in their language.
- Dhanua Totor Kathamala, a book by Mr. Toto, was written in Bengali, emphasising the need for this preservation effort.

**Calcutta Comparatists 1919**
- Mrinmoy Pramanick, an assistant professor of Comparative Indian language and Literature at the University of Calcutta, established Calcutta Comparatists 1919, a trust, to prevent marginal languages from becoming extinct.
- The trust organises collaborative workshops and incorporates literature from marginal languages into university curricula to ensure their survival and academic recognition.

**The Toto Shabda Sangraha Dictionary**
- Bhakta Toto, a bank employee and poet, compiled the dictionary.
- The dictionary was jointly published by Calcutta Comparatists 1919 and Bhasha Samsad, a publishing house run by Bitasta Ghoshal.

**Impact of the Dictionary**
- The dictionary will safeguard the Toto language from disappearing, allowing even those who study in English and Bengali to stay connected with Toto culture.
- The trust plans to publish another Bengali novel, Uttal Torsa, written by Dhaniram Toto in the near future.

## 4. Shantiniketan & Hoysala Temples added to UNESCO World Heritage List

**Syllabus:** Indian Culture – Salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

**Prelims:** Details about Shantiniketan & Hoysala Temples

**About:**
- 41st & 42nd UNESCO World Heritage Sites from India added to the list.
- Santiniketan, the famed place in West Bengal where poet Rabindranath Tagore built Visva-Bharati over a century ago.
- The 'Sacred Ensembles of the Hoysala' from Karnataka.
- India has 42 world heritage properties overall, which includes 34 in the cultural category, 7 in the natural category and 1 mixed property.
- Presently, India has the 6th largest number of UNESCO sites in the world.
- Santiniketan was established in 1901 by Rabindranath Tagore, the Nobel Prize-winning poet and philosopher. The town, which Includes a residential school, an art centre and a 'world university', was created based on a vision of the unity of humanity, one that transcends religious and cultural boundaries.
- Santiniketan is directly and tangibly associated with the ideas, works and vision of Tagore and his associates, pioneers of the Bengal School of Art and early Indian Modernism.



Source: India Today

The Sacred Ensembles of the Hoysalas — namely the Channekeshava temple in Belur, the Hoysaleshvara temple in Halebidu and the Keshava temple in Somanathapura — are considered the most representative examples of temple complexes from the Hoysala empire in southern India.

The temples were built in the 12th to 13th centuries and stand as symbols of the creativity and skill of the artists and architects of the Hoysala era. The Hoysala Empire ruled a large portion of the modem day state of Karnataka between the 10th and 14th centuries. The capital of the empire was initially located at Belur and later moved to Halebidu.

The Hoysala temples have a basic traditional Darvidian morphology but show strong influences of the Bhumija mode widely used in central India. the Nagara traditions of northern and western India. and the Kamata Dravida mode favoured by the Kalyani Chalukyas. The architects drew inspiration from different types of temple architecture and the result was the birth of a completely new 'Hoysala Temple' form.

The official website of Unesco said the shrines in the temples are characterised by hyper-real sculptures and stone carvings that cover the entire architectural surface. a circumambulatory platform, a large-scale sculptural gallery, a multi-bored frieze. and sculptures of the Sala legend.

## 5. Three Hoysala temples declared World Heritage Sites

**Syllabus:** Indian Culture – Salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

**Prelims:** Features of Hoysala temples

**UNESCO Recognition**
- UNESCO has conferred World Heritage status upon the Hoysala temples located in Belur, Halebid, and Somanathapur, Karnataka.
- This prestigious recognition is poised to drive an increase in global tourism to these culturally significant destinations.

**Long-standing Nomination**
- Both the Chennakeshava temple in Belur and the Hoysaleshwara temple in Halebid, situated in the Hassan district, were part of UNESCO's tentative list since 2014.
- The inclusion of the Keshava temple in Somanathapur, located in the Mysuru district, into the tentative list was followed by the official nomination of all three by the Indian government in February 2022.

**Architectural Significance**
- The Archaeological Survey of India (ASI) highlights that these temples represent a convergence of creative genius, architectural eclecticism, and symbolism.
- They are considered outstanding sacred architecture, making them an honour for India and the world heritage community.

**Protection and Nomination**
- All three temples are under the protection of the ASI.
- The nomination was presented as 'The Sacred Ensembles of Hoysalas.'

**Distinctive Hoysala Style**
- Hoysala temples are known for their distinctive ornate style, featuring a stellate plan built on raised platforms.
- They are constructed using chlorite schist, also known as soapstone, which is easily carved.
- Horizontal friezes and sculptures often signed by artists are unique in Indian art history.
- The doorways showcase intricate carvings, highlighting the artistic excellence of the period.

## 6. Panel calls for revising rules of construction around protected ASI monuments

**Syllabus:** Indian Culture – Salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

**Mains:** Rules of construction around protected ASI monuments

**Context:** The Parliamentary Standing Committee on Transport Tourism and Culture has asked the government to revise the rules to make them realistic.

**Details:**
- A parliamentary panel has observed that the provision of a 100-metre prohibited area and a 300-metre regulated area around all monuments protected by the Archaeological Survey of India (ASI) has pitted the local community against these heritage structures in many places as they find it difficult to carry out necessary repair work of their residential spaces.
- It has recommended rationalising the application of such rules based on the historical significance of the monuments.
- The rule was introduced under the 2010 amendment of the Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958.

**Reasons:**
- Hampers repair of villagers' residential properties; creates resentment.
- Same rules apply to both major and minor monuments.
- Also recommended that the list of all 3,691 ASI-protected monuments be rationalised and categorised based on their national significance, unique architectural value and specific heritage content.

**About the AMASR Act**
- First introduced in 1957.
- To protect and preserve ancient monuments, archaeological sites, and remains of national importance in India.
- ASI (est. 1861) works under this act.
- The act establishes advisory bodies like the National Monuments Authority (NMA) to provide guidance on conservation and preservation.
- Amended in 2010: to redefine certain terms and to empower the central government to make rules for the conservation and management of protected monuments.
- Amended in 2017: to allow the government to take up infrastructure projects within prohibited areas around protected monuments.

## 7. Buddhavanam project

**Syllabus:** Indian Culture – Salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

**Prelims:** Buddhavanam project

**Introduction**
- A team from Telangana's Buddhavanam project visited the third-century BC Buddhist rock-cut caves in Mathale, Sri Lanka.
- The caves hold historical significance as the teachings of Lord Buddha were first written on palm leaves here.

**Buddhavanam Project**
- Buddhavanam is a Buddhist heritage theme park developed by the Telangana government at Nagarjunasagar.
- The project aims to preserve and promote Buddhist heritage.

**Historical Importance**
- Previously, Buddha's teachings known as Tripitaka (Sutr, Vinaya, and Abhidhamma pitakas) were transmitted orally.
- Sri Lankan king Devanampiya Tissa oversaw the writing of these teachings on palm leaves, marking the birth of Buddhist literature in India.

**Connection with Acharya Buddhaghosha**
- Acharya Buddhaghosha, a renowned Theravada Buddhist philosopher, resided in these caves and authored Visuddhimagga.
- The Mathale Buddha Vihara continues to operate a school in his name, honouring his scholarly contributions.

**Archaeological Significance**
- The rock-cut caves, nearby monastery, and discovered artefacts indicate the historical Buddhist connections between the Telugu States and Sri Lanka.

# 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

## Weekly Updates

**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"

# SOCIAL JUSTICE AND SOCIAL ISSUES

## 1. Air Quality life index report

**Syllabus:** GS-2, Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** Air Quality life index report

**Context:** According to the Air Quality Life Index (AQLI) report for 2023, air pollution shortens the lives of the residents of Delhi by around 11.9 years.
- AQLI measures the impact of particulate pollution on life expectancy.
- It is released by Energy Policy Institute at University of Chicago (EPIC).

**WORST-HIT NATIONS**

| Country | PM2.5* | Years lost** |
|---------|--------|--------------|
| B'desh | 74 | 6.8 |
| India | 58.7 | 5.3 |
| Nepal | 51.7 | 4.6 |
| Pakistan | 44.7 | 3.9 |
| Mongolia | 36 | 3 |

\* 2021 annual average PM2.5 in micrograms per cubic metre (µg/m3)

\*\* Life expectancy gains from reducing PM2.5 from 2021 levels to WHO standards of 5 µg/m3

**Source: Times of india**

**Details:**
- **Ranking:** India ranked second among the countries worst hit by air pollution with Bangladesh topping the list. Nepal ranked third followed by Pakistan and Mongolia.
- **PMI in South Asia:** Particulate pollution has increased 9.7 percent from 2013 to 2021 in South Asia. In India, PM2.5 levels rose 9.5 percent; in Pakistan 8.8 percent; and in Bangladesh, levels rose by 12.4 percent over this same time interval.
- **Life Expectancy:** An average Indian citizen loses around 5.3 years of life expectancy due to air pollution. An average Chinese citizen has seen an improvement — from 4.7 years of life expectancy being lost in 2013 to 2.5 now, an improvement of 2.2 years,
- **Pollution in India:** Pollution in India has increased from 56.2 µg/m3 in 2020 to 58.7 µg/m3 in 2021. This is more than 10 times the WHO guideline of 5 µg/m3.
- **Health Risk:** Pollution is the biggest threat to human health in India in terms of lowering life expectancy, beating cardiovascular diseases and child and maternal malnutrition. While particulate pollution takes 5.3 years off the life of the average Indian, cardiovascular diseases reduce life expectancy by about 4.5 years, and child and maternal malnutrition reduces life expectancy by 1.8 years.
- **Poor Air in Delhi:** It is the most polluted city in the world. Delhi's annual average PM2.5 level in 2021 was found to be 126.5 µg/m3, which is more than 25 times the World Health Organization (WHO) guideline of 5 µg/m3. Delhi residents are on track to lose 11.9 years of life expectancy on average relative to the WHO limit and 8.5 years relative to the national guideline if the current pollution levels persist.

**What if PM2.5 levels are reduced?**

● The report said: "In 2022, the Government of India revamped its NCAP (National Clean Air Programme) goal, aiming to achieve a 40 percent reduction in particulate pollution levels by 2026 in 131 non-attainment cities. Achieving and sustaining such a reduction for the 131 non-attainment cities would increase India's national average life expectancy by 7.9 months, and by 4.4 years for residents of Delhi–the most polluted non-attainment city, underscoring the massive potential benefits."

## 2. Heal by India initiative

**Syllabus:** GS-2, Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** Heal by India initiative

**Context:** It is a pan-India initiative of the health ministry which caters to people across the globe.
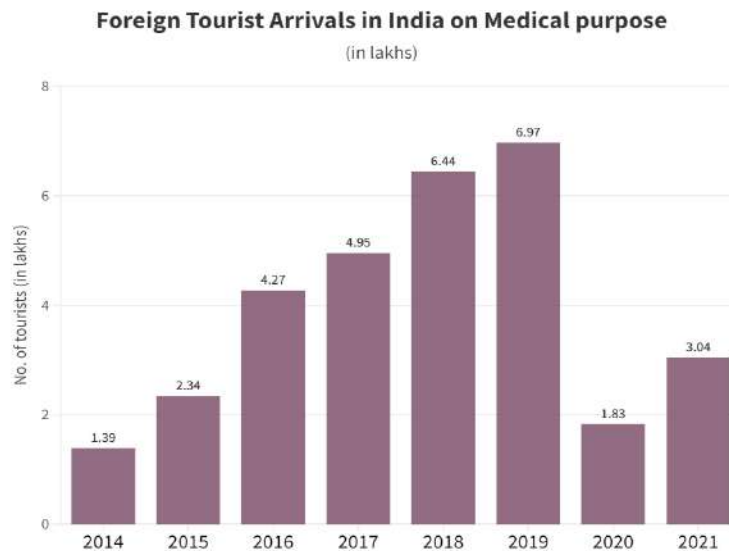
**Details:**

● It is focused on positioning India as a global leader in health and to boost medical tourism in the country.
● It involves a digital portal called Medical Value Travel, which will be a window of integrated Indian health care for the world.
● It is based on the foundation of Indian philosophy of Seva (service) and Atithi Devo bhava (guest is like God).
● It involves both central and the state governments and will offer modern medicine as well as traditional medicine.

**Medical Value Tourism in India**

● The Centre has launched a 'Heal in India' campaign to market the nation as a wellness and medical tourism destination.
● Targetting the global demand for holistic healing for lifestyle diseases such as diabetes, the government is pitching Ayurveda, yoga and naturopathy falling under the ambit of the AYUSH ministry as an alternative to modern medicine.
● India has launched e-visas for MVT travellers from 156 nations and has also accredited AYUSH centres, formalising their status in the Indian medical industry.
● Under 'Heal in India', thirty-seven hospitals including thirty private hospitals across 17 cities have been identified to cater to MVT.
● Moreover, the Centre has widened its health assurance scheme 'PM Jan Aarogya Yojana', covering approximately 500 million people and established 150,000 health & wellness centres.
● The Centre also plans to launch a one-stop online MVT portal, which will include mapping of all medical facilitators including government and private hospitals, booking of services, payments and post-operative services.
● For better visibility, the MVT portal will be integrated with India's tourism website Incredible India.
● The National Strategy and Roadmap for Medical and Wellness Tourism has identified the following key pillars for the development of medical-value travel in the country. Key Pillars:
  ○ Developing a brand for India as a wellness destination.
  ○ Strengthening the ecosystem for medical and wellness tourismEnabling digitalization by setting up Online Medical Value Travel (MVT) Portal
  ○ Enhancing accessibility for Medical Value Travel
  ○ Promoting Wellness Tourism
  ○ Governance and Institutional Framework
● Foreign Tourists Arrival on medical purpose increases from 1.83 lakh in 2020 to 3.04 lakh in 2021.

**Steps taken by the Government of India**
● 'Medical Visa' has been introduced, which can be given for specific purposes to foreign travellers coming to India for medical treatment.
● 'E- Medical Visa' and 'E-Medical Attendant Visa' have also been introduced for 156 countries.
● The Ministry of Tourism provides financial Assistance under Market Development Assistance Scheme to Medical Tourism Service Providers accredited by National Accreditation Board for Hospitals & Healthcare Providers (NABH) for participation in Medical/ Tourism activities.

**Foreign Tourist Arrivals in India on Medical purpose**
(in lakhs)

| Year | No. of tourists (in lakhs) |
|------|----------------------------|
| 2014 | 1.39 |
| 2015 | 2.34 |
| 2016 | 4.27 |
| 2017 | 4.95 |
| 2018 | 6.44 |
| 2019 | 6.97 |
| 2020 | 1.83 |
| 2021 | 3.04 |

**Source: PIB**

## 3. Nipah Virus

**Syllabus:** GS-2, Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** Nipah Virus causes and spread

**Context:**
● Fresh outbreak of Nipah Virus in Kerala's Kozhikode district.
● Kerala Health Minister Veena George said the cases belonged to the Bangladesh strain, which was comparatively less infectious, but had a high mortality rate of 70%.

**Nipah Virus Disease**
● Nipah is a zoonotic viral infection caused by the Nipah virus.
● Its symptoms, according to the US Centers for Disease Control and Prevention (CDC), are fever, headache, cough, sore throat, difficulty in breathing, and vomiting.
● In severe cases, disorientation, drowsiness, seizures, encephalitis (swelling of the brain) can occur, progressing to coma and death.
● The first outbreaks of the Nipah virus among humans was reported from Malaysia (1998) and Singapore (1999).
● The animal host reservoir for this virus is known to be the fruit bat, commonly known as flying fox.
● Fruit bats are known to transmit this virus to other animals like pigs, and also dogs, cats, goats, horses and sheep.
● Humans get infected mainly through direct contact with these animals, or through consumption of food contaminated by saliva or urine of these infected animals.
● But human-to-human transmission is also possible.
● Since it was first identified in 1998-99, there have been multiple outbreaks of the Nipah virus, all of them in South and Southeast Asian nations.

Source: Times of India

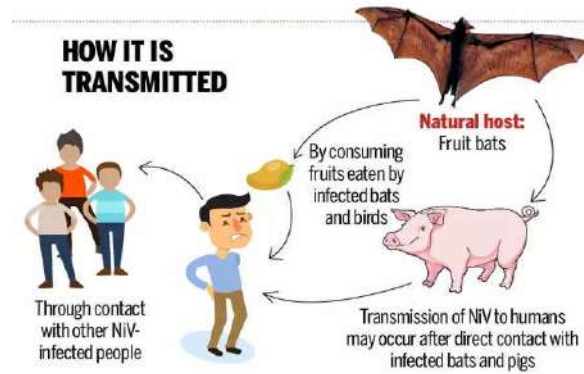- In India, West Bengal had seen an outbreak in 2001 and 2007, while Kerala had reported several cases in 2018, and isolated cases in 2019 and 2021.
- The Nipah virus is known to spread far more slowly than SARS-CoV-2.
- Its high mortality rate is the biggest concern.
- However, so far, all outbreaks of the Nipah virus have been localised and contained relatively quickly.
- One of the main reasons for a relatively quick end to an outbreak is the fact that Nipah virus is not very infectious and human-to-human transmission is not very easy.
- Reproductive number (R0) in the previous outbreaks of Nipah virus was about 0.48.
- No vaccine or specific line of treatment available for the infection
- Preventive and containment measures can be a key to control the spread.
- Further genomic and epidemiological studies needed to understand the outbreaks and spread and how anthropogenic activities contribute to the transmission.

## 4. Using AI on X Rays can detect more TB cases

**Syllabus:** GS-2, Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** AI on X Rays and uses of it in TB cases

- AI-assisted chest X-rays, such as qXR developed by Quire.ai, can help detect presumptive TB cases early and quickly.
- In India, the 2019-2021 National TB Prevalence Survey found that nearly 43% of TB cases would have been missed without chest X-rays.
- The Indian regulatory authorities have cleared qXR, and it also meets the WHO requirement of >90% sensitivity and >70% specificity in people older than 15 years.
- However, states are awaiting a directive from the Central TB Division to adopt qXR, which could encourage widespread adoption.
- Early diagnosis and initiation of care for millions of people with TB is crucial for India's ambitious goal of eliminating TB by 2025.
- Using qXR to read digital X-rays before molecular testing as part of community screening will reduce TB prevalence and minimize the number of molecular tests required.
- The use of qXR increased the positivity of molecular tests by 18-27%.

## 5. Silent Killer: High Blood Pressure

**Syllabus:** GS-2, Issues Relating to Development and Management of Social Sector/Services Relating to Health

**Mains:** Hypertension has emerged as a new silent killer. What are the reasons behind it and suggest remedies for this menace?

### Introduction:
● High blood pressure, or hypertension, is often referred to as a "silent killer" due to its often unnoticed nature until it leads to severe health complications.
● Hypertension is defined as a blood pressure reading above 140/90, and it can result in strokes, heart attacks, kidney damage, and heart failure.
● The World Health Organization (WHO) has recently released a report highlighting the global impact of hypertension.

### Global Situation:
● Hypertension affects one in three adults worldwide, making it a significant global health concern.
● The number of people with hypertension has doubled from 650 million in 1990 to 1.3 billion in 2019, with nearly half of them unaware of their condition.
● The WHO report reveals that nearly four out of five people with hypertension are inadequately treated.
● Scaling up coverage could prevent 76 million deaths between 2023 and 2050.

### India's BP Performance:
● Recent research in India shows a growing prevalence of hypertension, particularly among younger adults and those from lower socioeconomic backgrounds.
● A systematic review found that only about 22.5% of people with high blood pressure had it under control in the most recent period from 2016 to 2020.
● The Cureus study showed an increase in high blood pressure cases in India, especially among those aged 15-49.
● Many individuals with high blood pressure in India remain undiagnosed due to limited awareness and access to healthcare services.

### Causes of this Alarming Situation:
● Lifestyle factors play a significant role in hypertension, including high-salt diets, lack of physical activity, and excessive alcohol consumption.
● Sedentary lifestyles, poor dietary choices, and high stress levels contribute to hypertension prevalence in India.
● Lack of awareness, limited access to healthcare, and social determinants such as education and caste also contribute to the problem.
● Medication adherence, affordability, and availability are barriers to hypertension management.

### Way Forward:
● The WHO report emphasizes the importance of lifestyle changes, including adopting a healthier diet, quitting tobacco, and increasing physical activity.
● Access to affordable medications is crucial for effective hypertension management.
● Improved hypertension control strategies, educational interventions, and behavioural changes are needed in India.
● Efforts should focus on addressing regional disparities within India and collecting better data to inform evidence-based policies.
● The economic benefits of improved hypertension treatment programs outweigh the costs, making prevention, early detection, and effective management cost-effective interventions.
● India's initiatives like the India **Hypertension Control Initiative** (IHCI) have shown promise in improving blood pressure control, but they need to be expanded to reach more people.

*Nut Graf: The WHO's recent report on hypertension underscores the urgent need for lifestyle changes, improved treatment strategies, and greater awareness to address this silent menace, which, if left unchecked, leads to severe health complications and economic burdens.*

## 6. Measuring Hunger across states

**Syllabus:** Issues related to poverty and hunger

**Prelims:** Global hunger index

**Mains:** Issues with Global and State Hunger Index

**Context:** An India-specific hunger index at the level of States and Union Territories helps evaluate the extent of undernourishment at a more localised scale.

**Background:**
- Despite being a major food producer with extensive food security schemes and the largest public distribution system in the world, India still grapples with significant levels of food insecurity, hunger, and child malnutrition.
- The Global Hunger Index (GHI), 2022, ranked India 107 among 121 countries, behind Nigeria (103) and Pakistan (99).
- The GHI provides a composite measurement and tracks undernourishment and hunger at the national level across three dimensions: calorie undernourishment, child malnutrition, and under-five mortality.
- According to the State of Food Security and Nutrition in the World report of 2022, India is home to 224.3 million undernourished people.
- Disparities are evident among States. Leveraging subnational data that encompasses the three dimensions of the GHI enables the development of an India-specific hunger index at the level of States and Union Territories.

**The State Hunger Index:**
- The GHI is computed using four indicators: the prevalence of calorie undernourishment; and of stunting, wasting, and mortality among children below the age of five and under-five mortality rate.
- The State Hunger Index (SHI) is calculated using the same indicators except calorie undernourishment, which is replaced by body mass index (BMI) undernourishment among the working-age population, as data on calorie undernourishment are not available since 2012.
- Data for stunting, wasting, and mortality among children below the age of five are sourced from the fifth round of the National Family Health Survey (NFHS-5), while the prevalence of BMI undernourishment is computed using NFHS-5 (2019-21) and Wave 1 of the Longitudinal Ageing Study in India (2017-18).
- The calculation of the SHI score involves combining the normalised values of the four indicators using the techniques recommended by the GHI.
- The SHI scores range between 0 and 100, with higher scores indicating more hunger. Scores below 10 signify low hunger, 10-20 moderate, 20-30 serious, 30-40 alarming, and 50 or above extremely alarming.
- In the SHI, Bihar, Jharkhand, and Chhattisgarh scored 35, which places them in the 'alarming' category. Gujarat, Uttar Pradesh, Assam, Odisha, Madhya Pradesh, Tripura, Maharashtra, and West Bengal all scored above the national average (29).
- The performance of these States resembles that of African nations such as Haiti, Niger, Liberia, and Sierra Leone.
- On the other hand, Chandigarh scored 12, and Sikkim, Puducherry, and Kerala all scored below 16.
- These States, along with Manipur, Mizoram, Punjab, Delhi, Arunachal Pradesh, Andaman and Nicobar Islands, and Tamil Nadu, fall under the 'moderate hunger' category.
- All the other States, which scored below the national average and above 20, have a problem of 'serious hunger'.
- No State falls under the 'low hunger' category. The impact of COVID-19 on the SHI is not captured here since post-pandemic estimates are not yet available.

**Issues:**
- Over the last half a decade, India's GHI score has deteriorated primarily due to the increasing prevalence of calorie undernourishment.
- According to the Food and Agriculture Organization, the proportion of calorie undernourishment in India has been escalating since 2017, reaching 16.3% in 2020, equivalent to the 2009 statistic.
- The Indian government has disputed these conclusions by raising concerns about the data and methodology used in calculating the GHI.
- However, it has not been able to provide empirical evidence to support its claims. Notably, no National Sample Survey (NSS) round on nutritional intake has been conducted by the government since 2011-12, which used to offer insights into the prevalence of calorie undernourishment at national and subnational levels.
- In the 78th round of the NSS conducted in 2020-21, four key questions were included to gauge household food insecurity. Unfortunately, information on these is missing from the NSS report.

**Facing the reality**

- The GHI has faced significant criticism from experts regarding its conceptualisation, indicator selection, and aggregation methods; it does provide critical insight into the state of undernourishment and child nutrition.
- India's poor performance in the GHI is primarily attributed to its high prevalence of undernourishment and child malnutrition.
- India ranks unfavourably in child wasting, performing worse than many low-income African nations.
- The NFHS-5 indicated that one-third of children under the age of five are stunted and underweight, while every fifth child suffers from wasting.
- Despite India's notable progress in alleviating extreme poverty over the last 15 years, as indicated by the recent National Multidimensional Poverty Index, challenges persist in addressing the disparity in food insecurity, hunger, and child malnutrition.

**Conclusion:** Therefore preparing India-specific hunger index at the level of States and Union Territories will give us local status of undernourishment.

*Nut Graf:* *India should continue to follow the comprehensive strategy to address the disparity in food insecurity, hunger, and child malnutrition.*

## 7. Bridging the malnutrition gap, the Bemetara way

**Syllabus:** Issues relating to Poverty and Hunger.

**Mains:** Importance of counselling in eradicating malnutrition

**Ongoing Government Schemes for Removal of Hunger and Malnutrition:**
- The government has implemented various measures to address food security, including mid-day meals in schools and monthly rations through the Public Distribution System.
- Initiatives like the Prime Minister's Overarching Scheme for Holistic Nourishment (**POSHAN**) Abhiyaan provide ready-to-eat meals, supplements, and special schemes like the Mukhyamantri Suposhan Yojana in Chhattisgarh.
- Despite these efforts, nutrition security remains a challenge due to a lack of knowledge about proper eating and feeding practices, as well as the proliferation of highly processed foods.

**Lessons from Bemetara:**
- Bemetara, a district in Chhattisgarh, faces malnutrition issues despite its affluence and agricultural richness.
- The high number of Severe Acute Malnutrition (SAM) children in Bemetara highlights the importance of addressing knowledge gaps related to feeding practices.
- The Potth Laika Abhiyaan, or "Healthy Child Mission," is a nutrition counselling program in Bemetara that focuses on educating parents of malnourished children about balanced diets, and hygiene, and dispelling dietary myths.
- Ground-level staff from health and women and child development departments are trained to provide nutrition counselling, and local leaders participate in counselling sessions.

**Statistical outcome Comparison:**
- The Potth Laika Abhiyaan successfully brought 53.77% of targeted children out of malnutrition within nine months (December 2022 to July 2023), totalling 599 out of 1,114 children.
- Specifically, 61.5% of Medium Acute Malnutrition (MAM) children and 14.67% of SAM children were lifted out of malnutrition.
- Comparing this to a control group of 20 Anganwadi Centres (AWCs) where the mission was not implemented, only 30.6% of children were rescued from malnutrition. This includes 33.8% of MAM children but zero SAM children.
- The Potth Laika Abhiyaan achieved a 23% increase in malnutrition recovery compared to the control group.
- Notably, the mission is cost-effective, requiring minimal expenses for training and regular monitoring, unlike providing meals that entail budgeting and the risk of leakages.

**Conclusion:**
- The success of the Potth Laika Abhiyaan underscores the importance of nutrition counselling in addressing malnutrition.
- To accelerate the eradication of malnutrition, it is essential to combine food distribution programs with nutrition counselling and monitoring.
- Replicating this model on a larger scale across districts and states can significantly contribute to India's goal of achieving a "Kuposhan Mukt Bharat" (Malnutrition-free India).

***Nut Graf:*** *In the pursuit of eradicating malnutrition in India, the Potth Laika Abhiyaan in Chhattisgarh's Bemetara district offers a powerful lesson. Through nutrition counselling and robust monitoring, this initiative has rescued a significant number of malnourished children, demonstrating that knowledge-sharing alongside food support is crucial for achieving a "Kuposhan Mukt Bharat".*

## 8. Ridding India of food insecurity

**Syllabus:** GS-2, Issues relating to Poverty and Hunger

**Prelims:** State of Food Security and Nutrition in the World Report, Food and Agriculture Organization (FAO), Green Revolution

**Mains:** Measures to address food insecurity in India, Need for a second Green Revolution

**Context**
- There is a need for a second Green Revolution in India to address the issue of rising food prices and improve agricultural productivity to ensure food security for all.

**Is nutritional food becoming costlier for Indians?**
- The rise in food prices has been steadily increasing since 2019, with a significant acceleration in recent years, reaching an alarming 11% annual inflation rate in July of this year.
- Continuing high food price inflation implies that vulnerable sections could be facing hardship in consuming adequate nutritional food.
- According to the 'State of Food Security and Nutrition in the World' report by the Food and Agriculture Organization (FAO), an estimated 74% of India's population cannot afford a healthy diet.
- A study found that the cost of preparing a thaali at home in Mumbai has risen by 65% between 2018-2023, while manual worker's wages increased by 38% and salaried worker's wages increased by 28%.
- According to the latest National Family Health Survey, over 50% of adult women in India are estimated to be anaemic, suggesting that the FAO's finding is plausible.
- Reduction in purchasing power could lead to a decrease in food consumption and an increase in anaemia cases.

**Why is there a need for a second Green Revolution?**
- Macroeconomic policy (for example, the tuning of repo rates by the RBI) has proven to be ineffective in managing food inflation stemming from the supply side.
- Demand-side measures such as cash transfers and priority lending are insufficient policies to contain the rising price of food.
- To address this issue, it is necessary to intervene on the supply side to ensure that food is produced at a steady price by raising the yield on land.
- The first Green Revolution, in the 1960s, was successful in making India self-sufficient in food, through high-yielding seeds, cheap credit, and assured prices through procurement.
- However, there were a few drawbacks such as the overuse of chemical fertilizers, reliance on procurement prices instead of productivity increases, and a focus on cereals rather than pulses.
- A second green revolution to address the issue of rising food prices and to lower the cost of production should include:
  - Yield-increasing interventions on farms to lower the cost of production.
  - Irrigation extended to 100% of the net sown area.
  - Increased ease of land leasing to make mechanization feasible.
  - Accelerate the agricultural research and extension services to farmers.

**Way forward:**

- Public expenditure on irrigation should be increased and properly managed to avoid waste and diversions of funds.
- Fragmentation of land holdings should be addressed through solutions such as leasing to increase productivity.
- Public agricultural research institutes need to be revitalized to play a key role in developing and disseminating innovative farming techniques.
- Extension services should be revived and strengthened to help farmers adopt best practices.
- All of these initiatives should be integrated into a program aimed at significantly increasing protein production in India.
- State governments must work closely with the central government in the spirit of cooperative federalism to implement these programs and take ownership of enhancing agricultural productivity.
- Private enterprises can also play a role in achieving the food security goals with innovation and infrastructure creation, but their approaches must be environmentally sustainable.

**Conclusion:**

- Addressing malnutrition and ensuring access to healthy diets for all Indians requires a multi-faceted approach that includes ecological security and should be the most important task of economic policy over the next few years.

*Nut Graf: Rising food prices and malnutrition are major challenges facing India. A second Green Revolution is needed to address these challenges by increasing agricultural productivity, improving access to healthy diets, and ensuring food security for all.*

## 9. Pradhan Mantri Matsya Sampada Yojana

**Syllabus:** GS 2- Government Schemes

**Prelims:** Pradhan Mantri Matsya Sampada Yojana

**Introduction**

- In 2020, Prime Minister Narendra Modi initiated reforms in the Indian fisheries sector to harness the Blue Economy's potential.
- Despite the COVID-19 pandemic, PM Modi announced the Atmanirbhar Bharat package for the fisheries sector.
- ₹20,050 crore allocated for the Pradhan Mantri Matsya Sampada Yojana (PMMSY), the largest-ever investment in Indian fisheries.

**Addressing Critical Gaps in the Fisheries Value Chain**

- PMMSY aimed at addressing key challenges in the fisheries sector.
- Identified strategic priority areas: marine fisheries, inland fisheries, fishermen's welfare, infrastructure, post-harvest management, cold water fisheries, ornamental fisheries, aquatic health management, and seaweed cultivation.
- Focus on improving fish production, productivity, quality, technology, infrastructure, and marketing.

**Empowering Youth and Entrepreneurs**

- PMMSY inspired youth to venture into fisheries.
- **Example:** Young woman entrepreneurs in Kashmir rearing cold water rainbow trout using recirculatory aquaculture.
- Aquapreneurs in Nellore became successful exporters through biofloc-cultivated shrimps.

**Expanding Fisheries to Non-traditional Areas**

- Efforts to expand fisheries to non-traditional regions.
- Conversion of saline wastelands into productive aquaculture areas in Haryana and Rajasthan.
- Nearly 20,000 hectares of fresh pond area dedicated to inland aquaculture.

**Empowering Fisherwomen and Diversifying Livelihoods:**

- The PMMSY enables women in fishing communities to seek profitable alternatives and diverse sources of income, including engaging in activities like ornamental fisheries, pearl farming, and seaweed cultivation.
- A good example includes the recently launched ₹127-crore Seaweed Park in Tamil Nadu's Ramanathapuram district.

**Support for Research and Infrastructure**
● Establishment of 900 fish feed plants and 755 hatcheries.
● Support for research and genetic improvement, including Indian White Shrimp development, pathogen-free brood stock, and tiger shrimp domestication.

**Achievements**
● India now ranks among the world's top three countries in fish and aquaculture production.
● India is the world's largest shrimp exporter.

## 10. India is at a pivotal moment in its health-care journey

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** Ayushman Bharat Scheme

**Mains:** Reforms needed in the HealthCare Sector, AI in Healthcare, Rise of Non Communicable Diseases in India, Potential of Medical Tourism in India

**Context:**
● India has made significant progress in healthcare.
● Since 1983, Infant mortality has improved by a factor of four, Maternal mortality has improved by a factor of seven and average life expectancy has increased by nearly 30%, from 55 years to over 70 years.
● Addressing the rising cases of non-communicable diseases, unlocking the potential of medical tourism and integration of Artificial intelligence (AI) in healthcare should emerge as the key focus areas of public policy.

**Key Focus areas in Health Care for India**

1. **Non communicable diseases**
   ● Non-communicable diseases (NCDs) such as diabetes, hypertension and cancer could cost the country $4 trillion by 2030 and create an 'age tax' on its demographic dividend.
   ● As India grapples with rising non-communicable diseases (NCDs), increasing medical costs, and inadequate healthcare infrastructure, the healthcare industry must work together to increase awareness, promote healthy lifestyles, and provide comprehensive health checks that include proper scans, rather than relying solely on blood tests.
   ● India needs to shift its focus from sickness care to preventive healthcare, leveraging technologies like telemedicine.
   ● By doing so, the country can reduce hospitalizations, lower healthcare costs, and improve population health outcomes.
   ● To achieve this goal, India must invest in rural healthcare infrastructure, strengthen primary healthcare centers, and promote public-private partnerships.
   ● Collaboration between government initiatives such as Ayushman Bharat and private players can ensure last-mile connectivity and bridge the existing gaps in healthcare delivery.

2. **Medical Value Travel**
   ● India boasts world-class healthcare infrastructure, exceptional clinical talent, and cutting-edge treatments at affordable prices, making it a popular destination for medical tourism.
   ● However, there is tremendous untapped potential in this space. By further developing its medical value travel industry, India can become a global leader in healthcare services exports.
   ● Specialized branches like oncology, orthopedics, and robotic surgery have seen significant advancements in recent years, with Indian hospitals offering cutting-edge treatments at competitive prices.
   ● For example, Proton beam therapy, minimal invasiveness, and robotic-assisted surgeries are a sign of India's growing medical prowess.
   ● Public-private collaborations can facilitate the creation of state-of-the-art infrastructure, streamline processes, and promote India as a premier medical tourism destination earning valuable foreign exchange and creating employment along the way.

3. **Artificial Intelligence**
   ● AI is expected to add $1 trillion to India's economy by 2035.
   ● It has the potential to revolutionize healthcare in India by improving diagnostic accuracy, optimizing treatment planning, and accelerating drug discovery.
   ● By leveraging predictive analytics, healthcare providers can identify disease patterns and intervene early, potentially preventing serious health issues from developing.
   ● Additionally, AI-powered systems can help streamline clinical workflows, improve patient engagement, and create personalized treatment plans tailored to individual patients' needs.
   ● Furthermore, AI can assist in optimizing resource allocation in public health, reducing healthcare costs, and improving patient outcomes.
   ● With the integration of AI into healthcare, India can set a new standard for efficient and effective care delivery.

**Conclusion**
● By emphasizing community health in treating non communicable diseases, leveraging medical value travel, and embracing AI, India can position itself as a global leader in healthcare innovation while ensuring better health outcomes for its citizens.
● A concerted effort from all stakeholders i.e public, private, and civil society organizations is necessary to realize this vision.

***Nut Graf:*** *India's healthcare landscape should evolve, with a focus on combating NCDs, unlocking the potential of medical tourism, and integrating AI. These key focus areas can revolutionize healthcare delivery, ensuring better health outcomes for its citizens.*

## 11. PM Vishwakarma scheme

**Syllabus:** GS 2- Government Schemes

**Prelims:** PM Vishwakarma scheme

**Introduction**
● Prime Minister Narendra Modi initiated the Pradhan Mantri Vishwakarma Yojana (PMVY) with an emphasis on elevating the status of artisans and skilled craftsmen.
● Additionally, he officially inaugurated the initial stage of the India International Convention and Expo Centre, named Yashobhoomi, situated in Dwarka, New Delhi, with a project cost of ₹5,400 crore.

**Commitment to Artisans**
● PM Modi emphasised the government's commitment to the welfare of artisans and craftspeople.
● The PMVY aims to equip craftspeople with modern technology to enhance their skills and compete in the contemporary market.
● PM Modi dedicated Yashobhoomi to labourers and Vishwakarma workers, acknowledging the government's support for marginalised individuals.

**Scheme Details**
● The Vishwakarma scheme's goal is to improve the accessibility and quality of products and services offered by traditional artisans.
● The scheme offers interest-free enterprise development loans amounting to ₹1 lakh (with the first instalment due in 18 months) and ₹2 lakh (with the second instalment due in 30 months) without requiring collateral.
● Beneficiaries will be charged a concessional interest rate of 5%, with the Ministry of Micro Small and Medium Enterprises providing an interest subvention cap of 8%.
● The Union government will bear the credit guarantee fees.

**Promoting 'Vocal for Local'**
● PM Modi emphasised the importance of the 'Vocal for Local' initiative and encouraged individuals to purchase locally made products during the upcoming festivals such as Ganesh Chaturthi, Dhanteras, and Deepavali.

**Yashobhoomi Convention Center**

- PM Modi emphasised the substantial potential of the conference tourism sector, estimated to be worth ₹25 lakh crore, and underscored its importance for India.
- Yashobhoomi, with a vast project area and built-up space, will rank among the world's largest MICE (meetings, incentives, conferences, and exhibitions) facilities.
- The facility is expected to generate employment opportunities for youth.

## 12. Pedagogic ethics

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Mains:** Lacuna in teacher training and the Importance of teachers in inculcating values in children

**Introduction:**

- Recently a disturbing incident has been seen in Uttar Pradesh where a teacher asked classmates to slap a seven-year-old student.
- It highlights the overall decline in the quality of education and teacher training in India.

**Gaps in Teacher Training:**

- There has been a decline in the momentum of the Right to Education (RTE) Act despite its enactment over a decade ago.
- Neglect of teacher training has significantly contributed to the emergence of numerous small-time educational entrepreneurs who lack the essential pedagogical skills and ethical understanding.
- This neglect has created a situation where the regulatory framework, particularly the National Council for Teacher Education (NCTE), struggles to enforce its meticulously crafted norms and standards.
- In response to the deteriorating state of teacher training, the Supreme Court of India appointed a commission under the late **Justice J.S. Verma** in 2008 to meticulously examine the various issues plaguing teacher training in the country.
- The hope that arose from Justice Verma's comprehensive report, submitted in 2012, with its potential to elevate the status and attention given to teacher training, turned out to be fleeting and ineffective.
- The belief that the quality of education could be improved through an inspection-based approach proved to be illusory.
- A recent Supreme Court judgment has further shed light on this issue by criticising the NCTE for permitting Bachelor of Education (B.Ed.) degree holders, traditionally associated with secondary education, to teach at the primary level, thereby exposing a gap in teacher preparation.

**The Muzaffarnagar Incident:**

- The detailed account of the Muzaffarnagar incident, where a teacher instructed students to slap a seven-year-old Muslim boy, is profoundly disturbing.
- Additionally, there has been pressure exerted on the boy's parents by rural leaders, including some prominent farmer leaders, to dissuade them from pursuing legal action, out of fear that it could potentially lead to communal tensions, particularly given the district's history of past riots.
- Astonishingly, the teacher responsible for this reprehensible act exhibited a complete lack of contrition and even viewed her actions as part of her duty to control children, dismissing the incident as being blown out of proportion.
- This raises important questions about the perceived proportions and ethical boundaries of disciplinary actions within educational settings.

**Chattopadhyaya's Vision:**

● D.P. Chattopadhyaya, a philosopher, chaired the Teacher Commission report, which emphasized the need for appropriate professional conduct among teachers, including thoughtfulness and a heightened consciousness when making decisions.

● However, there exists a stark disparity between the ideals articulated in this report and the prevailing ethos within the Indian education system, where quick-fix solutions and instrumental approaches often take precedence.

● This disconnect is exacerbated by the bureaucracy's tendency to view teachers as minor functionaries, diminishing their role in shaping young minds.

● The 1990s witnessed a deterioration in the dignity of teachers, driven by structural adjustment policies that led to mass recruitment on a contractual or ad hoc basis.

● Furthermore, the reckless privatization of education resulted in market-driven emolument decisions, without any significant improvements in working conditions.

**The shattering of a bond:**

● The absence of a cohesive community among school teachers is a critical factor contributing to the lack of a collective response to incidents like the one in Muzaffarnagar.

● Teachers' Day, celebrated on September 5 to commemorate Dr. Sarvepalli Radhakrishnan's birthday, should serve as a reminder of the importance of recognizing and honouring teachers' contributions.

● During Dr. Radhakrishnan's era, institutions of higher learning enjoyed a degree of autonomy, and teachers received training that emphasized care and responsibility for the well-being of children.

● The shock and disappointment experienced by teachers who still uphold these principles when learning about the Muzaffarnagar incident is palpable.

● The administrative response to the incident, involving the closure of the school, underscores the seriousness of the teacher's disregard for pedagogic ethics.

● It is essential to acknowledge that such incidents not only affect the immediate victims but also undermine the broader educational process by rupturing the essential bond between teachers and students.

● Additionally, referencing educational visionaries like Rabindranath Tagore and Gijubhai Badheka, who advocated for adult kindness and empathy towards children, underscores the stark contrast between their ideals and the actions of the teacher in Muzaffarnagar.

***Nut Graf:*** *The shocking incident in Uttar Pradesh, where a teacher instructed students to assault a seven-year-old classmate, shows the alarming decline in the quality of education and teacher training in India. It indicates the regulatory lapses and neglect that have allowed unqualified educators to proliferate. Moreover, it also highlights the disturbing apathy towards ethical pedagogy and reflects on the critical bond between teachers and students that such incidents shatter, ultimately posing significant challenges to the country's education system.*

## 13. Facilitating degrees within a degree

**Syllabus:** GS-2, Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** National Higher Education Qualification Framework, University Grants Commission, Bologna Process and Dublin Descriptors

**Mains:** Initiatives related Higher Education in India, Challenges in implementing National Higher Education Qualification Framework

**Context:**

The National Higher Education Qualification Framework (NHEQF) proposed by the University Grants Commission (UGC) has several limitations and challenges that need to be addressed.

**Challenges:**

1. **Lack of a common framework:** The University Grants Commission (UGC) has established the National Higher Education Qualification Framework (NHEQF) and the National Credit Framework, and requires higher educational institutions to implement the Academic Bank of Credits for accepting and transferring credits across courses and institutions, in addition to other regulations that impact higher education qualifications. These could have been integrated into a single and common NHEQF to minimize ambiguities in understanding qualifications across different contexts.

2. **Lack of clarity:** The NHEQF lacks clarity regarding the entry points and pathways for students to move between different levels of higher education programs.
3. **Inadequate representation:** The NHEQF does not include higher education qualifications awarded by certain disciplines such as agriculture, law, medicine, and pharmacy, which are regulated by separate bodies.
4. **Over-emphasis on Bologna Process:** The NHEQF draws heavily from the Bologna Process and the Dublin Descriptors, which were designed primarily for the European Higher Education Area. This may not be suitable for the diverse and complex higher education system in India.
5. **Elitism:** The provision for 'degrees within a degree' may lead to an elitist system where only those with high GPAs are eligible for PhD programs, thereby excluding others who may have equal potential but less privileged backgrounds.
6. **Difficulty in implementation:** Implementing the NHEQF may pose practical difficulties, such as equating postgraduate diplomas with four-year undergraduate programs, and determining the level of undergraduate degrees pursued after another undergraduate degree such as a B.Ed.
7. **Ambiguity around learning outcomes:** The NHEQF borrows from the Dublin Descriptors without considering the variations in learning outcomes for an Indian context. Learning outcomes can differ significantly across different fields of study and may not be measurable using the same criteria across all disciplines.
8. **Ignore socio-economic factors:** The NHEQF overlooks the impact of socio-economic factors on learning and access to higher education, which may further marginalize already disadvantaged groups.
9. **Does not address regional disparities:** The NHEQF does not take into account the vast differences in the quality of higher education across regions in India, which may widen the gap between urban and rural areas and perpetuate existing inequalities.

## Conclusion
The University Grants Commission must address the confusion from multiple guidelines, frameworks, and regulators related to higher education to ensure that qualifications are clear, consistent, and ease access to higher education in India.

***Nut Graf:** The proposed National Higher Education Qualification Framework (NHEQF) has several limitations and challenges, including lack of clarity and coherence, inadequate representation of all disciplines and ignorance of socio-economic factors. The University Grants Commission must address these challenges to ensure that the NHEQF is effective and inclusive.*

## 14. Why the Northeast cannot be treated as a 'single homogenous' territory

**Syllabus:** Issues relating to development and management of Social Sector, Welfare schemes for vulnerable sections of the population by the Centre and the States.

**Mains:** Issues related to the development and management of social sectors particularly in the context of marginalised communities in the Northeast.

## Context
The article discusses the diverse and marginalised Northeast region of India, emphasising the need to understand its heterogeneity, social issues, and the challenges faced by migrants.

## Introduction
● The Northeast region consists of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura.
● The region is home to various ethnic communities with Indo-Chinese Mongoloid racial backgrounds.
● The idea of a homogenous Northeast is problematic, given its linguistic, cultural, and ethnic diversity.

## Historical Perspective: Colonial Influence
● British colonial rule governed the Northeast as a single entity, influencing its perception.
● This historical construct continues to affect the region's governance by the Indian state.

## Diverse and Heterogeneous
● Northeast India is as diverse as the entire country in terms of language, culture, and ethnicity.
● A seminar on 'Identity and Marginality in Northeast India' in 2017 highlighted the need to recognize heterogeneity. There is a need to highlight the elements of heterogeneity of the different groups and their experiences, contestations and conflicts.

**Key Issues in Northeast India**

- **Indigeneity:** Indigenous rights and recognition are significant concerns, with implications for land ownership and cultural preservation.
- **Policy and Economy:** Economic development policies need to address the region's specific needs and challenges.
- **Migration:** Northeastern migrants face marginalisation and discrimination in other parts of India.
  - Racial discrimination against Northeastern migrants in Delhi is a classic example of this issue.
  - The Bezbaruah Committee, established in 2014 to address the concerns of northeastern citizens residing across the nation, proposed the use of social media as a means to connect with people from the Northeast. Consequently, a dedicated helpline (1093) was integrated with the existing emergency helpline (100).
- **Land Rights:** Land is a critical livelihood factor, and disputes over land ownership are common.
- **Insurgency:** Ongoing insurgent movements in some states contribute to instability.
- **Militarization:** The presence of military forces affects daily life and security in certain areas.
- **State Violence:** Instances of state violence raise human rights concerns.
- **Laws like AFSPA:** The Armed Forces Special Powers Act has implications for civil liberties and security.
- **Reservation:** The debate over reservation policies for marginalised communities in the region.
- **Discrimination:** Discrimination against outsiders living in Northeast India also exists.

**Impact of Conflict on Women**

- In conflict-prone areas like Manipur, Nagaland, and Assam, ethnic violence has displaced communities.
- Women often become primary breadwinners due to displacement or the loss of male family members.
- Displacement also results in health challenges, including malnutrition, post-traumatic stress, and increased risk of communicable diseases.
- Land disputes during conflicts affect women's economic security.

**Complexities Within Marginalised Groups**

- Even within marginalised communities, there are complexities in addressing issues.
- For example, some Naga tribal bodies oppose women's reservation, citing the protection of customary laws.
- In matrilineal societies like Khasi, power dynamics can still be patriarchal.

**Conclusion**

- Understanding the complexities of Northeast India, including its diversity, identity, and key issues, is vital for promoting unity and addressing marginalisation effectively in the region.

*Nut Graf: Northeast India, a region rich in diversity, faces issues of marginalisation and discrimination. This article delves into its complexity, from historical roots to contemporary challenges.*

## 15. Children, a key yet missed demographic in AI regulation

**Syllabus:** Mechanisms, Laws, Institutions and Bodies constituted for the Protection and Betterment of these Vulnerable Sections.

**Prelims:** Artificial Intelligence, Digital India Act, UNICEF

**Mains:** Impact of AI on Children, Ethical Framework for Global expansion of AI

**Introduction**

- India is set to host the first-ever global summit on Artificial Intelligence (AI) in October.
- AI is also expected to contribute $500 billion to India's economy by 2025
- In this context, the Prime Minister has called for a global framework for the ethical expansion of AI.

**Protecting Children's Interests in the Age of Artificial Intelligence**

- The impact of AI on children's privacy, security, and well-being raises concerns.
- Without proper regulation, AI-based digital services may use opaque algorithms and dark patterns to exploit vulnerable youth.
- This can result in tech-based distortions of ideal physical appearances, leading to body image issues, as well as other negative effects like misinformation, radicalization, cyberbullying, sexual grooming etc.
- Children and adolescents must be equipped with tools to manage the unintended consequences of their online presence, including AI-powered deep fake capabilities that can be used to create and distribute morphed sexually explicit content.

- Intersectional identities, including gender, caste, tribal identity, religion, and linguistic heritage, must be considered in AI regulation to prevent biases and discrimination against marginalized communities.
- India's current data protection framework for children is insufficient, placing too much responsibility on parents to protect their children's interests and failing to facilitate safe platform operations and design.
- The upcoming Digital India Act (DIA) should better protect children's interests when interacting with AI by improving upon these existing approaches.
- India has the opportunity to pioneer efforts in mitigating the effects of artificial intelligence (AI) on young people, as many state-of-the-art AI applications, while not intentionally created for children, remain readily available to them via digital platforms.
- Regulation of AI must ensure that incentives are aligned to address issues such as addiction, mental health, and safety.

**The Role of Parents and Guardians**
- Parents and guardians play a vital role in safeguarding their children's online experiences. They are responsible for educating them about online safety, and making informed decisions about the apps and platforms their children use.
- However, this approach places an unfair burden on parents, who may lack the technical expertise or resources to effectively manage their children's online activities.
- Moreover, it fails to recognize the reality that children often assist their parents in navigating complex digital interfaces and user experiences.

**UNICEF's Guidance for Policymakers**
- To address these concerns, UNICEF has developed guidelines for policymakers on AI and children.
- These guidelines focus on creating a child-centred approach that promotes well-being, inclusion, fairness, non-discrimination, safety, transparency, explainability, and accountability.
- The guidelines advocate for an enabling environment that encourages the development of AI systems that cater to children's diverse needs and promote their best interests.

**Age-Appropriate Design Code**
- One effective strategy for ensuring child-friendly AI is the implementation of an Age-Appropriate Design Code.
- California's Age-Appropriate Design Code Act serves as a useful model.
- The code requires digital services to configure default privacy settings that prioritize children's privacy, assess algorithms and data collection methods for potential harm to children, and utilize clear, age-appropriate language for user-facing information.
- Similarly, India should develop an Age-Appropriate Design Code for AI that caters to the unique needs of its children.

**Institutionalizing Dialogue with Children**
- In addition to regulatory measures, it is essential to establish institutions that foster regular dialogue with children.
- Mechanisms such as Australia's Online Safety Youth Advisory Council, which includes members between the ages of 13 and 24, can provide valuable insights into the threats and benefits that young people encounter when interacting with AI systems.
- Such institutions will enable regulations to respond more effectively to emerging challenges and preserve the benefits that children derive from digital services.

**Conclusion**
- As India moves forward with its plans to introduce a new law to regulate harms on the internet, it is imperative that the interests of children remain at the forefront.
- By embracing standards, strong institutions, and best practices that promote openness, trust, and accountability, we can ensure that AI development and deployment benefit both children and society as a whole

**Nut Graf:** *A comprehensive legal framework to regulate the impact of artificial intelligence (AI) on children's privacy, security, and well-being is the need of the hour. The upcoming Digital India Act (DIA) should improve upon existing approaches to protect children's interests. By embracing standards, strong institutions, and best practices that promote openness, trust, and accountability, we can ensure that AI development and deployment benefit both children and society as a whole.*

## 16. With climate change, tackling new disease scenarios

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

**Prelims:** Intergovernmental Panel on Climate Change (IPCC), Integrated Disease Surveillance Programme, Integrated Health Information Platform (IHIP), Nipah Virus

**Mains:** Relation between Climate Change and Disease Outbreak

**Introduction:**
● The Intergovernmental Panel on Climate Change (IPCC) has issued a warning that climate change increases the risk of infectious diseases globally.
● Changes in temperature, precipitation, and humidity are disrupting disease transmission cycles.
● Mosquito-borne disease outbreaks are no longer following predictable patterns, with dengue fever experiencing two to three peak periods annually.
● Climate changes also impact the distribution of disease vectors and animal reservoirs that host pathogens.
● High temperatures have been shown to affect the genetic makeup of pathogens, increasing their infectivity and virulence.

**Climate Change and Rise of Infections**
● Habitat loss due to climate change is leading to an increase in human-animal interactions, resulting in the transfer of pathogens from wildlife to humans.
● The Nipah virus, which has caused several outbreaks in Kerala, is an example of a virus that does not harm animals but can be fatal to humans.
● According to a study published in **Nature Climate Change**, over half of all known infectious diseases threatening humans are worsening with changing climate patterns.
● New transmission routes for diseases now include environmental sources, medical tourism, and contaminated food and water.
● Climate change is transforming ecosystems, leading to the introduction of invasive species and the extension of the range of existing life forms, making it difficult for ecologists and epidemiologists to predict outbreaks.
● Human-induced climate change is creating an unprecedented health vulnerability crisis, with countries like India facing severe health crises, including dengue epidemics and Nipah outbreaks (as seen in Kolkata and Kerala respectively).
● Early summers and erratic monsoons caused by climate change are also leading to water scarcity in parts of India, exacerbating health crises.

**Role of Surveillance:**
● Changes in disease patterns require updated strategies for detection and response.
● India has improved its outbreak reporting over the past two decades.
● The Integrated Disease Surveillance Programme (IDSP) was introduced in 2007 and reported an increase in outbreaks from 553 in 2008 to 1,714 in 2017.
● IDSP was replaced by the Integrated Health Information Platform (IHIP) in 2018, which added 20 additional disease conditions, was web enabled with a realtime electronic information system and provided more detailed data.
● However, IHIP has not met expectations for real-time tracking of emerging disease outbreaks.
● The current surveillance design is insufficient for addressing emerging climate change-related disease threats.
● Mitigating the spread of climate change-induced diseases requires a multi-faceted approach that includes protecting ecosystems, reducing greenhouse gas emissions, and implementing active pathogen surveillance.
● A **unified approach known as One Health**, which integrates monitoring of human, animal, plant, and environmental health, is essential for preventing outbreaks, particularly those originating from animals.
  ○ One Health programs should be launched in India, with increased synergy between central and state governments and their various agencies.
  ○ Animal husbandry, forest and wildlife, municipal corporations, and public health departments need to collaborate and establish robust surveillance systems.
  ○ Building trust, sharing data, and defining clear roles and responsibilities are crucial for the success of these efforts.
  ○ The Office of the Principal Scientific Adviser to the Prime Minister has been leading this initiative, but with new funding sources available, greater coordination and management will be necessary.

**Way Forward**
- There is a global obsession with the next mysterious "disease X," but it is actually the familiar annual cycles of known agents such as influenza, measles and diarrhoea that will continue to challenge public health systems.
- Climate change has a broader impact than infectious diseases; it also worsens injuries and deaths from extreme weather events, respiratory and cardiovascular diseases, and mental health issues.
- The re-emergence of Nipah in Kerala serves as a reminder that solely relying on biomedical responses to diseases is insufficient.

- To address the challenges posed by a changing climate and the increasing threat of infectious diseases, protecting ecosystems, fostering collaboration, and adopting the One Health approach are crucial.

*Nut Graf: Nipah and Dengue outbreaks have highlighted the need for adopting a holistic approach to address the increasing threat of infectious diseases in the context of climate change. Protecting ecosystems, fostering collaboration, and embracing the One Health paradigm to safeguard the planet and its inhabitants is the need of the hour.*

## 17. Reform can address India's kidney transplant deficit

**Syllabus:** Issues Relating to Development and Management of Social Sector/Services relating to Health

**Mains:** Organ Donation, Regulation of Kidney Transplant

**Prelims:** Chronic Kidney Disease, The Transplantation of Human Organs and Tissues Act 1994

**Context**
- India faces an alarming shortage of organs for transplantation, particularly kidneys.

**Data**
- In 2022, over 200,000 patients required a transplant, but only around 7,500 transplants were performed (approximately 3.4%).
- The transplant rate in developed countries like the US is around 20%, highlighting the disparity between India and these countries.
- The high prevalence of Chronic Kidney Disease (CKD) in India, affecting approximately 17% of the population, contributes to the demand for kidney transplants.
- CKD often progresses to end-stage renal disease (ESRD), making a kidney transplant the most effective treatment option.
- Transplants are preferred over alternative treatments due to their advantages in quality of life, patient convenience, life expectancy, and cost-effectiveness.

**State of the Kidney Transplant Ecosystem**
- **Patients have few options for obtaining a kidney:**
  1. **Deceased donor transplant:** Limited by lack of donations, specific requirements for nature of death, and infrastructure challenges.
  2. **Living related donor transplant:** Restricted by compatibility requirements (blood type and tissue type) between donor and recipient, with many relatives and friends being incompatible.
- Strict regulations in India, rather than a lack of medical facilities, contribute significantly to the gap in transplant rates.
- The current regulations need urgent reform to allow for two innovative kidney exchange methods: kidney 'swaps' and kidney 'chains'.

**Kidney Swaps and Kidney Chains**
- **Kidney swaps** involve the exchange of kidneys between two strangers, while **kidney chains** involve a series of donations where each recipient's relative donates a kidney to another recipient.
- Legal roadblocks are preventing these methods from being used effectively in India.
- For kidney swaps, the law currently allows only near-relatives to be donor-recipient pairs, but recent court judgments in Kerala, Punjab, and Haryana have allowed non-near-relative pairs after verification.
- There should be a national coordinating authority for swaps, like there is for direct transplants from cadavers, to create larger and more diverse pools of potential donors and recipients.
- Kidney chains are not happening in India because it is illegal to donate a kidney out of altruism in all states except Kerala.
- Harsh laws regulating swaps and chains have led to a proliferation of black markets for kidneys, which put desperate participants at risk.

**Reforms are happening at a slow pace**

- Reforms in kidney exchange laws have been slow in India.
- The Transplantation of Human Organs and Tissues Act 1994 recognized transplant possibilities from brain-stem death patients.
- The 2011 amendment legalized swap transplants and established a national organ transplant program, but the network remained underdeveloped.
- **Transplantation of Human Organs and Tissues Rules 2014 gave the following provisions:**
  - The Authorization Committee deciding on the issue of transplant requires a minimum of four members, including the chairman, secretary (health), or appointee, and director of health services or appointee.
  - When the donor and recipient are not related, the Authorization Committee ensures that there is no financial exchange between them.
  - In cases of swap donation, the Authorization Committee of the hospital, district, or state where the transplant is planned must approve it, and the donation is only allowed from close relatives of the swap recipients.
  - If the recipient needs a life-saving transplant urgently, the donor or recipient can ask the hospital in charge to speed up the Authorization Committee's assessment.
  - The Authorization Committee must make a final decision within 24 hours of the meeting and display it on the hospital's notice board and website within 24 hours.
  - An apex national networking organization will be established at the center, along with regional and state-level networking organizations.
  - State units will be connected to hospitals, organ/tissue labs, and tissue banks within their region and to regional and national networking organizations.
  - A National Registry on Donors and Recipients of Human Organs and Tissues will be created, accessible through a dedicated website with national, regional, and state-specific information.
- Recent government reforms (February 2023) relax age and domicile requirements for seeking organs, but they do little to address the underlying issue of insufficient kidney supply.

**Way Forward**

- Allowing and encouraging altruistic donation, non-near relative donation for swaps, and improving kidney exchange infrastructure would be beneficial.
- Other countries like Australia, Canada, Israel, the Netherlands, Spain, the UK, and the US have already set precedents for allowing altruistic donations and establishing national registries for kidney chains and swaps.
- India can adapt and learn from these successful regulations to improve the lives of its citizens.

**Nut Graf:** *India faces a critical shortage of kidneys for transplantation, with only 3.4% of patients receiving transplants in 2022. Reforms are needed to allow for kidney swaps and chains, which could expand the donor pool and increase transplant rates.*

# GOVERNANCE

## 1. Court's order and the ASI survey are flawed

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

**Mains:** Places of Worship Act and Gyanvapi mosque issue

### Background
- In the Ram Janmabhoomi temple case, the Supreme Court of India's Constitution Bench recently provided an interpretation of the Places of Worship (Special Provisions) Act, 1991.
- In accordance with Article 141 of the Indian Constitution, the Court rendered a legally binding interpretation of the Act that is now enforceable in all courts located on Indian territory.
- In later instances, all courts must adhere to its rulings in accordance with the doctrines of precedent and stare decisis.

### Why Parliament enacted the Places of Worship Act?
- The essential principles of the Constitution are safeguarded and protected by the Places of Worship Act, which was passed by Parliament in 1991.
- The law offers protection for the maintenance of the religious identity of places of public worship and guards against their conversion.
- The Parliament concluded that freedom from colonial authority provides a constitutional framework for redressing historical injustices by instilling faith in every religious group.

### Constitutional Basis to an Assurance
- An Act to prevent the conversion of any house of worship and to make provisions for the maintenance of the religious character of any house of worship as it existed on the 15th day of August 1947, according to the Preamble to the Act.
- By requiring that a place of public worship's nature not be changed, it speaks to the future.
- The law aims to establish a constructive responsibility to preserve each place of worship's religious identity as it was on August 15, 1947, when India became independent.
- Conversion, with its grammatical variants, involves alteration or change of any kind, according to the Act's definition.

### Supreme Court's Order and Concerns associated with it
- Serious doubts about its legality, propriety, and justice are raised by the Supreme Court's decision to decline to stay the order of the Allahabad High Court from the Anjuman Intezamia Masjid Committee.
- The Bench granted permission for the Archaeological Survey of India (ASI) survey on the grounds that the primary consideration in any Act of 1991 determination is the religious nature of a place of worship as it was on August 15, 1947.
- In the Ram Janmabhoomi temple case, Justice Chandrachud himself was a party to a binding precedent that the Bench has egregiously disregarded.
- There can be no question in anyone's mind that the Gyanvapi mosque has served as a Muslim community center for public prayer for many years.
- Therefore, it is unclear whether or how it may be transformed into a house of worship for a different religious sect.
- The Supreme Court entirely disregarded the fact that the Act imposed duties on the state, every citizen, and those in charge of overseeing national affairs at all levels.

### Conclusion
The law speaks to both the nation's present and future. The purpose of conserving the nature of places of public worship is to ensure that the past is not used to oppress the present or the future. The ultimate keeper of morals and constitutional principles is the Supreme Court. Applying the Ram Janmabhoomi Temple Case ruling's ethos, the three judges should have been incredibly sensitive to the rights and sentiments of the minority population. Any majoritarian strategy might really raise concerns in the minds of some segments of society at a key moment when elections are near.

**Nut Graf:** *The Supreme Court of India's decision in the Gyanvapi mosque issue calls into question its legality, appropriateness, and justice.*

**2. Status of the Right to Information Act**

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

**Mains:** Amendments to Right to Information Act and concerns associated with it

**Background**
● The Right to Information Act of 2005 assisted individuals in obtaining information and data from Central and State agencies that were not easily accessible in the public domain.
● Any citizen may submit requests under the RTI Act for access to data, documents, and other information held by the government.
● The RTI Act of India has frequently been regarded as one of the most comprehensive public records access laws in the world.
● Activists are concerned that the system is becoming less and less effective in recent years, cutting off an essential tool for holding public officials responsible.

**Amendments to the RTI Act and Concerns**
● The Right to Information Act forbids the government from disclosing citizens' personal information unless there is a compelling public interest in doing so. It enables some facts to be kept secret for the sake of national security and sovereignty.
● This conditional ban was changed to an absolute prohibition by the Digital Personal Data Protection Act of 2023.
● There are also fears that strong public officials would use this blanket restriction on sharing personal information to avoid accountability.
● Previous RTI Act changes have also prompted concerns.
● The Right to Information (Amendment) Act of 2019 granted the Union Government unilateral authority over how long information commissioners, who review appeals against inadequate or missing RTI replies, can serve and how much they are paid.

**Other Concerns with RTI Act**
● **Dependency:** The RTI Act isn't the only way campaigners see the transparency it has brought about undercut. The execution of the RTI Act is contingent on subordinate regulations issued by the Union Government and state governments.
  ○ For example, it is up to the states to select which payment methods a public authority can take. Some states, such as Tamil Nadu, do not accept Indian Postal Orders (IPOs), which are checks that may be purchased at post offices and attached as payment to an application.
● **Unnecessary Delays:** Inadequate nominations to information commissioners — the Central Information Commission (CIC) and State Information commissioners (SICs) — have further eroded trust in the RTI structure, since appeals often take months or even years to be considered, if at all.
  ○ For example, the Jharkhand SIC has been without commissioners to hear appeals since May 2020, thereby banning the power to challenge inadequate RTI Act administration in the state.
● **Online RTIs**
  ○ Allowing RTI applications to be completed online removes several hurdles; rather than procuring unusual financial instruments, individuals may simply register a request online and pay using UPI.
  ○ Many states, however, do not have an online RTI portal, and even if they have, many State Government agencies are not enrolled on the platform.
  ○ While numerous Union Government agencies are on the RTI site, filing applications on it has gotten more difficult.
  ○ Having an account on the RTIOnline platform enables users to have their personal information automatically filled in on each application.
  ○ However, the option to establish an account is no longer available, and all users must enter their information again each time they submit an application.
  ○ Furthermore, historical application data has been skipping in and out of the platform.

**Conclusion**
● Beyond the obvious structural issues that RTI institutions and websites provide, discontent is developing at the most fundamental level.
● This shows that individuals are becoming increasingly unsatisfied with the information they receive from public representatives.
● The campaigners have long warned of the RTI Act's weakening, and the majority of the harm they have witnessed is not due to changes in the law's language.

● Furthermore, multiple institutions across several Government apparatuses perform their roles, resulting in a narrowing of avenues to efficiently make requests and acquire information after doing so, and having appeals fall on unstaffed appellate bodies.

*Nut Graf:* *Although activists have long expressed concern about the RTI Act's deterioration, the majority of the harm they have observed does not simply result from modifications to the law's language.*

## 3. Laws governing forests of the Northeast

**Syllabus:** GS-2, Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

**Mains:** Laws governing forests of the Northeast

**Background**
● Recently, a resolution rejecting the Forest (Conservation) Amendment Act, 2023 was overwhelmingly approved by the Mizoram Assembly.
● It strives to safeguard the interests and rights of the Mizorami people.
● The amendment permits the rerouting of forest area for the construction of highways, railroads, or strategically important linear projects involving India's external boundaries or lines of control.
● In accordance with the Forest (Conservation) Act (FCA) of 1980, this is permitted without a forest clearance.

**Applicability of FCA to the Northeast**
● Special constitutional safeguards, such as Article 371A for Nagaland and 371G for Mizoram, apply throughout the region.
● The application of any law passed by Parliament that interferes with Naga and Mizo customary law and process, as well as ownership and transfer of land and its resources, is prohibited under these rules.
● Only if the Legislative Assemblies of these States agree in a resolution may such laws be applied to those States.
● The FCA is also applicable in the remaining Northeastern states of Arunachal Pradesh, Sikkim, Manipur, Meghalaya, and Tripura, which are all Sixth Schedule Areas.
● In terms of FCA clearance, Arunachal Pradesh came out on top, followed by Tripura, Assam, Manipur, Sikkim, and Meghalaya.

**What is a Recorded Forest Area (RFA)?**
● Since 1980, the FCA has resulted in the diversion of more than a million hectares of forest countrywide. Under the Indian Forest Act of 1927 or its State variants, FCA was established to clear the forest.
● Under the Godavarman case 1996, the Supreme Court extended the FCA to unclassified forests by defining "forest land" under the FCA to "not only comprise 'forest' as understood in the dictionary sense".
● These woods have been noted but not identified as such. The Northeast is made up of more than half Recorded Forest Area (RFA).
● Of this, 53% are unclassified forests that are managed by private persons, clans, village councils, or communities and are subject to customary law and practices. The remaining area is state-controlled woodland that has been informed.

**Applicability of FRA Act in the Northeast Region**
● The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA) 2006 defines "forest land" as unclassified forests, undemarcated forests, existent or considered forests, protected forests, reserved forests, sanctuaries, and national parks.
● Nothing stops these States from taking suo motu notice of these rights already in existence and requesting approval from the relevant Gram Sabha before awarding titles.
● Under Section 12 of the FRA, which permits this, the Ministry of Tribal Affairs may also provide orders that are enforceable in court.
● It would provide traditional community forest tenure rights with an additional measure of legal stability.
● Except for Assam and Tripura, none of the Northeastern States have implemented FRA.
● As needed by Article 371A, the Nagaland Assembly has not yet made up its mind about this bill. It has been under investigation for years by a committee.

**Way Forward**

- For a forest diversion request to be accepted in 2009, the Environment Ministry required FRA implementation and the Gram Sabha's previous knowledge and permission.
- The District Collector, who oddly also served as chairman of the District Committee that grants FRA titles, was given charge of the task.
- The in-principle forest clearance for which the Collectors' certificate of FRA compliance was issued was changed to the Stage II final clearance.
- The Ministry's 2022 Forest Conservation Rules, however, completely abolished FRA compliance prior to final approval.
- Under the FRA, the Ministry of Tribal Affairs may also issue directives that are enforceable in court to acknowledge and resolve forest rights.
- This gives the States and the Tribal Affairs Ministry a method to safeguard the forests while also giving forest residents some measure of tenurial security.

*Nut Graf: States can develop and implement legislative mechanisms to guarantee required compliance with the FRA before approving a forest diversion scheme, as well as obtaining Gram Sabha approval before giving up forest land.*

## 4. Jal Jeevan Mission

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation.

**Mains:** Impact of Jal Jeevan Mission

**Prelims:** About Jal Jeevan Mission

**Context**

The article explores the transformative impact of India's Har Ghar Jal initiative, which aims to provide piped water to every rural household.

**Introduction**

- The Har Ghar Jal initiative, part of the Jal Jeevan Mission, aims to provide piped, potable water to every rural household in India.
- This initiative has significantly impacted millions of rural Indians, reducing their reliance on hand pumps for water.

**Improving Access to Clean Water**

- Prior to the initiative, villagers had to make multiple trips to hand pumps for drinking and cooking water.
- Hand pumps were often unreliable, requiring frequent maintenance.
- The Har Ghar Jal initiative has brought tap water to every household improving access and convenience.

**Ambitious National Goals**

- In 2019, Prime Minister Shri Narendra Modi announced the goal of providing piped water to every rural household by 2024.
- As of September 2023, the initiative claims to have provided water connections to about 67% of targeted households, with 1.5 crore in Uttar Pradesh alone.

**Critical Role of Hand Pumps**

- Hand pumps have been vital for providing groundwater, especially in regions like Bundelkhand with rocky subsurfaces.
- They have been a lifeline for rural communities but faced challenges such as rapid wear and tear.
- The India Mark-2 hand pump, a collaborative effort involving UNICEF and others, significantly improved reliability.

**Transitioning Away from Hand Pumps**

- The Har Ghar Jal initiative aims to make hand pumps obsolete by providing piped water connections.
- It reduces individual dependence on groundwater, addressing concerns about depleting water tables.

**Water Treatment Plants**

- Multi-crore water treatment plants have sprung up in various districts under the initiative.
- These plants aim to provide clean and treated water to households.
- Challenges include supply interruptions during maintenance and addressing villagers' preference for untreated groundwater.

**Claim versus reality**
- Even in villages officially certified as having 100% coverage of functional household tap connections (FHTC), many households do not actually have taps. Some do have taps, but are not getting any water through them; even in the best-case scenario, such households get no more than two hours of water.
- According to the scheme's definitions, an FHTC household is one where at least 55 litres of potable water per person a day is made available to every household.
- In 100 out of the 398 villages in the district, eligible household tap connections had been fully connected with running water supply. However, the JJM's official dashboard reports that all 385 villages have a "100% household tap connection".
- All of these households are included in Uttar Pradesh's official claim of 1.6 crore households which have functional tap connections, up from 5.1 lakh households in 2019, conveying the impression that they all have access to tap water.
- The State has reported a dramatic surge of such tap connections in the past two years; they make up about 6% of the 13 crore rural households in the country connected to tap water.

**Supply challenges**
- In Luhari village, whose 295 houses have all been marked as having 'tap connections', village pradhaan (head) Bhan Singh said that most of the houses have pipes, while the metal taps are present in a few houses'. Here, too, the challenge is water supply. His own house relies on groundwater drawn from a borewell.
- In the Kunata village women continue to walk to the several handpumps or to the village well to draw water.
- A major challenge of the mission was commissioning pipes that ran for hundreds of kilometres over undulating terrain, given that a crack or leak can cause disruptions in supply.

**Conclusion**
- The Har Ghar Jal initiative has made significant strides in providing piped water to rural households in India.
- While it has improved convenience and reduced reliance on hand pumps, challenges remain in ensuring consistent and accepted access to clean water in rural areas.

*Nut Graf: The Har Ghar Jal initiative, part of the Jal Jeevan Mission, is reshaping water access in rural India by replacing hand pumps with piped water connections, though challenges persist in ensuring acceptance and reliability.*

## 5. The new Post Office Bill, 2023

**Syllabus:** GS-2, Government Policies and Interventions for Development in various sectors and Issues arising out of their Design and Implementation.

**Mains:** Issues with the Indian Post Office Act of 1898 and how The new Post Office Bill, 2023 addresses it.

**Context:**
- The Indian Post Office Act of 1898 primarily focused on traditional mail services.
- It lacked provisions for the evolving role of post offices in offering citizen-centric services.
- The Rajya Sabha introduced the new Post Office Bill in 2023 during the monsoon session of Parliament.
- The purpose of the new bill is to replace the outdated 1898 Act, recognizing the changing role of post offices in delivering a wide range of citizen-centric services.

**Changes and Provisions in the New Post Office Bill:**
- **Expanded Role and Flexibility:**
  - The new Bill grants the Director General of Postal Services authority to create regulations for various services beyond traditional mail.
  - This flexibility allows the postal department to adjust service prices to stay competitive and respond swiftly to market demands.
- **Empowering the Central Government:**
  - The central government, through the new Bill, gains the power to intercept, open, or detain postal items in the interest of national security, public order, or other emergencies.
  - This provision aims to combat smuggling and unlawful transmission of contraband through postal parcels.
- **Limitations on Courier Firms:**
  - While the new Bill empowers India Post, courier firms remain largely unregulated in this context.
  - India Post holds less than 15% of the market share in the courier/express/parcels (CEP) industry, limiting the effectiveness of this provision.

- **Registration of Small Courier Players:**
  - The Bill lacks provisions for small courier operators to register with designated authorities.
  - Such a provision could strengthen the Bill's ability to control contraband goods in parcels within the courier industry.
- **Futuristic Postal Delivery:**
  - The new Bill introduces standards for addressing items, address identifiers, and the use of postcodes.
  - This move may lead to the adoption of digital addressing using geospatial coordinates to identify premises.
  - Digital addressing has the potential to enhance sorting and enable accurate drone deliveries.
- **Ending Exclusive Privilege:**
  - The most significant change in the new Bill is the elimination of the provision granting the central government an exclusive privilege to convey letters and perform related services.
  - This change reflects the evolving communication landscape, with written personal communication via letters becoming less common in the age of mobile technology.
  - The distinction between 'letter' and 'document' will become less relevant under the new Act.
- **Acknowledging Changing Realities:**
  - The removal of the "exclusive privilege" provision in the new Post Office Bill acknowledges the changing nature of communication and postal services in India.
  - It aligns the legal framework with the modern reality of communication and service delivery.

*Nut Graf:* *The new Post Office Bill (2023) recognizes the evolving role of post offices, introduces provisions for enhanced security, addresses the challenges in the courier industry, and acknowledges the changing dynamics of communication in India.*

## 6. MEME in NEP

**Syllabus:** GS 2- Governance

**Prelims:** National Education Policy

### Introduction
- Objections raised by student and teacher organisations regarding Multiple Entry and Multiple Exit (MEME) in the National Education Policy (NEP).
- The Parliamentary Standing Committee on Education calls for discussions with stakeholders.

### Challenges with MEME Implementation
- High annual student intake in Indian higher education institutions poses difficulties.
- MEME could disrupt pupil-teacher ratios, as institutions can't predict student exits and entries.
- Uneven geographical distribution of institutions, especially in rural areas, adds complexity.

### Benefits of MEME
- MEME offers flexibility and choice in educational pathways for students.
- Calls for comprehensive guidelines, eligibility criteria, credit transfer mechanisms, and a clear framework.
- Suggests a standardised Credit Accumulation and Transfer (CAT) system to ease transitions between educational levels.

### Recommendations
- Calls for wider consultations between the Union Education Ministry, universities, regulatory bodies, and stakeholders.
- Seeks solutions to address the challenges faced in MEME implementation.
- The Kerala government decided not to implement MEME in state colleges and universities.

## 7. What are the findings of the Parliament panel on NEP?

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation.

**Prelims:** About National Education Policy (NEP)

**Mains:** Government policies and interventions in the Education sector, National Education Policy

### Context
The Parliament Standing Committee on Education has presented a report on the implementation of the National Education Policy (NEP) 2020 in higher education, addressing critical issues and proposing recommendations.

### Introduction
- The Parliament Standing Committee on Education presented a report on the "Implementation of the National Education Policy (NEP) 2020 in Higher Education" during a special session of Parliament.
- This report examines the progress and salient features of NEP's implementation in higher education, based on interactions with various stakeholders.

### State-Centric Higher Education
- The report highlights that 70% of the 1,043 universities in India are under the State Act, with 94% of students enrolled in State or private institutions and only 6% in Central higher educational institutions.
- Emphasises the pivotal role of States in providing higher education.

### Key Issues Discussed
- The committee addressed various issues including rigid separation of disciplines, limited access to higher education in disadvantaged areas, lack of local language instruction, insufficient faculty, limited institutional autonomy, inadequate focus on research, ailing regulatory mechanisms, and subpar undergraduate education.
- A vision for 2030: Each district should have at least one multidisciplinary higher education institution, and the Gross Enrolment Ratio should rise from 26.3% in 2018 to 50% by 2035.

### Recommendations
- Urges the Union and State Governments to allocate adequate funds for Socially and Economically Disadvantaged Groups (SEDGs) in education.
- Encourages setting clear targets for higher Gross Enrolment Ratio for SEDGs, enhancing gender balance, and offering financial assistance and scholarships to SEDGs in public and private institutions.
- Advocates inclusive admission processes, curriculum, and employability-focused programs.
- Recommends developing more degree courses in regional languages and bilingual formats.
- Suggests specific infrastructure improvements for physically challenged students and strict enforcement of anti-discrimination and anti-harassment rules.

### Positive Example: Jammu and Kashmir
- Commends Jammu and Kashmir for being among the first regions to implement NEP in all its higher education institutions starting from the academic session of 2022.
- Highlights positive outcomes, such as a shift in teaching methods towards lifelong learning opportunities.

### Funding Enhancements
- Proposes enhancing the effectiveness of the Higher Education Financing Agency (HEFA) by diversifying funding sources, including partnerships with private sector organisations, philanthropic foundations, and international financial institutions.
- Recommends reviewing and adjusting interest rates on HEFA loans to ensure affordability and competitiveness for higher education institutions.

### Concerns about MEME System
- Expresses concerns about the practicality of implementing the multiple entry and multiple exit (MEME) system in India.
- Suggests that MEME may disrupt the pupil-teacher ratio and create uncertainties in student enrollment.

*Nut Graf:* *The report of the Parliament Standing Committee on Education assesses NEP 2020's progress in higher education, emphasising the role of states, highlighting key issues, and offering recommendations to improve access, quality, and inclusivity in India's higher education landscape.*

## 8. Why is the government pushing for regulatory mechanisms for OTT services?

**Syllabus:** Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation. Statutory, regulatory and various quasi-judicial bodies.

**Mains:** Regulatory mechanisms for OTT services.

**Prelims:** OTT services and TRAI

**Context**
The Telecom Regulatory Authority of India (TRAI) sought input on regulating OTT communication services, sparking a debate involving stakeholders, including telecom providers, over issues of revenue sharing and regulation.

**Introduction**
● On July 7, 2023, the Telecom Regulatory Authority of India (TRAI) released a consultation paper on regulating Over-The-Top (OTT) communication services.
● The consultation paper also mentions the possibility of selective banning of these services.
● Stakeholders submitted responses to TRAI by September 1, 2023, and guidelines on regulating OTT services are anticipated.

**Background**
● The discussion on selective banning of OTT services arose from a notice issued by a Parliamentary Standing Committee to the Department of Telecom (DoT) due to concerns about unrest caused by these widely used platforms.
● It is essential to distinguish between OTT communication services (e.g., WhatsApp, Signal, Meta, Google Meet, Zoom, etc.) and 'content' OTTs (e.g., Netflix, Amazon Prime). Content regulation falls under the Ministry of Information and Broadcasting (MIB), not TRAI.
● TRAI sought stakeholder input on defining OTT and cost-sharing mechanisms between Telecom Service Providers (TSPs) and OTT services.

**Conflict Between TSPs and OTTs**
● Telecom Service Providers argue that OTTs should be regulated and charged because they utilise the infrastructure developed by telecom operators without contributing to it.
● OTT communication services offer various services, including multimedia messaging, instant messaging, and voice and video calls, over the internet, reducing traditional telecom services' revenue streams.

**Demands and Proposals**
● Cellular Operators Association of India (COAI) demands a policy framework for fair contribution from large OTT service providers to telecom network operators based on assessable criteria like subscribers or data usage.
● COAI argues that OTT communication service providers should pay a fair share charge to TSPs to support network expansion and contribute to the exchequer.
● Internet Service Providers Association of India suggests that OTT services should be treated as the same services offered under telecom licences, subject to the same rules.

**Other Stakeholder Perspectives**
● Internet and Mobile Association of India (IAMAI) opposes cost-sharing models like "sending party network pays" (SPNP) as it would result in double charges for consumers and potentially raise internet usage costs.
● IAMAI asserts that such models conflict with the principle of net neutrality.
● The Internet Freedom Foundation expresses reservations about the proposal to selectively ban OTT services.

**Arguments for Banning OTT Services**

- COAI argues that licensing OTT communication services would facilitate location-based access restrictions and selective blocking.
- Source-level blocking is proposed as a means to implement restrictions more effectively.
- IAMAI contends that additional regulations or selective bans on OTT services are unnecessary.
- Broadband India Forum (BIF) firmly opposes selective bans, citing existing regulations under the IT Act, 2000, Consumer Protection Act, 2019, and associated Acts and Rules.
- COAI suggests exploring and implementing options for selective banning and recommends IT solutions for swift suspension of OTT services during internet outages.

**Conclusion**

- The debate over regulating and potentially banning OTT communication services in India revolves around issues of revenue sharing, infrastructure usage, consumer costs, and internet freedom.
- The final decision on the regulatory framework for OTT services in India will have far-reaching implications for both service providers and consumers.

***Nut Graf:*** *TRAI's consultation paper on regulating OTT communication services has ignited a discussion on the need for such regulation, with telecom providers advocating for revenue-sharing mechanisms and potential selective bans.*

# DISASTER MANAGEMENT

## 1. Are natural disasters man-made?

**Syllabus:** GS-3, Disaster and Disaster Management.

**Mains:** Are Disasters Anthropogenic or Natural? Suggest a policy to make India disaster-proof.

### Introduction:
- Natural disasters, such as floods and landslides, occur regularly and can have devastating consequences.
- In many cases, the extent of damage and loss of life associated with these disasters is exacerbated by poor planning and human actions.
- This raises the question of to what extent natural disasters can be considered man-made, given the influence of human activities on their severity and impact.

### The Role of Human Actions:
- Man-made factors play a significant role in amplifying the scale and impact of natural disasters.
- Vulnerable populations, often marginalized and at higher risk, require specific attention and tailored solutions.
- The need for collective and bottom-up approaches is emphasized to address the challenges posed by natural disasters effectively.

### Anthropogenic Climate Change:
- Human activities, particularly those contributing to greenhouse gas emissions, have been instrumental in causing anthropogenic climate change.
- This global phenomenon has led to an increase in the frequency and intensity of climate-related hazards, such as heavy rains and extreme weather events.
- In addition to climate change, human actions include building on floodplains, encroaching on water bodies, and planning cities without considering sustainability, all of which contribute to the vulnerability to natural disasters.
- While humans are not solely responsible for these disasters, they have played a significant role in exacerbating the problem. Recognizing this responsibility is crucial for finding solutions and learning from past mistakes.

### Evolution of Disaster Preparedness:
- India has a long history of facing natural disasters, predating the emergence of climate change as a catalyst for such events.
- Urbanization and population density have transformed natural landscapes, leading to changes in disaster patterns.
- Government agencies responsible for regulating urban development and planning must adapt to these changing landscapes.
- The case of Mumbai illustrates varying levels of disaster preparedness, where the city has made efforts to address flooding issues compared to other areas like Delhi, which faces recurrent floods.

### Balancing Development and Sustainability:
- Development often translates into infrastructure growth, which is necessary for economic progress and improving the quality of life for citizens.
- However, sustainable development should encompass not only economic factors but also considerations for society and the environment.
- Achieving sustainability requires careful urban planning, with a focus on environmental implications, to avoid exacerbating natural disaster risks.

### Challenges in Implementing Knowledge:
- While knowledge about natural disasters exists, it is not static and continues to evolve.
- One common challenge is the underestimation of disaster risks due to incomplete or outdated data and a lack of robust infrastructure for data collection and monitoring.
- **For example**, in the Himalayan region, there is a limited understanding of rainfall patterns and risks due to an inadequate observational network.
- The availability and accuracy of data play a crucial role in estimating and mitigating disaster risks.

**The Disconnect in Decision-Making:**
● India has institutions dedicated to monitoring and understanding the climate crisis, including rainfall patterns and disaster risks.
● However, the disconnect arises in the decision-making process, where political, economic, and developmental interests may conflict with environmental preservation.
● Decision-makers must consider long-term risk assessments, vulnerability assessments, and socioeconomic factors when planning for disaster resilience.
● Bridging this gap requires the involvement of experts from both public and private agencies to develop modern solutions that align with current disaster risks and challenges. Ultimately, political will plays a crucial role in implementing these solutions effectively.

***Nut Graf:*** *In the face of escalating natural disasters, including floods, landslides, and droughts across India, it is needed to know the extent to which human activities and anthropogenic climate change contribute to the severity of these calamities. It is suggested to consider the evolution of disaster preparedness, making a delicate balance between development and sustainability, removing obstacles in implementing knowledge, and the critical role of informed decision-making in mitigating disaster risks.*

## 2. Redouble efforts to reduce disaster risks, Stocktaking calamity

**Syllabus:** Environmental Conservation, Environmental Degradation, Disaster and Disaster Management.

**Prelims:** United Nations Global Stocktake report, Paris Agreement and Climate Goals, Sendai Framework for Disaster Risk Reduction, Sustainable Development Goals, Cyclone Biparjoy, Disaster Risk Reduction Working Group

**Mains:** India's leadership in Disaster Risk Reduction, Global Efforts for Disaster Management

**Context:**
● The world is at a crucial juncture, with disaster related risks increasing faster than they are being reduced which was acknowledged in the recent G-20 summit.

**Increasing risk of disasters**
● The COVID-19 pandemic, war, financial crisis, and food insecurity are testing the global ability to cope and mitigate.
● **Climate Crisis**
  ○ The climate crisis is increasing extreme weather events that are occurring more frequently and with greater intensity. Increase in disasters is a trend and not an exception. Examples include the flooding in China, wildfires in Europe and Hawaii etc.
  ○ The United Nations' Global Stocktake report has highlighted the significant challenges facing major economies in reducing greenhouse gas (GHG) emissions.
  ○ The report serves as a guide for discussions leading up to the 28th Conference of Parties in Dubai and assesses progress made by countries since 2015 in reducing GHG emissions.
  ○ The world is currently on track to exceed the Paris Agreement's limit of a 2°C increase in global emissions, and much more effort is needed to achieve the goal of limiting warming to 1.5°C.
  ○ Despite this recognition, little progress has been made in terms of energy transition, as G-20 countries account for 93% of global operating coal power plants and 88% of proposed ones.
● **Financial Distress**
  ○ Vulnerable countries and communities are being affected the most despite contributing the least to the climate crisis.
  ○ Most of the 50 countries vulnerable to climate change also suffer from severe debt issues.
  ○ In 2022, India faced multiple extreme weather events and severe monsoon has resulted in widespread loss of livelihood and lives.

**Efforts at Adaptation and Mitigation of Disasters**

● **Global Efforts:**
  ○ In the recent G-20 summit, leaders recognized the need for $5.8-$5.9 trillion in funding for developing countries between now and 2030 and $4 trillion annually for clean energy technologies by 2030 to achieve net zero emissions by 2050.
  ○ The Sustainable Development Goals (SDGs) and commitments made in the Conference of Parties at Paris provide a global blueprint for peace and prosperity if implemented correctly.
  ○ The Sendai Framework for Disaster Risk Reduction sets a global framework for decreasing catastrophe risks, although progress has been slow. UN Member States have also agreed to accelerate resilience-building efforts along these lines.
  ○ Important lessons are being taken from the COVID-19 epidemic about the value of systemic disaster risk reduction, resilience, and adaptation. Digital technologies like computer modeling and India's CoWin digital vaccination platform have emerged due to the pandemic.

● **India's Efforts:**
  ○ India's leadership in disaster risk reduction has also been exemplary; all 28 states have created their disaster management strategies resulting in a significant decrease in extreme weather event fatalities.
  ○ India's early warning system for cyclones covers its whole coastline and has helped cut cyclone-related mortality by 90% over the previous 15 years.
  ○ Local heatwave action plans have reduced heatwave deaths by more than 90%.
  ○ Cyclone Biparjoy in Gujarat showed that effective preparation, reaction, and early warning and action systems may result in zero casualties during natural disasters.
  ○ Significant changes to disaster risk financing have been implemented by the 15th Finance Commission in India. For disaster preparedness, response, recovery, and capacity building, the Indian government has allocated $28.6 billion.
  ○ On the international front, India supports disaster resilience and sustainability via initiatives like the Coalition for Disaster Resilient Infrastructure, a global alliance dedicated to making infrastructure more robust.
  ○ Domestic calamities are met with responses from India's National Disaster Response Force, which is also sent abroad frequently.
  ○ The first-ever working group on disaster risk reduction was formed under India's G-20 chairmanship, aligning with the SDGs.

**Way Ahead:**

● The Global Stocktake report emphasizes the importance of reversing deforestation and adopting electric vehicles as key components of a clean energy economy.
● To reduce global GHG emissions by 43% by 2030, 60% by 2035, and reach net zero CO2 emissions by 2050, countries must significantly scale up renewable energy resources and move away from fossil fuels like coal, oil, and natural gas.
● Disaster risk must be integrated into how we build, invest, and live.
● Early warning systems for all are one of the most cost-effective risk reduction methods, spearheaded by the UN with India's support. For example, a 24-hour warning of a coming storm can reduce damage by 30%.
● A global multi-risk warning system for all types of hazards (biological, tectonic, or technological) will particularly help the least developed countries and Small Island Developing States.
● Improving global data capabilities will aid in predicting and responding to risks. India's G20 presidency has made progress on knowledge sharing, joint data infrastructure, and risk analysis.

**Conclusion:**

● International cooperation in disaster prevention, response, and recovery must be enhanced, particularly for countries of the Global South.
● The G20 summit and the outcomes of the Disaster Risk Reduction Working Group offer an opportunity to create a future where disaster risk mitigation is possible
● As stated by UN Secretary-General António Guterres, "Extreme weather events will happen. But they do not need to become deadly disasters."

***Nut Graf:*** *The number and intensity of extreme weather events are increasing, causing widespread damage and loss of life. Vulnerable countries and communities are being disproportionately affected.The G-20 summit recognized the need for urgent action to reduce disaster risk, including increased funding for developing countries and a transition to clean energy. India has been a leader in disaster risk reduction, and its experiences can offer lessons for other countries.*

**3. Protecting floodplains from encroachment**

**Syllabus:** Disaster and Disaster Management.

**Mains:** Conserving Floodplains as a remedy for recurring floods

**Context:** The increasing frequency and severity of floods worldwide, exacerbated by climate change, necessitate a focused approach to protecting floodplains.

**Floodplain Encroachment as a Reason for Floods:**
● Illegal construction and encroachments on floodplains significantly contribute to the worsening of flood events.
● These encroachments reduce the natural capacity of rivers to handle surges of water, particularly during heavy rainfall.
● A case in point is Uttarakhand, where tourism-driven development has led to the neglect of vital eco-sensitive floodplains.
● As per the CAG report, the 2015 Chennai floods were attributed to encroachments in Tamil Nadu's floodplains.
● Weak enforcement of environmental assessments and regulations further exacerbates this issue.

**Lacuna in Current Legislation:**
● India currently relies on the 2005 Disaster Management Act, which falls short of effectively addressing flood risk management.
● This legislation operates under the assumption that disasters, including floods, cannot be accurately predicted, which is not entirely accurate.
● Additionally, central policies aimed at protecting floodplains often lack the necessary authority over states.

**Way Forward:**
● Globally, there is a shift towards comprehensive flood risk management, with countries like Germany, the U.K., and the Netherlands leading the way.
● This shift places a strong emphasis on water retention and the restoration of floodplains as vital strategies.
● For instance, Germany's Federal Water Act, which evolved following a major flood in 1996, prioritizes protecting the original retention capacity while reconstructing water bodies.
● Climate change adaptation necessitates the integration of various laws, including those governing land use, water body preservation, coastal regulations, and environmental impact assessments, into a unified framework.
● Achieving this requires a strong political will, as leaders must prioritize environmental protection over short-term gains to safeguard lives, livelihoods, and critical infrastructure from the growing threat of floods intensified by climate change.

**Nut Graf:** *In the face of escalating flood risks due to climate change, safeguarding floodplains emerges as a paramount imperative. Encroachments on these vital natural areas, driven by haphazard development, significantly exacerbate flooding. Existing legislation falls short of effectively addressing this issue. However, realizing this vision necessitates a unified legal framework and unwavering political commitment to prioritize environmental protection over short-term gains.*

# GEOGRAPHY

## 1. Moroccan Earthquake

**Syllabus:** GS 1- Geography, Cyclones, hurricanes, earthquakes

**Prelims:** Moroccan Earthquake

**Context:** A 6.8 magnitude earthquake hit Morocco, killing 2000+ civilians and causing massive destruction to the infrastructure

**About Morocco**



**About the Earthquake**
- Epicentre: town of Ighil in Al Haouz Province, roughly 70 kilometers (44 miles) south of Marrakesh, in the valley of Atlas Mountains.
- Reason: collision of the African and Eurasian tectonic plates at a relatively shallow depth.

**Why was it so devastating?**
- Shallow depth.
- Morocco rarely experiences earthquakes.
- Building codes are not followed.

**Source: Geology.com**

**Global Response**
● Global leaders offered condolence.
● Exceptional gesture by Algeria.

## 2. Distribution of phosphorus

**Syllabus:** GS 1- Geography, Natural Resources

**Prelims:** Phosphorus- availability, geopolitical control and its environmental challenges

**Introduction**
● The issue of fertilisation in agriculture has persisted for centuries.
● Early agricultural societies recognized the depletion of soil nutrients through repeated cultivation.
● Indigenous communities developed natural fertilisation methods, like using fish remnants and bird droppings (guano).
● The 19th century saw the advent of synthetic fertilisers and the identification of vital elements like nitrogen, phosphorus, and potassium.
● These elements form the basis of modern synthetic chemical fertilisers, boosting agricultural productivity.

**Geopolitics and Phosphorus**
● A handful of countries now control most of the world's phosphorus reserves, posing a significant geopolitical concern.
● Morocco and the Western Sahara region house the largest phosphorus reserves, but these deposits contain cadmium, a harmful heavy metal.
● Cadmium-laden fertilisers are often used, leading to health issues, such as heart disease.
● In 2018, the EU introduced regulations to limit cadmium levels in fertilisers.
● Only six countries possess substantial cadmium-free phosphorus reserves, but China restricted exports in 2020, creating market instability.

**The Phosphorus Disposal Problem**
● Roughly 20% of mined phosphorus is utilised for food production; the rest is lost.
● Phosphorus runoff into water bodies is common due to excessive fertiliser application.
● Most phosphorus consumed by people ends up in sewage, which poses challenges for treatment.
● Untreated sewage, containing nitrates and phosphates, contributes to water pollution.
● Algal blooms fueled by phosphorus promote oxygen depletion, harming aquatic life and human health.

**Finding Phosphorus Elsewhere**
● One solution is reducing chemical fertiliser use through precision agriculture.
● Low-input agroecological approaches offer viable alternatives, especially for smallholder farmers.
● Exploring urban sewage as a phosphorus source gains interest.

**Closing the Phosphorus Loop**
● Collecting urine for local fertiliser production could help.
● Recycling wastewater and sludge for nutrient recovery is another avenue.
● Companies like EasyMining retrofit sewage treatment plants to recover phosphorus efficiently.
● The end product resembles conventional fertiliser but is of higher quality.

**Trouble with the Incentives**
● In rural India, influential farmers who double as pesticide and fertiliser dealers encourage excessive fertiliser use.
● Addressing this issue requires better extension services and awareness campaigns.
● Urban India often stigmatises sewage-related activities historically associated with lower castes.
● Regulations primarily focus on discharge standards, leading to dilution practices that don't solve pollution.
● Wastewater treatment is seen as a cost, not a revenue source, for cities.

**Creating a Circular Water Economy**
● To facilitate change, we must rethink the entire approach.
● Affordable technology could enable setting up sewage treatment plants with phosphorus recovery.
● Systemic change involving all stakeholders is necessary.
● Lowering sewage mining costs, allowing urban-mined phosphorus in agriculture, and changing payment structures for sewage treatment could drive innovation.
● Such changes could address multiple issues: geopolitical stability, affordable fertilisers, improved water quality, and better public health.

## 3. Vanadium Reserves in Gujarat

**Syllabus:** GS 1- Geography, Natural Resources

**Prelims:** Vanadium Reserves

**Context:** Rare metal Vanadium has been found off-coast Gujarat, in Gulf of Khambhat.



**Source: BBC**

**What is Vanadium?**
● Atomic Number: 23
● Silver-gray, ductile metal that is solid at room temperature.
● It has a relatively high melting point and boiling point.
● Good conductor of electricity and heat.
● Major ores: vanadinite, patronite, and carnotite.
● It is often associated with metals like chromium and molybdenum in ores.

**Uses**

● Steel alloys and other alloys
● Aerospace and defence
● Chemical Catalysts
● Battery Technology (Energy Storage)
● Nuclear Applications
● Catalytic Converters
● Metallurgy
● Medicine
● Dyes and Pigments

**Global (& Indian) Reserves**

● More than 50% of Vanadium is mined in China
● China, Russia and South Africa together account for 85% of global Vanadium ore production.
● Largest exporter: Brazil
● Largest reserves: China
● In India, apart from recent reserves in Gujarat, Found in Arunachal Pradesh.
● Estimated reserves in India: 24.63 million tonnes.

## Vanadium Mine Production Globally
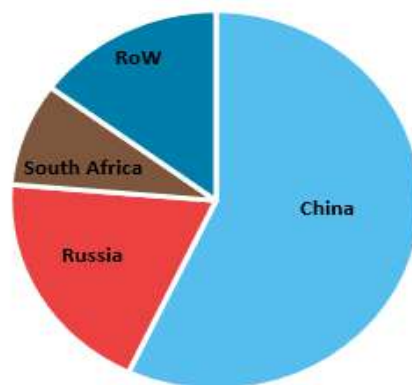


**Source: mcgroup.co.uk**

**4. India sees the lowest august rainfall in a century**

**Syllabus:** Important Geophysical phenomena, Rainfall

**Prelims:** Rainfall

**Mains:** Rainfall pattern in India

**Context:** The Met department indicated in July that the August rainfall would be 'below normal' and the rainfall in September is likely to be within a 10% window of the 16.7 cm that is normal for the month.

## Rainfall deficiency
The chart shows some years of the lowest rainfall recorded in August since 1901. Last month's deficit of 36% is an all-time low, dipping below the 2005 mark of 24%



**Source: The Hindu**

**Details:**
- El Nino refers to a warming of the central Pacific that usually translates to deficient monsoon rainfall over India.
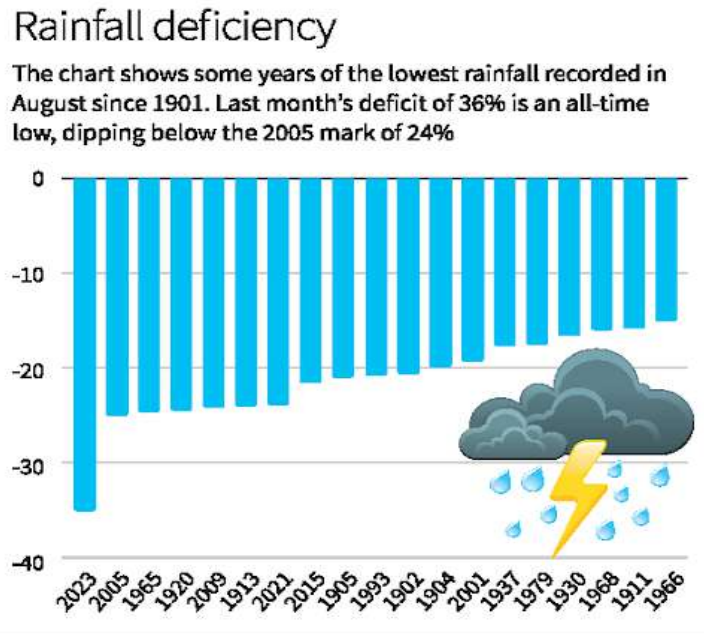- Rainfall in August has been the lowest in over a century, with India getting 36% less rainfall than it usually does in the month. Of the four monsoon months, August usually sees the most amount of rainfall (25.4 cm) after July with 28 cm.
- With the strengthening of the El Nino and unfavourable conditions in the Arabian Sea and the Bay of Bengal, August rainfall has been markedly deficient in most of India, except in northeastern India, the Himalayan States, and parts of Tamil Nadu, show data from the India Meteorological Department (IMD).
- The last time India recorded such severe deficits in August was in 2005 when the shortfall was about 25% of the normal, and in 2009, when India saw its biggest drought in half a century and August rainfall was 24% less than normal.
- Rainfall in August has brought the overall national deficit to 10%, with the regional deficits being 17% in east and northeast India, 10% in central India, and 17% in southern India.

**'Below normal' Rainfall:**
- The IMD on July 31 indicated that August rainfall would be "below normal", but its weather models did not indicate that the shortfall would be as sharp as has been experienced.
- Monsoon rainfall in September, the last of the four monsoon months, is likely to be within a 10% window of the 16.7 cm that is usual for the month, the agency's forecast noted.

**Rainfall pattern in 2023:**
- On 24th August 2023, the Monsoon Trough at mean sea level passed through Firozpur, Karnal, Meerut, Azamgarh, Patna, Deoghar, Diamond Harbour and thence south-eastwards to east-central Bay of Bengal and through Gorakhpur, Patna, Bankura, Digha and thence southeastwards to east-central Bay of Bengal on 25th.
- It shifted along the foothills of the Himalayas during 28th-29th. But, on the 30th, the eastern end shifted south-wards and ran through Gorakhpur, Patna, Bankura, Digha and thence east-southeast words to the northeast Bay of Bengal.

**Conclusion:** Indian agriculture is heavily dependent on the monsoons and because of this, lesser rainfall during the monsoons generally translates to below-average crop yields. Thus, tracking ENSO is very important for the Indian economy.

***Nut Graf:*** *The Impact of ENSO on the Indian climate and weather system is significant and climate change linked to it is an important factor which needs to be studied in detail.*

## 5. Kaobal Gali-Mushkoh Valley opens up for tourists

**Syllabus:** Geography

**About Kaobal Gali-Mushkoh Valley-Gurez Valley**
- Kaobal Gali: A mountain pass (4166.9m) connecting Gurez Valley and Mushkoh Valley
- Mushkoh Valley:In Kargil's Drass sector: site of 1999 war, Lush meadows with wild tulips and views of glaciers.
- Home to endangered Himalayan Yew
- Gurez Valley:Bandipore District. It was until now closed for civilians Only log houses exist; no concrete. Home to ibex, musk deer, and marmots.



**Source: The hindu**

**Source: The hindu**

# MISCELLANEOUS

## 1. Agri Ikigai

**Context:** Climate change and its cascading effects have unleashed a wave of challenges upon the agricultural sector. Smallholder farmers owning 1-3 acres of irrigated land or 3-7 acres of rainfed land constitute a substantial 27% of the agricultural workforce. Due to their limited resources, they are more vulnerable to crop losses, unpredictable weather patterns, and depleting soil health.

**Details:**
● To combat these issues and create a sustainable future for agriculture, adopting a holistic approach that intersects technology, innovation, and environmental consciousness is imperative.
● One such approach known as "Agri-IKIGAI" offers a roadmap for smallholder farmers to thrive economically, while fostering a healthier planet and satisfying consumer demands.
● This framework could prove to be a beacon of hope, seamlessly blending technology, innovation, and ecological consciousness into a tapestry of sustainable farming practices.
● The term Agri-IKIGAI is derived from the Japanese concept of "ikigai" which means "a reason for being".
● This approach acknowledges that solely increasing farmers' income isn't adequate; it is also essential to enhance environmental sustainability and offer consumers nutritious, ethically sourced, and residue-free produce.
● Achieving this trifecta requires a shift towards adoption of innovative practices that blend traditional wisdom with cutting-edge technology.
● For example, delving into the realm of agricultural practices, direct-seeded rice (DSR) cultivation is pertinent. By swapping traditional transplanting with direct sowing, farmers can minimize greenhouse gas emissions and enhance their economic well-being.
● This strategy advocates for a paradigm shift in agricultural practices such as championing crop diversification, agroforestry, and precision agriculture. It is a practical pathway toward building climate resilience.
● Even the research by the Intergovernmental Panel on Climate Change (IPCC) substantiates these strategies, demonstrating that diversified cropping systems are more adaptable to changing climate conditions, while agroforestry can effectively mitigate greenhouse gas emissions and enhance soil health.

## 2. PM Vishwakarma Scheme

**About:**
● Prime Minister Narendra Modi launched the PM Vishwakarma scheme in New Delhi on the occasion of Vishwakarma Jayanti, for giving government support to workers engaged in traditional crafts and skills.
● First announced during his Independence Day speech around a month ago, the scheme is also being seen as a means for the government to reach out to the economically marginalized and socially backward communities – particularly the Other Backward Classes (OBC) group.

**What is the Vishwakarma scheme?**
It is a new scheme with an outlay of 13,000 crore and is fully funded by the Central government. "On this Vishwakarma Jayanti, we will give about 13,000-15,000 crore to the people who live with traditional skills, who work with tools and with their own hands, mostly from the OBC community. Be it our carpenters, our goldsmiths, our masons, our laundry workers, our barber brothers, and sisters..." Modi had said on August 15.

**Families associated with 18 such different sectors will be helped in all possible ways, the PM said. These include:**
(i) Carpenters
(ii) Boat Makers
(iii) Armourers
(iv) Blacksmiths
(v) Hammer and Tool Kit Makers
(vi) Locksmiths
(vii) Goldsmiths
(viii) Potters
(ix) Sculptor, Stone breakers
(x) Cobblers (Shoesmiths/ Footwear artisans)
(xi) Masons (Rajmistri)
(xii) Basket/Mat/Broom Makers/Coir Weavers

(xiii) Doll & Toy Makers (Traditional)
(xiv) Barbers
(xv) Garland makers
(xvi) Washermen
(xvii) Tailors
(xviii) Fishing Net Makes.

**What benefits can be availed of through the Vishwakarma Scheme?**

The scheme is to help enhance the skills of workers employed in these fields and help them avail loans easily to aid their earnings.

'Under the scheme, the Vishwakarma workers will be registered for free through Common Services Centres using the biometric-based PM Vishwakarma portal.

'They will then be provided recognition through the PM Vishwakarma certificate and ID card, given skill upgradation involving basic and advanced training, a toolkit incentive of Rs.15,000, collateral-free credit support up to Rs.1 lakh (first tranche) and Rs.2 lakh (second tranche) at a concessional interest rate of 5%, Incentive for digital transactions and marketing support.

A toolkit booklet has also been released in 12 Indian languages, with accompanying video elements, to aid Me knowledge of workers on new technologies in their field.

## 3. Moto GP

**Context:** India's Buddha Circuit organised its first MotoGP (Motorcycle Grand Prix), called Bharat GP. Winner: Marco Bezzecchi of Mooney VR46 Racing Team

**About MotoGp:**
● Term coined in 2002, but the motorcycle world championship has been organised since 1949.
● Governing Body: Federation Internationale de Motocyclisme (FIM)
● Each MotoGP season consists of multiple Grand Prix races, which are individual events held at different circuits.
● Riders accumulate points based on their finishing positions in each race, and the rider with the most points at the end of the season is crowned the World Champion.
● These bikes are not Road-legal.
● 11 teams (5 factory 6 satellite), each fielding 2 riders.
● Practice session- Qualifier (2 segments: Q1 & Q2) - Final



**Source: Cycle News**

**About Buddha International Circuit**

● Inaugurated 2011
● 5.14 km
● In Greater Noida (Gautam Buddha Nagar)
● Designer: Hermann Tilke
● Hosted F1 in 2013
● Asian Road Racing Championship in 2016
● To make it safer for bikes, had to increase gravel content.

**Flags of MotoGP**



Source: intentsGP

● **Green:** means that the track is free.
● **Yellow:** indicates a danger on the track, usually an accident. If the marshal shows the flag, overtaking is forbidden.
● A yellow flag with red stripes and a white flag with a red cross. This combination warns competitors of reduced track grip (due to water, oil, clay, gravel, etc.).
● If the flag marshal waves a WHITE FLAG it is raining, MotoGP riders may enter the pit box to change their bike for one adapted to the rain.
● A blue flag is waved to a slower rider who is close to being overtaken by a faster rider. The first of these must then allow for faster overtaking at the earliest opportunity.
● Red flag means the immediate stopping of a race, qualification, or training. When the red flag appears, all riders must slow down immediately and enter the pits.
● Check flag signals at the end of a race, qualification, or training.
● A black flag together with the rider's number means that he must leave the track and go to the pits immediately.
● A black flag with an orange circle and rider number is used to inform the rider that his motorcycle has mechanical problems and must leave the track immediately and go to the pits.

## 4. Norman Borlaug Award & Rashtriya Vigyan Puruskar

**Context:** Swati Nayak, an Indian agricultural scientist has received the 2023 Norman Borlaug Field Award. Government of India has introduced the new National Awards in the field of Science, Technology and Innovation

**Norman Borlaug Award**
- Named in honor of Dr. Norman Borlaug, a Nobel laureate known for the Green Revolution.
- Since 2012
- Acknowledges outstanding contributions to agriculture and food security.
- Emphasizes research with practical impact on food production and security.
- Presented to individuals under 40 years old.
- Presented in October during the annual Borlaug Dialogue in Des Moines, Iowa.
- First recipient: Dr. Aditi Mukherjee from India
- Latest Recipient: Swati Nayak (3rd Indian Agricultural Scientist to get this award)
- She and her team formulated a strategy for introducing the drought-tolerant Shahabhagi Dhan rice variety in Odisha.

**Rashtriya Vigyan Puruskar**
- Recognise contributions of scientists, technologists and innovators individually, or in team.
- Government, private sector organizations or any individual working outside any organization.
- PIOs staying abroad with exceptional contributions benefiting the Indian communities or society shall also be eligible.
- Across 13 domains: Physics, Chemistry, Biological Sciences, Mathematics & Computer Science, Earth Science, Medicine, Engineering Sciences, Agricultural Science, Environmental Science, Technology & Innovation, Atomic Energy, Space Science and Technology, and Others.
- Will be decided by the Rashtriya Vigyan Puruskar Committee.
- Awards will be announced on 11th May (National Technology Day), and ceremony on 23rd August (National Space Day).

**Categories of RVP**
- Vigyan Ratna (VR) award
- Vigyan Shri (VS) award
- Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB) award
- Vigyan Team (VT) award

## 5. Oncologist Ravi Kannan wins Ramon Magsaysay award

- Surgical oncologist R. Ravi Kannan, Director of the Cachar Cancer Hospital and Research Centre (CCHRC) in Assam, is one of the Ramon Magsaysay award winners for 2023.
- He is credited with revolutionising cancer treatment in Assam through people-centric and pro-poor healthcare.
- Dr. Kannan hails from Chennai, where he earlier worked at the Cancer Institute, Adyar, before moving to Silchar in 2007. He became the Director of the CCHRC in 2022.

## 6. Chandrayaan finds plasma on moon

- A payload on board Chandrayaan-3's lander, Vikram, has completed the first in situ measurements of the surface-bound lunar plasma environment over the south polar region.
- The Radio Anatomy of Moon Bound Hypersensitive Ionosphere and Atmosphere-Langmuir Probe (RAMBHA-LP) is a device used for characterising plasma.

- The initial assessment indicates that the plasma encompassing the lunar surface is relatively sparse, characterised by a number density ranging from approximately 5 to 30 million electrons per cubic metre.
- This evaluation specifically pertains to the early stages of the lunar daytime.
- The probe operates without interruption, aiming to explore the changes occurring in the near-surface plasma environment throughout the lunar day.

## 7. Fiscal deficit touched 33.9% of FY24 targets in July

- The Centre's fiscal deficit in the first four months of 2023-24 touched 33.9% of the full-year target, government data showed.
- In absolute terms, the fiscal deficit or the gap between expenditure and revenue was ₹6.06 lakh crore as of end-July, according to the data released by the Controller General of Accounts (CGA).
- The deficit stood at 20.5% of the Budget Estimates (BE) in the corresponding period of FY23.
- In the Union Budget, the government projected to bring down the fiscal deficit to 5.9% of the gross domestic product (GDP) in FY24. The deficit stood at 6.40% of the GDP in 2022-23 against the earlier estimate of 6.71%.

## 8. Pulikkali

- **Pulikkali (Tiger Dance)** is a folk art form from Kerala.
- It is believed to have been introduced by the ruler of Cochin, Maharaja Rama Varma Sakthan Thampuran about 200 years ago.
- It is usually performed during the Onam festival.
- Artists paint their bodies like tigers with yellow, red, and black stripes.
- They dance to the rhythm of traditional percussion instruments such as thakil, udukku, and chenda.
- The Swaraj Ground in Thrissur district hosts a carnival where this art is celebrated.

## 9. India's first solar observatory mission to be launched today

- India's first solar observatory mission, Aditya-L1, will launch via the Polar Satellite Launch Vehicle (PSLV) from the Satish Dhawan Space Centre in Sriharikota.
- PSLV-C57/Aditya-L1 mission is one of the longest missions for this launch vehicle.
- After launch, Aditya-L1 will spend 16 days in earth-bound orbits, conducting five manoeuvres to attain the necessary velocity.
- Following this, Aditya-L1 will perform a Trans-Lagrangian insertion manoeuvre, embarking on a 110-day trajectory to its destination.
- Aditya-L1 will be positioned approximately 1.5 million km from Earth, facing the sun.
- The Aditya-L1 payloads are designed to gather crucial information on coronal heating, coronal mass ejections, pre-flares, flares, space weather dynamics, particle and field propagation, and related phenomena.
- The satellite, in a halo orbit, can continuously observe the sun without any eclipses or interruptions.

## 10. Seven years on, mission to clean the Ganga remains a work in progress

- The Namami Gange mission aims to reduce pollution, conservation and rejuvenation of the National River Ganga.
- The total sewage generation in the Ganges basin is estimated to be around 11,765 million liters per day (MLD), of which 7,000 MLD is expected to be treated by 2026.
- As of July 2023, sewage treatment plants (STPs) capable of treating 2,665 MLD have been commissioned and are functional.
- Several plants took time to be commissioned due to issues with land acquisition.
- Uttarakhand has the highest number of plants that have been set up or upgraded, followed by Uttar Pradesh and West Bengal.
- The NMCG is a Rs 20,000-crore mission, but the government has approved projects worth Rs 37,396 crore, of which only Rs 14,745 crore has been released to the states for infrastructure work.
- The river's water quality is now within the prescribed limits of notified primary bathing water quality.
- There has been an increase in dolphin population from 2,000 to about 4,000, indicating improved water quality.
- The NMCG is also working to develop a water quality index to better communicate about river water quality which will include the parameters such as dissolved oxygen, biochemical oxygen demand, and faecal coliform etc.

## 11. Malati Mem

- Malati Mem (Mangri Orang) was an Adivasi woman who led a fight against foreign liquor and opium in Assam's Darrang district.
- In 1921, she was killed by government supporters at Lalmati in Darrang district for supporting Congress Volunteers in a prohibition campaign.
- Mangri Orang is considered an unsung hero of India's struggle for freedom from British rule and is believed to be the first female martyr of the freedom movement.

## 12. What drives the process of "atlantification" in Arctic seas?

- Atlantification is an ocean phenomenon where the warm waters from the Atlantic Ocean have been diverted into the Arctic ocean causing the transformation of the Arctic Ocean from colder, fresher, and ice-capped to warmer, saltier, and increasingly ice-free.
- The ocean's global circulation patterns cause water to flow from the Atlantic into the Arctic.
- This exchange happens primarily in deeper water, with currents carrying warm and salty Atlantic water north.
- The warm Atlantic water does not mix well with the Arctic's surface water, which is cooler and fresher.
- The fresher Arctic water is less dense than the saltier Atlantic water, so it floats on top, trapping the Atlantic water beneath the ocean's surface.
- However, as sea ice disappears, the surface of the Arctic Ocean is heating up. The barrier between the layers (i.e the Arctic water and Atlantic water) is weakening, allowing Atlantic water to mix more easily into the upper layer.
- **This is creating a feedback loop where:**
  - Warmer surface water melts more sea ice.
  - Exposure of the ocean's surface to sunlight increases.
  - Water temperature rises, ocean stratification in the Arctic ocean is disrupted, melting more ice.
- The force driving atlantification is the Arctic Dipole, a pattern characterized by anticyclonic winds over North America and cyclonic winds over Eurasia
- The Arctic Dipole affects the influx of water from the North Atlantic through the Fram Strait affecting the distribution of ice in the region.

## 13. Community radio station lends an ear to palliative care patients

- Radio Saanthwanam 90.4 FM is a community radio station operated by the Pain and Palliative Care Trust in Kerala, aimed at empowering terminally ill patients and those undergoing palliative care.
- The radio station will transmit a wide range of programs that enable social interactions and enhance patients' quality of life, including information on free clinical services and medication.
- It will also provide a platform for patients and caregivers to interact with experts and share their experiences.

## 14. DIKSHA portal to offer AI help

- The National e-Governance Division (NeGD) of the Ministry of Electronics and Information Technology (MeitY) is set to integrate Personalised Adaptive Learning (PAL) into its existing Digital Infrastructure for Knowledge Sharing (DIKSHA) platform.
- The PAL's software-based approach is expected to allow each student to have an individualised learning experience over the course of the curriculum based on their unique needs and abilities.
- DIKSHA is a national platform for school education launched on September 5th 2017
- It is an initiative in the domain of digital learning by the National Council for Education Research and Training (NCERT) and the Ministry of Human Resource Development – MHRD
- It was developed based on the core principles of open architecture, open access, open licensing diversity, choice and autonomy as outlined in the Strategy and Approach Paper for the National Teacher Platform.
- DIKSHA is available for the use of all states and UTs of India. Currently, it supports 18+ languages and the various curriculum of NCERT, CBSE and SCERTs across India.
- Building the PAL is a massive exercise. Content from across subjects will have to be categorised and different chunks will have to be tagged. New content may also have to be created.
- **Experiments in States**:
  - Andhra Pradesh has signed contracts with three privately owned edtech companies: Reliance Jio Platform's start-up Embibe, ConveGenius, and Mindspark for training teachers to use IT applications in the classroom, provide analytics for remedial learning, and help students improve their conceptual understanding.

○ In Assam, the PAL was adopted in 200 schools from Classes 6 to 10. Each school had nearly 200 students, and Embibe provided 10 devices per school. After implementing the project for two years, Assam discontinued it, citing lack of funds.

○ In Haryana, after floating the tender, the State government said Embibe's quote for streaming content was too high, and the process of adopting PAL came to a standstill. For implementing the PAL project in the whole State, it had estimated a yearly streaming cost of ₹27 crore, considering on an average one child in a week sees four videos of 15 minutes on the platform. This cost was felt to be very high by the government.

● The process of making PAL is time consuming and it will still take three to four years to develop the tech and roll it out for use. The NeGD will float an Expression of Interest to assess the market for edtech companies that can help launch PAL and possibly integrate it with DIKSHA 2.0.

## 15. Bank Credit to real estate at record high

● According to the RBI data Bank credit to housing as well as commercial real estate witnessed a nearly 38% annual growth in July 2023, taking the loan outstanding to the realty sector to a record ₹28 lakh crore.

● It is evident from the Reserve Bank's loan outstanding data as well as property consultants data on housing sales and new launches across major cities that the real estate sector is moving at a fast pace.

● The credit outstanding in housing (including priority sector housing) rose 37.4% annually in July crossing ₹24.28 lakh crore, according to the RBI's data on 'Sectoral Deployment of Bank Credit.

## 16. Exercise Trishul

● The annual training exercise, "Trishul," organised by the Western Air Command (WAC) of the Indian Air Force (IAF), commenced on September 4, 2023.

● The exercise spans from September 4 to 14 and aims to assess the operational readiness of the command.

● The exercise involves the activation of all air assets and force multipliers along a vast stretch from the Line of Control (LoC) with Pakistan to the Line of Actual Control (LAC) with China.

● The exercise will be temporarily halted to coincide with the G-20 summit, during which the armed forces will be on high alert due to heightened threat perception.

● Since the ongoing standoff with China in eastern Ladakh since May 2020, the Indian military has shifted its focus from Pakistan to China.

● The IAF has actively engaged in operations during this period, including the mobilisation of troops and equipment.

● Despite recent talks between the two sides, the stand-off at the Line of Actual Control continues, with extensive military build-ups on both sides.

● The unveiling of China's "2023 edition of its official map" has sparked a vigorous protest from India as it shows Arunachal Pradesh and the Aksai Chin region as part of Chinese territory.

● This annual training exercise demonstrates India's commitment to maintaining its military readiness in a region marked by ongoing territorial disputes and security concerns with both Pakistan and China.

## 17. CBDCs can make payments across borders efficient

● Reserve Bank of India Governor Shaktikanta Das highlighted key challenges in existing cross-border payments in a keynote address at the G20 TechSprint Finale 2023.

● Challenges include high cost, low speed, limited access, and insufficient transparency in cross-border payments.

● Mr. Das emphasised that Central Bank Digital Currencies (CBDCs) could address these challenges and make cross-border payments more efficient.

● He asserted that CBDCs have the potential to facilitate quicker, more cost-effective, transparent, and accessible cross-border payment services, thereby providing benefits to people across the globe.

● Mr. Das underscored that the instantaneous settlement capability of CBDCs plays a pivotal role in enhancing the affordability, speed, and security of cross-border payments.

● He suggested that the use of local currencies in cross-border payments can protect emerging market currencies from global shocks and mitigate exchange rate fluctuations.

● Additionally, Mr. Das mentioned that using CBDCs could encourage the development of local foreign exchange and capital markets.

● He stressed the importance of adopting the right technology platform for CBDCs, emphasising interoperability as a crucial element for the future of the cross-border payments ecosystem.

## 18. Special Protection Group

- The Special Protection Group (SPG) is a federal organisation tasked with providing immediate security cover to the Prime Minister of India, former Prime Ministers, and their immediate family members.
- SPG's motto is courage, dedication and safety.
- It was established in 1985 on the recommendation of the Birbal Nath Committee.
- Its legal basis and jurisdiction are established through the Special Protection Group Act of 1988.
- The Special Protection Group protects beneficiaries both in India and abroad.

## 19. Rajasthan Governor's assent sought for social security Bills

- The Rajasthan Minimum Guaranteed Income Bill, 2023, provides for a minimum pension of ₹1,000 per month and 125 days of employment in a financial year to all families.
- The Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, 2023, extends social security to gig workers and creates a regulatory framework for aggregators.
- It also aims to establish a welfare board for unorganized sectors which are not covered under the existing labour laws.
- These two laws would be beneficial in bringing relief to poor labourers and gig workers who spend long hours earning their livelihood without legal protection.
- A gig economy is a labour market that utilizes independent contractors and freelancers instead of full-time permanent employees.
- While gig work has been present in India for some time, it has gained popularity recently with the rise of platform-based companies operating in shared mobility, food tech, eCommerce, and logistics.
- The Code on Social Security (2020) passed by the Parliament has also recognized the changing nature of work and adopted policy language to reflect the reality of the labour market. It has imposed an obligation on gig employers to contribute to a Social Security Fund, which will be managed by a government-led board.

## 20. Philippines condemns 'illegal' actions by Chinese boats in South China Sea

- Second Thomas Shoal is approximately 200 km away from the western Philippine island of Palawan. China's closest major landmass to the shoal is Hainan Island.
- It is an atoll in the Spratly Islands of the disputed South China Sea.

## 21. Rudra veena exponent Ustad Ali Zaki Hader passes away

- Noted Rudra veena exponent Ustad Ali Zaki Hader passed away in New Delhi during the early hours of Friday.
- He was a disciple of Ustad Asad Ali Khan and the last exponent of the **Khandarbani style of the Jaipur Beenkar gharana of Dhrupad.**

## 22. Haryana khaps seek ban on marriages within same villages, live-in relationships

- Representatives of 23 khaps in Haryana's Jind held a meeting to seek changes in the Hindu Marriage Act, 1955.
- They want an amendment to prohibit marriages within the same village and gotra (sub-caste) in the state. Additionally, they aim to make live-in relationships illegal under the law.
- Majra khap chief Gurvinder Singh Sandhu, who is also a coordinator for the khaps, stated that such marriages go against social norms and often lead to disputes.
- He mentioned that the government's provision of police protection to such couples encourages the practice, which is generally unacceptable in Haryana, especially in Jind.
- He also emphasised that the live-in relationships cause social disorder and should not be allowed, suggesting that parental consent be made mandatory for love marriages.
- He alleged that the government had not been responsive to the khaps' long-standing demand to ban marriages within the same village and gotra (sub-caste).
- Majra khap spokesperson Samundra Singh pointed out that while courts have recognized certain rights of live-in partners, there is no provision for legal separation in such relationships, similar to divorce in a marriage.
- The meeting also highlighted the need for better coordination among khaps and established a 23-member president board to make collective decisions on important matters.

## 23. Regulator issues alert over sale of falsified versions of 2 drugs

● The Drugs Controller General of India (DCGI) has instructed State and Union Territory drugs controllers to closely monitor the sale and distribution of counterfeit versions of two medications: Defitelio and Adcetris, in response to alerts from the World Health Organization (WHO).
● The DCGI issued an advisory on September 5, mentioning that the WHO had issued a safety alert regarding falsified versions of Adcetris injection 50 mg. These counterfeit products have been found in India and three other countries, mainly in unregulated online supply chains.
● The WHO identified at least eight different batch numbers of these falsified versions in circulation.
● Adcetris (Brentuximab Vedotin) is a drug used to treat patients with Hodgkin's lymphoma and systemic anaplastic large cell lymphoma after a failed autologous stem cell transplant.

## 24. CBI does not require permission to probe pre-2014 cases too: SC

● A Constitution Bench ruled that a 2014 Supreme Court judgement, which invalidated the requirement for prior permission for CBI to investigate corruption cases against senior government officials, has a retrospective effect.
● The Bench, consisting of five judges, determined that Section 6A of the Delhi Special Police Establishment (DSPE) Act, which governs the CBI, was invalid from the moment it was introduced on September 11, 2003.
● The judgement found that Section 6A violated fundamental rights and stated that unconstitutional laws are void ab initio, meaning they have no legal effect from the start.
● Consequently, senior government officials facing corruption charges prior to the 2014 judgement can no longer seek protection through prior approval.
● Justice Vikram Nath affirmed that the 2014 ruling in the Dr. Subramanian Swamy case applies retrospectively, rendering Section 6A of the DSPE Act inactive since its inception.
● Article 20(1), which requires conviction under a law in force at the time of the crime, was deemed irrelevant to the validity of Section 6A.
● Section 6A previously granted immunity to officials of joint secretary rank and above from CBI preliminary inquiries.
● In 2014, a Constitution Bench found Section 6A to violate the right to equality under Article 14 of the Constitution.
● The judgement emphasised the importance of combating corruption and treating corrupt officials equally under the law, regardless of their status or position.

## 25. After a year's delay, CSIR's Shanti Swarup Bhatnagar awards for 2022 announced

● After a delay of nearly a year, the Council of Scientific and Industrial Research (CSIR) has now unveiled the Shanti Swarup Bhatnagar (SSB) awards for the year 2022.
● The SSB awards are highly regarded as prestigious science prizes in India.
● The reason for not announcing the awards in the previous year was not officially disclosed.
● In the previous year, the Union Home Ministry formed a committee to review national awards related to science and medicine, resulting in the reduction of some awards, but the SSB awards were retained.
● The 2022 SSB awardees consist of 12 scientists under the age of 45 from various scientific disciplines.
● Notable recipients include Ashwani Kumar, Maddika Subba Reddy, Akkattu Biju, Debabrata Maiti, Vimal Mishra, Dipti Ranjan Sahoo, Rajnish Kumar, Apoorva Khare, Neeraj Kayal, Dipyaman Ganguly, Anindya Das, and Basudeb Dasgupta.
● The SSB Prize is named in memory of the first Director-General of CSIR and is typically announced on the institution's foundation day, which falls on September 26th.

## 26. Centre to start Ayushman Bhav health scheme today

● The Ayushman Bhav campaign is set to be inaugurated virtually by President Droupadi Murmu at Rashtrapati Bhavan.
● Its primary objective is to extend healthcare services to all villages and towns across India.
● The campaign, led by the Union Health Ministry, seeks to create an all-encompassing nationwide healthcare initiative with universal coverage.
● A significant component of this campaign is the launch of the Ayushman Apke Dwar 3.0 program.
● This program will enable eligible beneficiaries who are enrolled under the PM-JAY scheme to independently download their health cards.
● The initiative represents a critical step towards improving healthcare access and coverage throughout the country.

## 27. Nagaland Assembly seeks exemption from UCC ambit

● The Nagaland Assembly unanimously passed a resolution led by Chief Minister Neiphiu Rio, seeking complete exemption for the State from the proposed Uniform Civil Code (UCC).

● The Nagaland government and the Naga people believe that the UCC could jeopardise their customary laws, social practices, and religious traditions, potentially leading to encroachment.

● The UCC aims to establish a single law governing personal matters like marriage, divorce, custody, adoption, maintenance, succession, and inheritance, as explained by Chief Minister Neiphiu Rio.

● On July 4, the State government submitted its objections to the 22nd Law Commission, citing the unique historical context of Nagaland, the non-interference policy since pre-independence, and constitutional guarantees under Article 371A.

● During meetings organised by the State government, various tribal organisations and civil societies expressed resentment and objections to the UCC proposal.

● The 22nd Law Commission, established by the Government of India in February 2020 and extended until August 31, 2024, issued a public notice on June 14, 2023, to gather input from stakeholders regarding the implementation of a UCC across India.

● The Nagaland MLAs deliberated on the implications of UCC in the State, and Assembly Speaker Sharingain Longkumer granted permission for the resolution. It was adopted unanimously by voice vote without any amendments.

## 28. C-295 aircraft

● The Indian Air Force (IAF) received its first C-295MW transport aircraft from Airbus, marking a significant upgrade to its transport fleet.

● The 56 C-295MW aircraft will replace the ageing Avro aircraft, ushering in a new era for the IAF.

● Under the contract, 16 aircraft will be delivered in fly-away condition, while the remaining 40 will be manufactured in India through a joint venture between Airbus and Tata Advanced Systems Ltd. (TASL).

● A final assembly line (FAL) is being established in Vadodara, Gujarat, where the first aircraft manufactured in India is expected to be delivered by September 2026.

● The C-295 aircraft deal is valued at approximately $2.5 billion and is expected to have a significant impact on bilateral relations and economic ties between India and Spain.

● Components for the aircraft are being produced in India at the Main Constituent Assembly (MCA) facility in Hyderabad and will be shipped to the Vadodara FAL, set to become operational by November 2024.

● The C-295 has a carrying capacity of nine tonnes and can transport troops, paratroopers, and cargo, support medical evacuation, and operate from short and unpaved runways. It boasts multiple versatile features.

## 29. Draft UN CyberCrime Convention

● India has proposed that the transfer of "personal data" under the UN CyberCrime Convention should align with its domestic laws rather than international laws.

● India's Digital Personal Data Protection Act, enacted in August, allows the processing of personal data for reasons related to the country's sovereignty, integrity, and security.

● The Act mandates firms to disclose the identity of other firms entrusted with user data for processing but exempts them from sharing such data in cases of lawful interception.

● The Union Home Ministry has reviewed the UN CyberCrime Convention draft to prepare for necessary changes if India signs and ratifies it.

● The convention, under negotiation for three years, is expected to be ratified at the UN General Assembly in 2024.

● During the sixth session of the "Ad Hoc Committee on Countering the Use of Information and Communications Technologies for Criminal Purposes," India proposed deleting a clause advocating for multilateral arrangements for personal data transfer.

● India also agreed to a clause requiring prior written authorization from the transferring state party for the transfer of personal data to a third country.

## 30. Govt. limits wheat stocks

- The Indian government is taking action to prevent wheat hoarding ahead of the festive season due to rising prices.
- Wheat stock limits have been reduced from 3,000 MT to 2,000 MT for traders, wholesalers, retailers, big chain retailers, and processors in all states and union territories.
- Rising prices are attributed to "artificial scarcity" by some entities.
- Wheat-stocking entities must register on the wheat stock limit portal and update stocks weekly; non-compliance may result in punitive action under the Essential Commodities Act, 1955.
- Entities exceeding stock limits must reduce stocks within 30 days.
- Central and State Government officials will closely monitor enforcement to prevent artificial scarcity.
- The government expects a possible reflection of price upticks in the retail market.
- Retail prices of essential items like foodgrains, sugar, and edible oil are expected to remain stable ahead of festivities.
- Adequate stocks of essential items are assured, and vigilance against hoarding is in place.
- Rumours of sugar shortages have caused price increases in some areas, but there is an ample stock of 85 lakh tonnes.
- Two lakh tonnes of sugar were released in August, exceeding the usual release.
- Favourable agricultural production is anticipated, with expectations of bumper rice production in the upcoming Kharif season and good sugarcane production in states like Karnataka and Maharashtra.

## 31. National Judicial Data Grid

- Real-time data on Supreme Court case filings and dispositions is now accessible to the public through the National Judicial Data Grid (NJDG).
- Chief Justice of India D.Y. Chandrachud made this announcement.
- NJDG is a national repository containing data on cases across Indian courts.
- The move is based on the 'open data policy' and involves daily updates to the NJDG.
- Users can easily access information on case institution, disposal, and pendency by type, year, stage, and quorum.
- This initiative promotes coordination, informed decision-making, and efficient resource allocation within the judiciary.
- Data available on the NJDG-SCI portal includes current pendency figures for civil and criminal cases, filings, and dispositions for the previous month.
- As of 2023, the Supreme Court has 64,854 registered and 15,490 unregistered pending cases.
- Pending cases involve various Bench configurations, including three-judge, five-judge, and nine-judge Benches.
- To expedite pending cases, Chief Justice Chandrachud plans to establish additional special three-judge Benches.

## 32. Floods in Libya

- A massive flash flood in Libya resulted in at least 4,000 deaths and thousands missing.
- The UN attributed part of this high death toll to the aftermath of years of war and chaos in the region.
- The flood was caused by a surge of stormwater that breached two upstream river dams, devastating the city of Derna.
- The UN World Meteorological Organization (WMO) noted that better early warning and emergency management systems could have prevented most of the casualties.
- Derna is now in a state of devastation, with bodies lining the streets and residents searching for missing loved ones.
- International organisations and nations, including the UN, the United States, the European Union, and several Middle Eastern and North African countries, are sending rescue teams and aid, including food, water tanks, emergency shelters, medical supplies, and body bags.
- Access to Derna in the east is severely limited due to destroyed infrastructure, including roads, bridges, and power and phone lines.

## 33. Exempting millets from GST can lift affordability, boost consumption

- Millets play a crucial role in India's nutritional and food security, and stakeholders in nutri-cereals are looking at sustaining efforts to promote the cereal in a big way.
- Bharat Biotech Chairman Krisha Ella raised the issue of exempting millet products from GST to boost consumption.
- This was the general theme of the **'NABARD-Businessline Millet Conclave 2023'.** Experts called for measures to incentivise farmers to grow millets. Discussion was held on raising consumer awareness of affordability and leveraging social media to lift exports.
- NABARD Chairman said India's target was to produce 45 million tonnes (mt) of millets by 2030, from 17 mt now.
- **India accounts for 41% of global millet production.**

- Indian Council of Agricultural Research said millets had lost sheen with the production of more rice and wheat after the Green Revolution. Global millet output was about 100 mt from almost 80 million hectares of land.
- APEDA Chairman said India was aiming at shipping $100 worth of million millets by 2025. In FY2022-23, millet exports stood at $75.43 million.
- Experts felt incentivising millet farmers, innovation in agronomics and focus on marketing were the key drivers to boost output and consumption. Branding would boost exports.

## 34. GDP Deflator

- The government called out critics for ignoring high-frequency data like Purchasing Managers' Indices and said that IIP index numbers understate manufacturing growth.



**Joining issue**

**Finance Ministry dismisses critiques of GDP data as attempt to invent an argument where none exists**

- Ministry calls out references to nominal GDP growth being lower than real GDP growth as a 'new bogey being spread to discredit GDP numbers'
- Says MoSPI calculates quarterly GVA in real terms first, and then uses deflator to obtain nominal values
- Notes nominal growth rates have slowed as WPI contracted in recent months

**Source: The Hindu**

- The Finance Ministry challenged aspersions cast by "certain sections" on the credibility of India's GDP data, which showed a 7.8% uptick in the first quarter, stressing that the GDP data was not seasonally adjusted and was finalised three years later, and it was therefore "wrong to look at the underlying economic activity based on GDP indicators alone".
- The minister said higher frequency data must be relied upon to form a view of the strength of the economic activity. And India's growth numbers might understate the reality because manufacturing growth indicated by the Index of Industrial Production (IIP) is far lower than what manufacturing companies are reporting.

**'New bogey'**
- The ministry also called out references to nominal GDP growth being lower than real GDP growth as "a new bogey being spread to discredit the GDP numbers and indicate that underlying economic activity is quite weak" and said both arguments did not stand up to scrutiny.
- The ministry said India's GDP deflator is dominated by the Wholesale Price Index (WPI) which peaked in the first quarter of 2022-23 due to the oil and food price increases in the wake of the war in Ukraine and supply-side disruptions. Prices began to come down from August 2022 onwards. Hence, WPI is now contracting year-on-year. It will soon pass once the statistical base effect disappears.
- If inflation were higher, critics would argue that nominal GDP growth is much higher because of inflation and that there was little underlying activity.
- MoSPI calculates quarterly GVA in real terms first, and then, using the deflator, nominal values are obtained.
- The Finance Ministry contended India's real GDP growth was 7.8% year-on-year in the first quarter of 2023-24. This is as per the Income or Production Approach. As per the expenditure approach, it would have been lower. So, a balancing figure statistical discrepancy is added to the expenditure approach estimate. These discrepancies are both positive and negative. Over time, they wash out.

**Nominal and Real GDP**
- Nominal gross domestic product is GDP that is evaluated at the present market prices.
- Real GDP is also known as inflation-corrected GDP or constant price GDP. It analyses the rate of all commodities and services manufactured in a country for a fixed year.
- GDP deflator = Nominal GDP/Real GDP * 100.

## 35. 31 benches of GST tribunal notified

- The Finance Ministry notified the constitution of 31 Appellate Tribunals across 28 States and eight Union Territories for the Goods and Services Tax (GST).
- The purpose is to resolve a growing number of taxpayer disputes with the Revenue Department.
- The establishment of these tribunals envisaged at the time of the implementation of the GST regime from July 1, 2017, got a final clearance from the GST Council in July 2023, and was much awaited by industry players.
- As of June 30, the number of pending appeals from taxpayers over Central GST levies had increased sharply to over 14,000.
- Uttar Pradesh will have the highest number of Benches of the GST tribunals, with three Benches proposed to be set up across Lucknow, Varanasi, Ghaziabad, Agra, and Prayagraj. Karnataka and Rajasthan will have two Benches each, while Maharashtra and Goa together will have three Benches to take up appeals.
- Tamil Nadu, along with Puducherry, will have two Benches, as will Gujarat along with the Union Territories of Dadra and Nagar Haveli, and Daman and Diu.
- Disputes arising in West Bengal, Sikkim, and the Andaman and Nicobar Islands will be taken up by two Benches of the tribunal to come up in Kolkata.
- For the seven northeastern States, one tribunal Bench has been proposed in Guwahati, with circuit Benches in Aizawl, Agartala and Kohima that will be operationalised depending upon the number of appeals filed in respective States.

## 36. AI cameras to curb poaching
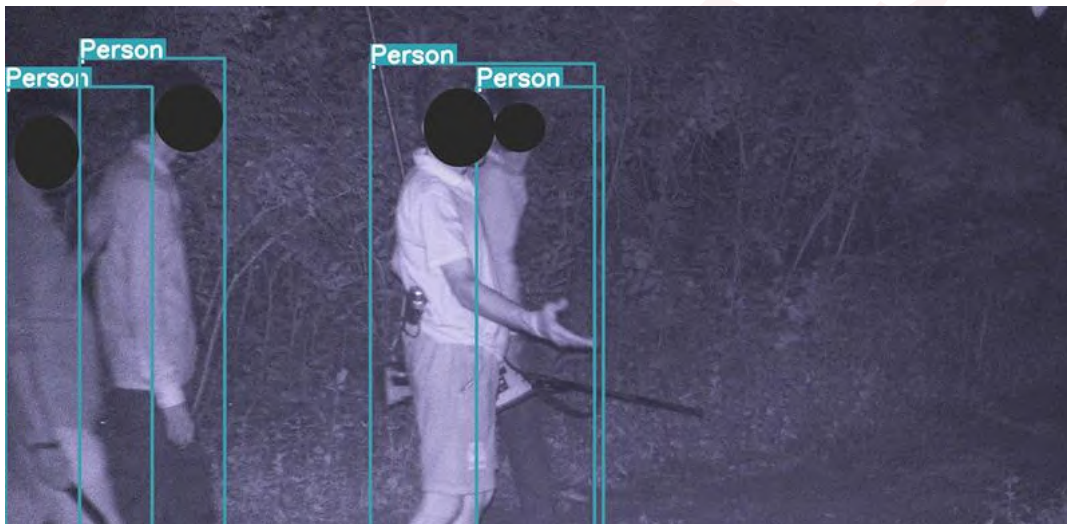


**Source: The Hindu**

- Cameras set up in remote regions are a key tool in surveys and census counts of tigers and elephants.
- A year back experiments done at the Kanha-Pench corridor in Madhya Pradesh, the system has caught poachers on camera. It helped forest authorities secure a conviction of a person involved in the experiment.
- Wildlife officials in India are experimenting with new cameras or camera traps with infrared sensors placed in forests to monitor the movement of potential poachers and to count wild animals harnessing the power of Artificial Intelligence (AI).

**Challenges:**
- They are bulky.
- It requires personnel to physically access the machine to upload photos.

## 37. 75% of european bumblebee population threatened



**Source: EU Science Hub**

- The bumblebee (Bombus) is a genus of bees considered to be especially important for the pollination of crops in the temperate and cold regions of the northern hemisphere.
- Most crop plants and 90% of all wild plants benefit from pollination by animals.
- According to a paper published in Nature more than 75% of European bumblebee species may be threatened in the next 40-60 years.
- Population decline is due to alterations of climate due to human activity and degradation of habitats.

## 38. Nikshay Poshan Yojana

- A 2022 study noted that 45% of people in India are undernourished, accounting for **nearly 1.2 million TB cases each year.**
- Undernutrition is the leading risk factor for TB disease. In 2019, the Health Ministry noted in a letter that undernutrition at the population level contributes to 55% of annual TB incidence in India.

**About Nikshay Poshan Yojana**
- It was launched in 2018 by the Ministry of Health and Family Welfare.
- Aims to support every Tuberculosis (TB) Patient by providing a Direct Benefit Transfer (DBT) of Rs 500 per month for nutritional needs.
- Since its inception around Rs 1,488 crore has been paid to 5.73 million notified beneficiaries.

**About Nikshay Mitra**
- The initiative ensures three-pronged support includes: Nutritional, Additional diagnostic, and Vocational support.
- The programme was brought in to fill the critical "community" elements into India's fight towards the Pradhan Mantri TB Mukt Bharat Abhiyaan aimed at eliminating TB by 2025.
- Ni-kshay Mitra (Donor) for this programme includes co-operative societies, corporates, elected representatives, individuals, institutions, non-governmental organisations, etc. who can support by adopting the health facilities (for individual donors).

## 39. Centre floats new science awards

- The Union government is introducing the Rashtriya Vigyan Puraskar (RVP) to honour scientists, technologists, and innovators.
- Similar to the Padma awards, these prizes will not include cash rewards but will offer a certificate and medallion.
- The RVP will consist of three Vigyan Ratna, 25 Vigyan Shri, 25 Vigyan YuvaShanti Swarup Bhatnagar, and three Vigyan Team awards.
- These awards will cover various fields, including physics, chemistry, biology, mathematics, computer science, and more.
- The proposal emphasises adequate representation of women and diverse domains.
- This initiative marks a significant reduction from the nearly 300 science prizes previously awarded by Union Ministries.

- The RVP will also be open to persons of Indian origin (PIOs) with specific eligibility criteria.
- The awards aim to recognize lifetime contributions, distinguished contributions, exceptional contributions by young scientists, and outstanding team efforts.
- While there are no age limits for most prizes, the SSB award has a maximum age requirement of 45.
- The awards will be announced on National Technology Day (May 11) and presented on National Space Day (August 23) starting in 2024.
- A committee of experts will oversee the awards process, and the CSIR will administer it initially, transitioning to the National Research Foundation.

## 40. ICMR nod to conduct Truenat test to detect Nipah

- Kerala has received approval from the Indian Council for Medical Research (ICMR) to use the Truenat test for diagnosing Nipah virus (NiV).
- Hospitals equipped with BSL 2 level labs are authorised to conduct the Truenat test.
- This approval allows more labs in Kerala to perform NiV diagnostics.
- Samples testing positive for NiV through the Truenat test can be sent to labs in Kozhikode, Thiruvananthapuram Medical College Hospitals, or the Institute of Advanced Virology in the capital.
- Kerala effectively contained the Nipah virus outbreak and no new Nipah cases have been reported recently.
- Surveillance for Nipah is an integral part of Kerala's Aarogya Jagratha calendar, with healthcare workers trained according to the Nipah protocol.
- Despite a 21-day incubation period, the state will continue surveillance for an additional 21 days.
- Efforts are underway to strengthen activities under the One Health initiative, involving collaboration with other departments.

## 41. SC to hear challenge to Section 6A of Citizenship Act from Oct. 17

- A Constitution Bench, led by Chief Justice D.Y. Chandrachud, has decided to start hearing petitions challenging the legality of Section 6A of the Citizenship Act, 1955, from October 17.
- Section 6A was added to the 1955 Act as part of the 'Assam Accord' in 1985 to safeguard Assamese culture and identity.
- The Union government believes Section 6A is valid and wants the court to reject the petitions, which were filed almost 40 years after its enactment.
- Under Section 6A, foreigners who came to Assam before January 1, 1966, and lived there as regular residents would have the same rights and duties as Indian citizens.
- People who arrived in Assam between January 1, 1966, and March 25, 1971, would also have the same rights and responsibilities, except they couldn't vote for 10 years.

## 42. New Pamban bridge

**Construction Progress**
- The new Pamban railway sea bridge, connecting Mandapam on the mainland to Rameswaram on Pamban Island in Tamil Nadu, may not meet its November deadline, according to railway officials.
- Construction on the bridge began in 2019 and has faced delays, missing previous deadlines in March and July.

**Challenges Faced**
- Recent increases in wind speed at the project site have slowed progress, particularly for the 72.5-meter "lift-span," a movable part of the bridge designed to allow ships to pass.
- The lift-span has been assembled but still needs to be erected, along with the remaining 26 spans.

**Geographical and Environmental Challenges**
- The new bridge is constructed in a geographically challenging location, exposed to a corrosive marine environment and cyclone-prone conditions with high wind velocities.
- The railway bridge plays a crucial role in connecting the mainland to Rameswaram, a significant South Indian town and one of the Char Dham pilgrimage sites.
- It is a replacement for the century-old Pamban bridge and is being built by Rail Vikas Nigam Limited at a budget of ₹545 crore.
- Earlier reports mentioned that rail traffic on the old bridge had been permanently halted due to safety concerns.

## 43. A clear message to the industry on dispute resolution

**Context:** The Mediation Act, 2023, was passed by the Parliament in the monsoon session, and got Presidential assent in September.

**Key features:**
- Every mediation agreement should be in writing.
- Parties can voluntarily or mutually decide to opt for mediation before filing a suit. (The 2021 draft called for 2 mandatory mediation sessions).
- **Exceptions:** Criminal proceedings, proceedings initiated in relation to the misconduct of any registered professional, and disputes relating to the levy and collection of any direct or indirect tax or refunds.
- A person of any nationality can be appointed as the mediator. Can be appointed either by the parties or by the mediation service provider.
- Mediation should be held within the jurisdiction of the court or tribunal competent to adjudicate on the dispute.
- **Defined time**: Should be finished within 120 days of the first appearance before the mediator. Can be extended by 60 days.
- Once approved, a settlement agreement is to be signed by the parties and adjudicated by the mediator.

**Types of ADRs**
- **Arbitration:** Appointment of an impartial third party (arbitrator) who hears both sides of the dispute and makes a binding decision.
- **Conciliation:** A neutral third party assists the disputing parties in reaching a mutually acceptable agreement. The conciliator helps facilitate communication and negotiation between the parties.
- **Mediation:** Mediator who helps parties in conflict communicate and collaborate to reach a voluntary settlement.
- **Judicial Settlements:** Dispute resolution mechanisms within the judiciary, including Lok Adalats (People's Courts), where disputes are settled through negotiation and conciliation, often with the involvement of judges.
- **Negotiation:** Parties involved in a dispute try to resolve it directly through discussion and compromise.

## 44. Ruixiang Zhang to receive SASTRA Ramanujan Prize

**Context:** The 2023 SASTRA Ramanujan Prize will be awarded to Ruixiang Zhang of the University of California, Berkeley. This annual $10,000 prize is for outstanding contributions by individuals in areas of mathematics influenced by Indian mathematics great Ramanujan

**SASTRA Ramanujan Prize**
- Started in 2005 by SASTRA University to honour mathematicians working in fields influenced by S. Ramanujan
- Will be awarded at an International Conference in Number Theory on December 20-22 at SASTRA University in Kumbakonam.

**About Ramanujan:**
- Born on December 22, 1887
- Known for his work in number theory, infinite series, and continued fractions.
- Went to Cambridge in 1914 and collaborated with Hardy to develop Developed the Ramanujan-Hardy theorem, which relates to the partition of integers
- Elected a Fellow of the Royal Society in 1918.
- December 22, his birthday, is celebrated as National Mathematics Day in India to honor his contributions.

## 45. Electoral bonds to go on sale from October 4

**Context:** The government announced the sale of the 28th tranche of electoral bonds from October 4 to 13 at all authorised branches of the State Bank of India.

**About Electoral bonds:**
- Introduced with the Finance Bill (2017). Notified in January 2018 under Electoral Bond Scheme 2018.
- First sale: March 2018. Since then, electoral bonds released in 4 windows of 10 days per year.
- Apart from above: On dates specified by the Union government and an additional 30-day period in the year of the Lok Sabha election.
- Nov 2022 amendment: Power of Central Government to declare an extra fortnight of electoral bond sales in years when States and Union Territories with a legislature have elections.
- Available at 29 specified branches of SBI.
- Only the political parties registered under Section 29A of the Representation of the People Act, 1951 (43 of 1951) and which secured not less than 1% of the votes polled in the last General Election to the House of the People or the Legislative Assembly of the State, shall be eligible.
- May be purchased by a citizen of India or an organization incorporated or established in India.
- Valid only for fifteen from date of issue.

# YOJANA SEPTEMBER 2023

## 1. Direct Tax Reforms

**Introduction:**
Direct tax is a crucial source of government revenue, playing a vital role in developing infrastructure, fostering economic growth, and achieving social objectives such as providing education, healthcare, housing, and other basic amenities.

**Direct Tax Reforms undertaken by the Government**

**Removing Exemptions and Reducing Tax Rates:**
- **Corporate tax reduction:** The corporate tax rate for existing domestic companies was reduced from the previous 30% to 25.17% (inclusive of surcharges and cess).
- **Tax incentives for new companies:** A lower direct tax rate of 17.16% (inclusive of surcharges and cess) is applicable to new domestic manufacturing companies established after October 1, 2019, and commencing production before March 31, 2024.
- **Reduced tax rates for cooperatives:** The Finance Act of 2022 reduced the Alternative Minimum Tax rate for cooperatives to 15%.
- **Personal income tax rebate**: In 2020, a new personal income tax regime with lower rates was introduced, and these rates were further reduced in the Finance Act of 2022.

**Widening and Deepening of Tax Bases:**
- Introduction of **Tax Deduction at Source (TDS) and Tax Collection at Source (TCS)** for various payments like rent, e-commerce operations, virtual digital assets, online games, and car purchases to broaden the tax base.
- **Measures for high-net-worth individuals:**
  - Arbitrage on the sale of market-linked debentures and debt mutual funds was eliminated.
  - A higher surcharge was imposed on high-net-worth taxpayers.
- **Legislation:** The Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015 and the Benami Transactions (Prohibition) (Amendment) Act 2016, were introduced to combat black money and benami transactions.

**Use of Technology to Enhance Tax Department Efficiency:**
- **A Faceless Scheme for e-assessment and appeal** was introduced to improve the efficiency of tax collection and bring convenience to taxpayers.
- **E-filing systems, refund bankers' schemes, and online tax payments** for quicker processing of tax returns and speedy issuance of refunds.

**Reducing Litigation through Tax Certainty:**
- **Advance Pricing Agreements (APA)** were introduced to decrease transfer pricing litigations, resulting in the signing of 95 APAs in FY 2022.
- An **E-verification scheme, coupled with the ability to update tax returns**, reduced the issuance of reassessment notices.

**Conclusion:** Direct taxation reforms have led to a remarkable 160% growth in direct tax collections from 2013-14 to 2022-23. The long-term direct tax buoyancy, standing at 1.15, surpassing the baseline of 1, signifies the efficiency of tax administration and the success of tax reforms.

Tax policy reforms remain an ongoing process, with the need for further reforms to minimise tax litigations and simplify taxation regimes to enhance the ease of doing business.

## 2. Consumer Protection Act 2019

**Introduction:**
The Consumer Protection Act of 2019 replaced the Consumer Protection Act of 1986 to further strengthen provisions for consumer protection, especially in the new era of globalisation, online platforms, and e-commerce markets.

**How the Consumer Protection Act 2019 strengthen provisions for consumer protection**
- **Expanded Consumer Definition**: The Act broadened the definition of "consumer" to include those who purchase or access goods or services online or through electronic means.
- **Central Consumer Protection Authority (CCPA):** The Act established CCPA as a central authority to promote, protect and enforce the rights of consumers. CCPA has the power to
  - Conduct investigations into violations of consumer rights.
  - Issue orders for the recall of unsafe goods and devices.
  - Order the discontinuation of unfair trade practices and misleading advertisements.
  - Impose penalties for misleading advertisements.
- **Product liability provision** to sellers for any harm caused to a consumer due to a defective product.
- **Simplified dispute resolution process:**
  - Mediation will be preferred for early settlement of cases
  - State and District commissions can review their own orders
  - E-filing of complaints and videoconferencing for hearing
- **Misleading Advertisements and False Endorsements:** The Act defines advertisements as any audio or visual publicity, representation, endorsement, or pronouncement made through various means, including electronic media, the internet, or websites.
  - The 'Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022' require endorsers to fully disclose any affiliations with the trader, manufacturer, or advertiser of the endorsed product.
- **e-Commerce Regulation:** The Act defines e-commerce as the buying or selling of goods or services, including digital products, over a digital or electronic network.
  - Information regarding the return, refund, grievance redressal mechanism, and country of origin need to be provided.
  - Acknowledge any consumer complaints within 48 hours and redress the complaint within one month.
- **Punishments:** Imposes a 2-year licence suspension for manufacturing or selling adulterants or spurious goods.
- **Combatting Dark Patterns:** E-commerce companies and industry associations are urged to avoid engaging in unfair trade practices known as "dark patterns."
  - "Dark patterns" involve using design and choice architecture to deceive, coerce, or influence consumers into making choices that are not in their best interest.

## 3. Women Empowerment

- The **Supreme Court (SC) of India** released the **'Handbook on Combating Gender Stereotypes'** which renews the discussion on gender justice.



- The **National Commission for Women (NCW)** aims to foster a culture where equal, free, and fair opportunity is available to everyone for engaging in social, political, and economic activities without prejudice.
  - Thus, the **narrative of gender inequality is changed** in consonance with the government's vision.

- ○ NCW aims to ensure the rights, commitments, guarantees, and safeguards available to women are put into practice.
- ● The government is also aiming to empower women through various schemes and amendments/enactments of laws.



**Examples of government schemes implemented in last decade to promote women empowerment**

**SCHEMES**

**Beti Bachao Beti Padhao:** To address declining child sex ratio, promoting girls' education, and welfare.

**Pradhan Mantri Matru Vandana Yojana (PMMVY):** Financial assistance to pregnant and lactating women for health/nutrition during pregnancy and childbirth.

**Mobile e-Haat:** Digital marketbase for women entrepreneurs/artisans to market and sell their products.

**Ujjwala Yojana:** Free LPG connections for women from BPL households.

**Stand Up India:** Encourages women entrepreneurship with bank loans of upto Rs 10 lakh to 1 crore to setup greenfield enterprises.

**Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** Skill development scheme for all including women.

- ● The various **steps to achieve gender equality** can be studied under various heads.
  - ○ Combating **violence:**
    - ■ Through comprehensive legal frameworks, awareness campaigns, and support services for survivors.
    - ■ Initiatives such as helplines, safe houses, and counselling programmes.
  - ○ **Ending Child Marriage:**
    - ■ Laws setting minimum marriage age, girls' education promotion, raising awareness about the consequences of child marriage, economic empowerment for girls and their families, community engagement, and other targeted interventions.
  - ○ **Political empowerment:**
    - ■ Affirmative action, leadership training, and addressing systemic barriers
  - ○ **Economic empowerment:**
    - ■ Establishing equal pay for equal work, maternity leave and childcare policies, access to finance and entrepreneurship training, and encouraging women's participation in male-dominated areas.
  - ○ **Sexual and Reproductive Health Rights:**
    - ■ Governments should ensure sex education, family planning services, safe abortion services where legal, and investment in health infrastructure.
    - ■ Addressing stigmas, informing about rights and choices.
  - ○ **Land Rights:** Fundamental to economic empowerment.
  - ○ **Gender Budgeting**
- ● We need to make collective efforts involving governments, civil society, and individuals to create an equitable and women-inclusive world.
- ● Various **laws empowering women**:



Several significant Acts related to women's rights have been passed in India over the last 10 years. Some notable examples include:

- The Protection of Women from Domestic Violence Act, 2005.
- The Prohibition of Child Marriage Act, 2006.
- The Muslim Women (Protection of Rights on Marriage) Act, 2019 (criminalising instant triple talaq).
- The Protection of Children from Sexual Offences (Amendment) Act, 2019.
- The Medical Termination of Pregnancy (Amendment) Act, 2021.
- The Assisted Reproductive Technology (Regulation) Act, 2020.
- The Transgender Persons (Protection of Rights) Act, 2019.
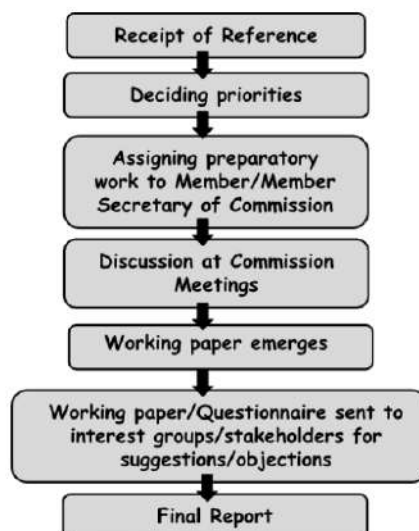
**Source: Yojana**

- ○ **Criminal Law (Amendment) Act, 2013 (Nirbhaya Act)**
    - ■ Concerning sexual offences.
    - ■ Nirbhaya **Fund** was established for women's safety and empowerment. Used for one-stop centres, helplines, infrastructure, etc.
- ○ **Maternity Benefit (Amendment) Act, 2017**
    - ■ Maternity leave period increased from 12 to 26 weeks.
- ○ **The Protection of Children from Sexual Offences (Amendment) Act, 2019**
- ○ **The Muslim Women (Protection of Rights on Marriage) Act, 2019**
    - ■ Criminalised instant triple *talaq* (divorce)
- ○ **Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013**
    - ■ Establish Internal Complaints Committee (ICC) in the workplace

## 4. Law Commission of India

- The Law Commission of India (**non-statutory** body) is **constituted by a notification** of the Government of India (GoI), Ministry of Law and Justice (MoL&J), and Department of Legal Affairs.
    - ○ **The notification lists definite terms of reference** containing **matters of law on which research is to be carried out** and **recommendations made** in the form of reports.
- It also takes up **subjects on references** made by the Department of Legal Affairs, Supreme Court (SC), and High Courts (HCs) and submits reports.
- The **22nd Law Commission** was constituted by the GoI with a 3-year term in February 2020, which has been extended to 31st August 2024.
- **Composition of the 22nd Law Commission:**
    - ○ **A** full-time **Chairperson**
    - ○ **Four** full-time **Members (including Member-Secretary)**
    - ○ **Secretary, Department of Legal Affairs as ex-officio Member**
    - ○ **Secretary, Legislative Department as ex-officio Member**
    - ○ **Not** more than five **part-time Members**
- **Functioning:** Based on **references** from GoI, SC, and HCs.
- *Suo moto* on specific matters, sometimes, if important.
- **Final Report:** The Commission evaluates the data and opinions/suggestions before incorporating them into the report.
    - ○ The report is then scrutinised by the full Commission in meeting.
    - ○ On report finalisation, a draft amendment/bill may be prepared and appended to the report by the Commission if needed.
    - ○ Report submitted to GoI for consideration.
- The **success of the Commission is dependent upon** the depth and breadth of its consultation i.e. how much data/views/suggestions it can gather and incorporate from a diverse range of stakeholders with its limited resources.
- **Reports:**
    - ○ Laid before Parliament from time to time by MoL&J.
    - ○ Forwarded to various Departments/Ministries for implementation.
    - ○ Acted upon by Departments/Ministries if required.
    - ○ Cited in courts, Parliament Committees, academic and public discourses.



Image: Working of the Law Commission of India

Receipt of Reference → Deciding priorities → Assigning preparatory work to Member/Member Secretary of Commission → Discussion at Commission Meetings → Working paper emerges → Working paper/Questionnaire sent to interest groups/stakeholders for suggestions/objections → Final Report

**Source: Yojana**

**5. Civil Services Reforms**

In a democratic polity, the civil services are a crucial organisation tasked with helping the political executive formulate policies, carry them out through initiatives that promote governance and welfare, and provide system maintenance services. Through its actions, it supports the executive, legislature, and to a lesser extent – the judiciary.

● **Part XIV of India's Constitution** provides for efficient 'public services' by creating the Union Public Service Commission and the State Commissions.
  ○ The civil services are called upon to play several roles, many of whose nature and scope remain unclear. It is expected to play a quasi political role when assisting political executives in their staff positions.
  ○ Most of the bureaucratic work takes place in relatively homogenous rule-bound spaces where Do's and Don'ts principles are well established.

Since a vast number of people depend upon the government services at the grassroots level, it is important that the interface between the civil services and people remains smooth and effective.



● Therefore, the emphasis is being laid upon the spirit of Jan Bhagidari and on plugging the trust deficit between citizens and government processes. **Through Mission Karmayogi, the 'bureaucracy' is expected to transform from a rule-bound organisation into an empathetic organisation, embracing the transformation from 'Rule to Role'.**
● **Mission Karmayogi acknowledges the heterogeneity and complexity** of the civil service architecture and makes incremental gains through capacity building at the interface point of civil servant-citizen.
● **The** mission focuses on (a) **the individual through its emphasis on the three-dimensional skills of behaviour, functional knowledge, and domain;** (b) the nature of the Civil Service by rendering it adept and adaptive through continuous upskilling; and (c) the quality of services delivered through a shift from Rule to Role.
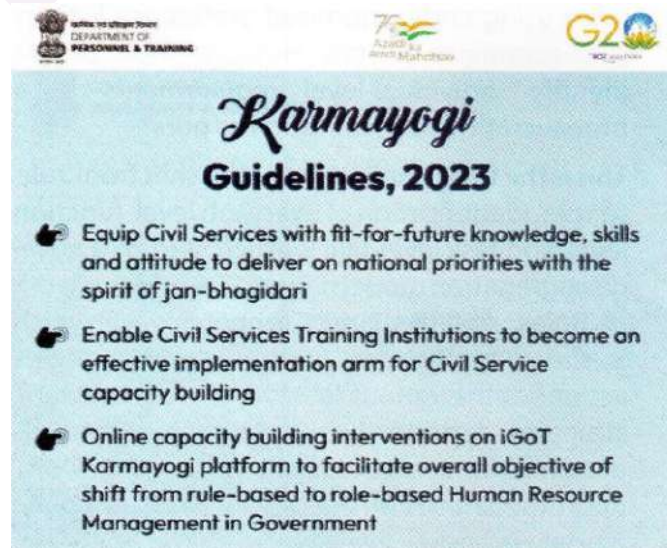
There exist certain challenges and implications related to the shift from a rule to role-based transformation.

● Moving away from top-led supervision, monitoring, and guidance will need effective command structures at the middle and bottom; **hence there must be emphasis on capability creation at the level of every individual civil servant.**

● Identification of every job level, function level, and task level skill is articulated by a model named **FRAC (Framework of Roles, Abilities, and Competencies)**, which is the mapping out of these multitudinous actions at the various levels of the bureaucratic structure.

● **While all the focus is at the citizen level, all the micro-steps must converge into a national whole**. A synergy needs to be brought via the annual capacity-building plans of ministries and their eventual alignment with the national direction.

● There needs to be an overarching governance framework for the mission. The Prime Minister-led Human Resource Council, supported by its secretariat- **the Cabinet Secretariat Coordination Unit** is a step in this direction.



**The long-needed change of a classic rule-bound bureaucrat into a role-driven 'civil servant' augurs well for the welfare of the public**. The Government of India's increased focus on the spirit of Bhagidari, on bridging the trust gap between citizens and government processes, on innovation, and on effective delivery thereby reflects a citizens-first strategy.

## 6. Role of Constitutional Bodies in Strengthening Democracy

The institution of democracy is built on constitutional bodies. The robustness of Indian democracy has been greatly influenced by their existence. The institution of democracy has developed and expanded to include more people.

**Democracy is imagined as a form of governance based on certain fundamental philosophies:**
● People should be a part of the governance structure because they are the subjects and beneficiaries of the governance setup.
  ○ **Various studies have demonstrated that collective decisions are more balanced and well thought out than individual judgements** since collective decisions take into account numerous points of view and must be modified to meet the needs of all stakeholders.

**Constitutional bodies are needed to establish, protect, and substantiate democratic ideals:**
● The most essential democratic body is the Indian Parliament, which makes laws. The Indian Parliament, where both Houses are directly or indirectly elected, performs this primary function as a constitutional body. **An elected legislature is a 'sine qua non' for establishing and strengthening democracy**, which functions on a majority decision-making system.
● Democracy proposes rights, which must be protected at an individual level, and they cannot be taken away even by the majority's will through the legislature. Thus, **Part III of the Indian Constitution** gives Fundamental Rights. **To protect these rights, another essential constitutional body is required, in the form of an independent judiciary.**
  ○ The crucial duty of protecting the Constitution itself falls to the courts as constitutional institutions. **In Kesavananda Bharati v. State of Kerala, the 'Basic Structure' doctrine** was evolved, which restricts the amending power of the Parliament.
● We have various constitutional bodies like the **Election Commission of India, the Union Public Service Commission, the Comptroller and Auditor General of India**, etc., which help in establishing the '**rule of law' in the** country.
  ○ In a 'rule of law' governance system, the law is supreme, every person and institution is subordinate to it, and there is no scope for discretionary and arbitrary decision-making.
● The endurance of Indian democracy has been greatly aided by the existence of powerful constitutional bodies. These organisations have supported democratic ideals, upheld the rule of law, and protected citizens' rights.
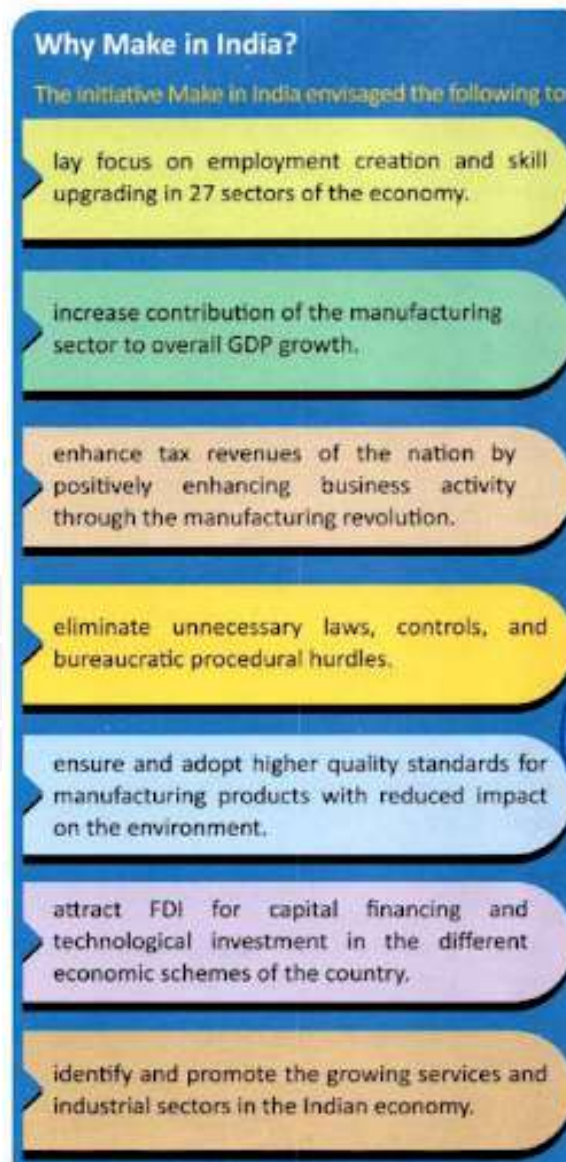
# KURUKSHETRA SEPTEMBER 2023

## 1. Make in India – Challenges, opportunities and Outcomes

The Government of India launched the Make in India initiative on 25 September 2014 aimed at promoting India's manufacturing domain to transform India into a global hub for manufacturing, design and innovation.

**Considering the importance of the manufacturing sector, the Make in India initiative is built on four pillars:**

1. **New Process:**
   - Ensuring an enabling environment to attract both domestic and foreign investment.
   - Improving the ease of doing business to promote entrepreneurship.
2. **New infrastructure:**
   - Developing industrial corridors, smart cities, and high-speed communication network amenities.
   - Simplifying procedures for registering intellectual property rights.
   - Providing training and education to create a skilled workforce.
3. **New sectors:**
   - 27 sectors in both manufacturing and service sectors to be covered under the Make in India initiative.

**Why Make in India?**

The initiative Make in India envisaged the following to:

- lay focus on employment creation and skill upgrading in 27 sectors of the economy.
- increase contribution of the manufacturing sector to overall GDP growth.
- enhance tax revenues of the nation by positively enhancing business activity through the manufacturing revolution.
- eliminate unnecessary laws, controls, and bureaucratic procedural hurdles.
- ensure and adopt higher quality standards for manufacturing products with reduced impact on the environment.
- attract FDI for capital financing and technological investment in the different economic schemes of the country.
- identify and promote the growing services and industrial sectors in the Indian economy.

| Manufacturing Sector | Service sector |
|---|---|
| ● Aerospace and Defence<br>● Automotive and Auto Components<br>● Pharmaceuticals and Medical devices<br>● Biotechnology<br>● Capital goods<br>● Textile and Apparel<br>● Chemicals and Petrochemicals<br>● Electronics systems design and manufacturing<br>● Leather and Footwear<br>● Food Processing<br>● Gems and Jewellery<br>● Shipping<br>● Railways<br>● Construction<br>● New and Renewable energy | ● Information Technology & IT-enabled services<br>● Medical Value Travel<br>● Transport and logistics sector<br>● Accounting and Finance service<br>● Audio Visual services<br>● Legal services<br>● Communication services<br>● Construction and related engineering services<br>● Environmental services<br>● Financial services<br>● Education services |

4　**New mindset:**
- Encouraging the government's partnership in economic development to foster ownership.
- Fostering the development of the corporate sector.

**Advantages of Make in India**
- **Creating a virtuous cycle through employment generation**:
  ○ Increasing employment opportunities, both in rural and urban areas, will increase people's purchasing power thereby expanding the consumer base, attracting more investment, generating more employment and addressing poverty.
- **Reducing Brain Drain:**
  ○ Improved education, training, and high-paying skilled jobs help reduce brain drain.
- **Improving Balance of Payments (BoP):**
  ○ Focus on export-oriented manufacturing processes improves the BoP position of the country.
- **Attracts Foreign Direct Investment (FDI)**
- **Inflow of technical expertise:**
  ○ The inflow of FDI and the setting up of manufacturing hubs will lead to an inflow of technical expertise on advanced technologies.

**Challenges in Make in India**



Figure: Challenges in the Make in India initiative

**Balanced Regional development:**
● The "One District One Product" program promoted under 'Make in India' aims to promote the production of indigenous products from each district, fostering balanced regional development.

**Impact of the Make in India Initiative:**
● **Ease of Doing Business:**
  ○ India's ranking improved to 63 in 2022, compared to 142 in 2014.
● **Foreign Investment:**
  ○ India saw the highest annual inflow of FDI at $84.84 billion in FY 2022.
  ○ Gross FDI in India grew to 2.6% of GDP during FY 2015 and 2022.
● **Agriculture Sector:**
  ○ Export of agriculture and allied services grew by 18% in 2020-21 over 2019-20, reaching a high of USD 50.2 billion in 2021-22.
● **Manufacturing Sector:**
  ○ Despite COVID disruptions, there was an increase in employment from 57 million in 2017-18 to 62.4 million in 2019-20.
  ○ Positive growth in gross value addition in the manufacturing sector.
● **Service Sector:**
  ○ Service exports grew by USD 48.4 billion in 2021-22 over 2020-21.

As a long-term sectoral intervention, the Make in India initiative has the potential to transform India into a world manufacturing hub. Care must be taken to ensure balanced regional growth and address issues of poverty, unemployment, and income and wealth disparities.

## 2. Changing Paradigm of Foreign Direct Investment

● The International Monetary Fund (IMF) defines Foreign Direct Investment (FDI) as the **acquisition of at least ten per cent of ordinary shares or voting power** in a public or private enterprise by non-resident investors.
● In simpler terms, FDI refers to foreign companies or individuals investing in a host country to establish or expand their business operations.
● **There are two types of FDI:**
  ○ **Horizontal FDI:** This involves investments to produce the same or similar goods in the host country as in the home country, driven by factors like profitability and lower labour costs.
  ○ **Vertical FDI:** It aims to exploit raw materials or be closer to consumers by acquiring distribution outlets, leading to cost-effective production.
● FDI methods include **Greenfield investments, Mergers and Acquisitions, and Joint Ventures.**
● Recent research indicates an **inverted U-relationship between a country's income level and FDI's impact on growth.**
  ○ Impact is more significant as a country moves from low to middle income, but diminishes as it becomes a higher-income nation.

**FDI in India**
● **In India, FDI enters through three main routes:**
  ○ **Automatic Route:** Foreign investors can invest without prior government approval.
  ○ **Government Route:** Foreign investors require government approval in cases where there are strategic interests.
  ○ **Merger and Acquisition:** Foreign companies acquire existing Indian companies.
● FDI in India has seen steady growth since 2005, increasing from 0.7% of GDP to over 2.4% by 2020.
● Top countries with FDI investment in India in 2022-23 include Mauritius (26%), Singapore (23%), the USA (9%), the Netherlands (7%), and Japan (6%).



**Chart 1: Inflow of Foreign Direct Investment in India**

Inflow of Foreign Direct Investment in India (US Billion Dollar)
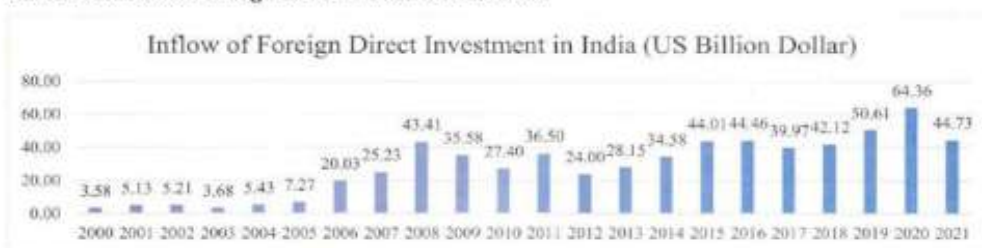
Source: World Bank

**Figure: Inflow of FDI**
**Source: Kurukshetra**

**Figure: FDI as a percentage of GDP**
**Source: Kurukshetra**

| Sectors | FDI reforms undertaken |
|---|---|
| Single-Brand Retail Trading (SBRT) | 100% FDI allowed under the automatic route, with relaxed local sourcing norms for inputs. |
| Construction sector | Minimum capitalization requirement was lowered from USD 10 million to USD 5 million. |
| Digital media | 26% FDI allowed under the government route. |
| Coal mining and civil aviation | 100% FDI allowed under automatic route. |
| Defence sector and Insurance sector | FDI limit increased from 49% to 74% under automatic route. |
| E-Commerce | Restrictions on exclusive deals, inventory control, and equity participation in vendors on platforms. FDI is not allowed in inventory-based models. |



**Impact of FDI in India's Manufacturing Sector and Make in India**
- Annual FDI inflow into India has increased considerably with the launch of the Make in India initiative.
- FDI supports the Make in India program by providing the **necessary capital, technology and expertise to set up modern and efficient manufacturing units.**
- The manufacturing sector in India contributes about 17.3% of India's Gross Domestic Product (GDP) and employs around 12% of the country's workforce.
- The automobile industry experienced remarkable growth, with a 25.47% increase from 2017-18 to 2018-19, coinciding with a substantial FDI equity inflow of 2.09 billion USD.
- Similarly, the textile sector attracted significant FDI investments totalling 1522 million USD from 2017 to 2022. This sector contributes 4% to India's total GDP and accounts for over 14% of the country's export earnings.

FDI plays a pivotal role in bridging the gap for emerging economies by providing capital and technological support for industrial development and driving economic growth.

## 3. Fostering Skills for Environmentally Conscious Sustainable Future

- Green jobs, as defined by the International Labour Organisation (ILO), are decent jobs contributing towards the preservation or restoration of the environment, whether in traditional sectors like manufacturing/construction or in new/emerging sectors such as renewable energy and energy efficiency.
- As per ILO, **green jobs help in**:
  - Improvement of energy and raw materials efficiency
  - Limits emissions of greenhouse gases (GHGs)
  - Minimisation of waste and pollution
  - Protection and restoration of ecosystems
  - Supports adaptation to climate change effects
- Green skills, according to the United Nations Industrial Development Organisation (UNIDO), are knowledge, abilities, values, and attitudes that are needed for living in, developing, and supporting a society that is sustainable and resource-efficient.
- **Green Skill Development Programme (GSDP):** Under this, the Union Ministry of Environment, Forests, & Climate Change **(MoEF&CC)**, by **utilising the ENVIS Hubs'** expertise and wide network, is enabling India's **youth to get employment through skill development** in environment and forest sectors.
- The responsibility for coordination of efforts towards **skill development in India** lies with the Union **Ministry of Skill Development and Entrepreneurship (MSDE),** the **nodal Ministry.**
- INSIDE has notified, on 58 December 2018, the **National Council for Voc.onal Education and Training (NCVET).**
  - It is regularly aligned with **NCVET guidelines and norms**.
  - All courses under it are **NCVET-approved**.
  - **Beneficiaries:**
    - School and college dropouts
    - Students in the environmental sector
    - Entrepreneurs
    - Working professionals (including those in industries)
    - Technical and scientific institutions
- **National Action Plan on Climate Change (NAPCC):** It is India's national strategy for adapting to climate change and enhancing the ecological sustainability of the development path. It has **eight missions** for a long-term and integrated approach.
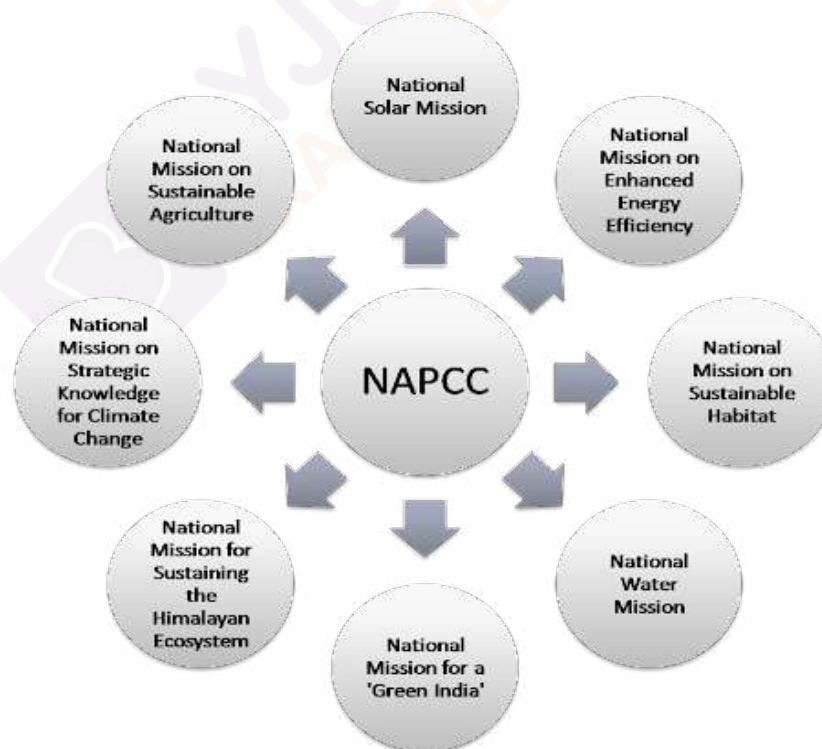


**Figure: NAPCC Missions**
**Source: Green Clean Guide**

- **Panchamrit Strategy:** India presented this strategy at the 26th Session of the Conference of Parties (CoP 26) to the UN Framework Convention on Climate Change (UNFCCC).
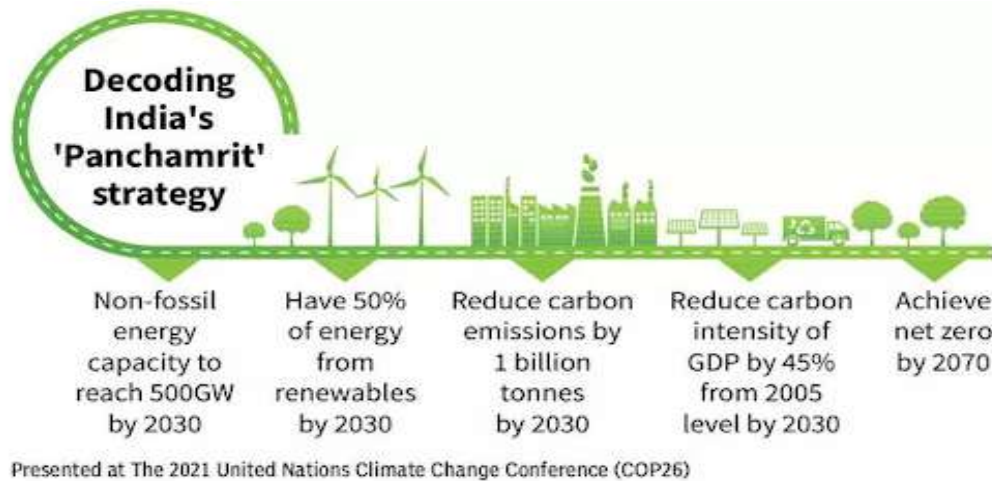
**Figure: India's Panchamrit Strategy**
**Source: The Hindu Businessline**

- As part of the **United Nations Decade of Action for Sustainable Development Goal (SDG) attainment**, several measures have been initiated by India for **Resource Efficiency** and **Circular Economy**, including waste management and prevention.
- **Resource Efficiency:** Creating more outputs (products/services) using less inputs (resources).
- **Circular Economy:** Keeping resources in use for as long as possible, extraction of maximum value, recovery and regeneration of products at end of each service life, in order to minimise natural resource extraction.
- **Extended Producer Responsibility (EPR)** and **Circular Economy** are based on principles of reduce-reuse-recycle and are relevant in promotion of sustainable consumption and production.
- Committees for the development of circular economy action plans have been constituted by the NITI Aayog.
- **MoEF&CC**
  - Nodal Ministry for **Circular Economy Action Plan for Tyre and Rubber.**
  - Notified '**Guidelines on the EPR for Plastic Packaging**' under **Plastic Waste Management Rules, 2016**.
  - Aims to foster a circular economy approach while moving away from a linear economy under the **draft National Resource Efficiency Policy, 2019.**
- **Bio-briquetting:** An off-farm sustainable technology which can be used to generate **biomass energy from pine needles.**
  - **G B Pant National Institute for Himalayan Environment** (an autonomous body under MoEF&CC) is promoting the manufacture of bio-briquettes and bio-globules among marginalised groups of villagers, leading to better resource utilisation and generating livelihood.
- The **Department of Science and Technology (DST)** along with the **Ministry of Education** is promoting R&D in environment-friendly and sustainable technologies and areas.
  - DST is supplying these technologies to **Make in India** to balance environment and development.
- **PARIVESH** (Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-window Hub) has led to the **automation of the process** of granting environment/forest/wildlife clearances for developmental projects.

## 4. Transforming Manufacturing

- **Make in India initiative:** Introduced in **2014** by the Government of India (GoI).
  - It seeks to **transform India into a manufacturing hub**.
  - It is a **multifaceted initiative** with **primary objectives** of domestic manufacturing promotion, foreign investment attraction, innovation encouragement, and opportunity generation.
  - **Ease of doing business** is an important component **for which GoI has taken measures** to streamline regulations, simplify licensing procedures, and create an investor-friendly environment.
  - **Fostering innovation and entrepreneurship** enhances the competitiveness of Indian industries.
  - Provides **market access** to manufacturers.
  - It acts as a **boon for innovators** because:
    - Creates an environment which **nurtures innovation and provides support**
    - **Financial incentives** for those seeking to establish manufacturing/R&D centres
    - Access to cutting-edge technology because of **technology transfer and collaboration** between Indian and global firms
    - Global recognition

- ○ **Manufacturing sector in India:** Prior to the pandemic, around 16-17% of India's GDP was contributed by the manufacturing sector.
  - ■ It provides employment to over 27 million people.
  - ■ India is targeting 25% of the economy's output from the manufacturing sector by 2025 seeing its rapidly growing potential, reaching around US$ 1 trillion by 2025.
  - ■ As per the Indian Cellular and Electronics Association (ICEA), through strategic policy interventions, India can achieve US$ 100 billion by 2025 by expanding its laptops and tab cumulative manufacturing capabilities.
  - ■ The total revenue of the Indian tech industry in 2022 is US$ 227 billion.
  - ■ The Indian startup ecosystem boasts 108 unicorns signifying innovation and entrepreneurship promotion.
- ● **Global Partnership on Artificial Intelligence (GPAI):** International initiative dedicated to the promotion of responsible and human-centric development and utilisation of AI.
  - ○ India is one of the **founding members** of the group which it joined in **2020,** and is one of **25 member countries.**
- ● **Sectors Pushing 'Make in India' Programme**
  - ○ **Automotive Sector:** The current value of this sector is US$ 74 billion and the industry has set a target of US$ 300 billion by 2025, creating an additional 65 million jobs.
  - ○ **Renewable Energy:** India has become one of the leading solar energy producers, contributing greatly to the global energy transition.
  - ○ **Electronics Hardware Manufacturing:** India aims to achieve self-sufficiency, create jobs, and attract FDI through local production.
    - ■ The sector aims to reach a turnover of US$ 400 billion, creating 28 million jobs, and increase exports to US$ 80 billion.
  - ○ **Food Processing:** It can become a sunrise sector in India. The Union Ministry of Food Processing Industries, under the Make in India, supports 135 integrated cold chain projects and has operationalised 7 Mega Food Parks (MFPs).
    - ■ Each MFP can generate 5000 jobs and can benefit 25000 farmers.
  - ○ **AI & Robotics:** AI & Robotics Park in Bengaluru backed by Rs. 230 crore seed capital.
    - ■ US$ 100 million venture fund established by ARTPARK and AI Foundry for promoting innovation in these fields in India.
  - ○ **Open Network for Digital Commerce (ONDC):** It was launched to establish a digital commerce ecosystem.
    - ■ It advocates for local innovation and production, empowering enterprises and entrepreneurs, and contributing to overall economic growth.

## 5. Leveraging Vocal for Local

Amidst the crisis of the COVID-19 pandemic, 'vocal for local' has emerged as a new path for development. A robust 'vocal for local' framework can strengthen the rural economy and usher the Indian economy towards the path of becoming the third largest economy in the world.

**The Rationale for Vocal for Local:**
The COVID-19 pandemic has led to agrarian distress, rising youth and educated employment and a decline in female labour participation. In the wake of this, 'vocal for local' could be a key driver for a self-reliant India.

- ● Inclusive growth, rural transformation and steady recovery are the primary objectives of the "vocal for local" call. **The larger objectives are to encourage the development of rural areas in line with Mahatma Gandhi's vision of self-sufficient and self-reliant communities** based on local resources and employing decentralised, eco-friendly technologies so that the basic needs are met locally.
- ● The **'Vocal for Local' strategy aims to make local products competitive with those of international brands by promoting local production, supply networks,** and brands in addition to Make in India. The fundamental idea behind this is to help and promote small businesses with constrained resources and markets.
- ● **The strategy aims to help and encourage small businesses with constrained resources and markets**. Additionally, "Vocal for Local" would tend to encourage Indians to develop a taste for buying and consuming local items.
- ● The **Ministry of Textiles** has tied up with India Post to leverage 4,00,000 Common Service Centres (CSCs), which have been primarily set up to offer government e-services to enable artisans to go online with their products and become competitive.

**Framework to leverage 'Vocal for Local':**

● A **comprehensive profiling or mapping of local resources** and demand and supply at the village level should be the starting point of this strategy.

● Panchayats in coordination with other stakeholders can create a system of visiting local businesses periodically to discuss their needs, challenges, and opportunities and also helping both aspiring and existing enterprises to get benefits from schemes and programmes.

a) A robust mix of quality, innovation, and pricing;

b) Preserve and promote local skills and products;

c) Generation of employment through localised manufacturing;

d) Establish reliable and independent sources of local raw materials;

e) Think local be global; and

f) Usage of resources in a rational and integrated way.

● **Gram Panchayat Development Plan (GPDP)** can play a direct role in identifying sectors, sub-sectors, and activities by their respective business potential and devise a mechanism to prioritise resource allocation.

● A **robust convergence framework is required to strengthen 'Vocal for Local'.** Efforts must be made to connect entrepreneurs, SFURTI, Van Dhan Vikas Kendra, One District One Product (ODOP), Cluster Development Programme (CDP), Common Facility Centres (CFCs), etc.

● **Community Resource Persons (CRPs)** such as Kisan Sakhi/Krishi Sakhi, Pasu Sakhi (Livestock CRP), Doctor Didi, Enterprise Promotion (CRP-EP), Bank Mitras, e-CRPs, etc., have key responsibilities of making the benefits available to their intended beneficiaries.

○ Hence, **the training and capacity building of these CRPs need to be improved on a regular basis** in order to inform them about changes in policies and programmes and to teach them new skills that will help them implement both on-farm and off-farm livelihood schemes more successfully.

The 'Vocal for Local' developmental strategy has the ability to encourage self-sufficiency, spur economic expansion, create opportunities, lessen dependency on imports, and provide the nation's small, micro, and SHG-based businesses a much-needed boost.

# SCIENCE REPORTER SEPTEMBER 2023

## 1. Himachal Floods Crisis Due to Ignoring Fragile Ecosystems

**Context:** The recent flash floods in Himachal Pradesh have resulted in severe damages, including the loss of 330 lives, the destruction of 12,000 houses, and a monetary loss of Rs 10,000 crore during this monsoon season in the state.
- Flooding in the Himalayan region has been a recurring issue, with notable incidents including the Kedarnath floods in 2013, the Chamoli floods in Uttarakhand in 2021, and the Amarnath flash floods in Jammu and Kashmir in 2022.

**Factors responsible for flooding and landslides in the Himachal Pradesh**
- **Climate change:**
  ○ According to IMD, In 2022, Himachal Pradesh experienced temperatures that were 1.2°C warmer compared to the Long Period Average (LPA) for the period 1981-2010.
  ○ Significant increase in rainfall in Shimla (20%-59%) compared to the 1971-2020 LPA.
  ○ Monsoon rainfall (742 mm) exceeded the average monsoon rainfall levels (730 mm).
- **Earthquake-prone zone:**
  ○ The entire Himalayan region, including Himachal, falls under zones IV and V of earthquake-prone areas.
- **Deforestation:**
  ○ Clearing trees and shrubs for development projects destabilises slopes and increases the risk of erosion.
- **Unplanned development:**
  ○ Vertical cutting of mountains for road widening and the use of unskilled labourers contribute to the destabilisation of slopes.
  ○ Use of dynamites for tunnel blasting.
  ○ Large-Hydropower projects in earthquake-prone zones.
- **Tourism:**
  ○ A significant increase in tourist footprints, up by 54.88% in 2021 compared to 2008, has led to unchecked construction that affects water streams, riverbeds, and mountain slopes in Himachal.

**Measures to prevent flooding and landslides:**
- **Construction:**
  ○ Adopt **terraced cutting of roads** to minimise environmental impact.
  ○ Use a **blend of modern and traditional construction techniques** like the Kath-Kuni style.
  ○ Conduct geological assessments of soil, slope, and water movements before construction in hilly areas.
- **Hydropower Projects:**
  ○ Small hydropower projects over Large hydropower plants to reduce environmental degradation.
- **Long-term pre-disaster planning:**
  ○ Emphasise long-term planning with vulnerability assessments and focus on adaptation and mitigation measures.
- **Awareness and training**:
  ○ Involve local youth in studying environmental changes.
  ○ Conduct afforestation programs on hill slopes and promote wetland conservation.
- **Technology:**
  ○ Increase weather stations, implement real-time early warning systems, and use advanced flood modelling techniques to identify high-risk areas.
- **Agriculture:**
  ○ Promote traditional and eco-friendly crops and horticultural practices.

**Conclusion:**
Development that exceeds the carrying capacity and leaves a high ecological footprint, while disregarding nature, has been the root cause of flooding and landslide disasters in Himachal. Robust policy implementation and environmentally friendly actions on the ground are now crucial to address these challenges.

**2. Kurkut — A Tribal Delicacy**



**Image: Red ants**
**Source: Science Reporter**

**Introduction:**
*'Kurkut'* is the local name of **red ants** (*Oecophylla smaragdina*). These ants use larval silk for weaving together leaves to form their nests, hence giving them the name **weaver ants (red weaver ants)**.

A section of people in **Jangalmahal in south-west West Bengal** earn their livelihood by collecting red ants and their eggs from forest and selling them.
● The ants are **collected usually during winter** (November to February) by poking a hole in their nest and collecting them.

**Red weaver ants:** Arboreal ants of 8-10 mm size with copper-brown skin colour with relative dark black head and belly.
● These are social animals with both queen and male ants having wings.
● Queen ant sheds its wings after mating and builds a nest with worker ants without male ants' help.
● Male ants usually die after mating.
● A queen ant can lay eggs for many years.
● Most larvae which hatch from eggs later become worker ants.



**Figure: Red ant nest**
**Source: Science Reporter**

● Small-sized workers and infertile female ants provide necessary food inside nests.
● They are **omnivorous** and **hunt small insects** such as termites, and plant parts, nectars, etc. for their juices mainly.
● They **liquify solid food** using chemicals before eating as they **cannot eat solid food**.

- Their **nests** are called *'Kurkut potam'*. They have no specific entry/exit. Built from leaves of **tall and large leafy trees** such as Sal, Mango, these are covered with sticky liquid secreted by their larvae and cobwebs. Nests on tall trees also keep them safe from forest fires.
  - **Nesting is most common in winter**.
  - Their bites are very painful accompanied by a sharp burning sensation (due to **formic acid** secreted from their abdomen). They **do not have a stinger.**

**Entomophagy**
- The practice of **consumption of insects as a source of nutrition** by humans is known as entomophagy.
- It is practiced in most parts of the world, **especially in tropical regions** where around 2000 different species are known to be consumed.

**Reasons for prevalence of Entomophagy in Tropics**
- Availability
- Large Size
- Easy to Harvest

**Concerns related to Entomophagy**
- **Allergies**
- **Unclear legislations** and **regulation**
- **Gastronomy:** Creating products which are attractive for a larger audience and widely marketable.
- **Behavioural Change** in favour of consumption

Red weaver ants form an important tribal delicacy across India due to high **protein, fatty acids, calcium, and vitamin C**.
- *'Chokha'* is the sour, quick, and tasty pickle prepared from battered red ants and their eggs with salt, ginger, green chilly, and mustard oil for **entomophagy**.

*Kurkut* **has many medicinal uses as per traditional healers:**
- Soup of battered *kurkut* is prescribed for getting rid of accumulated phlegm
- Prescription of regular intake
  - To improve immunity and raise body temperature
  - To prevent rheumatism
- **Oils prepared by dipping weaver** ants in them can be used externally to cure rheumatism, gout, ringworm, and other skin diseases.
  - It is also used as an aphrodisiac.

**Other applications:**
- Red ants are recognised as **biological control agents** in tropical tree crops due to their predatory nature, hence protecting them from various insects and pests **(an alternative to chemical insecticides)**.
- Popular **fishing bait**
- Larvae used as **feed for insect eating birds** in Indonesia

## 3. Chiral Bose-Liquid: A New State of Matter

**Introduction:**
We encounter solid, liquid, and gaseous phases of matter on a daily basis. However, the behaviour of matter changes dramatically from what we observe in our macroscopic world when it reaches the quantum realm, which occurs at temperatures close to absolute zero or inside the atom.

Such a state is called a **"frustrated quantum system",** by various physicists. It signifies that infinite possibilities can result from the interaction of particles and some of these infinite possibilities can lead to novel quantum states of matter.
- For example, scientists at the **University of and his co-workers have reportedly engineered a frustration machine, a bilayer semi-conducting device**, whose top layer is electron rich and these electrons can move freely, while the bottom layer contains "holes" or places that roving electrons can occupy.

The **Chiral Bose-liquid state is a new state of matter**, created when two layers are close together, resulting from a local imbalance, causing electrons to have insufficient holes for filing. The term "Chiral" comes from the Greek word for "hand," meaning anything that cannot be superimposed on its mirror image.
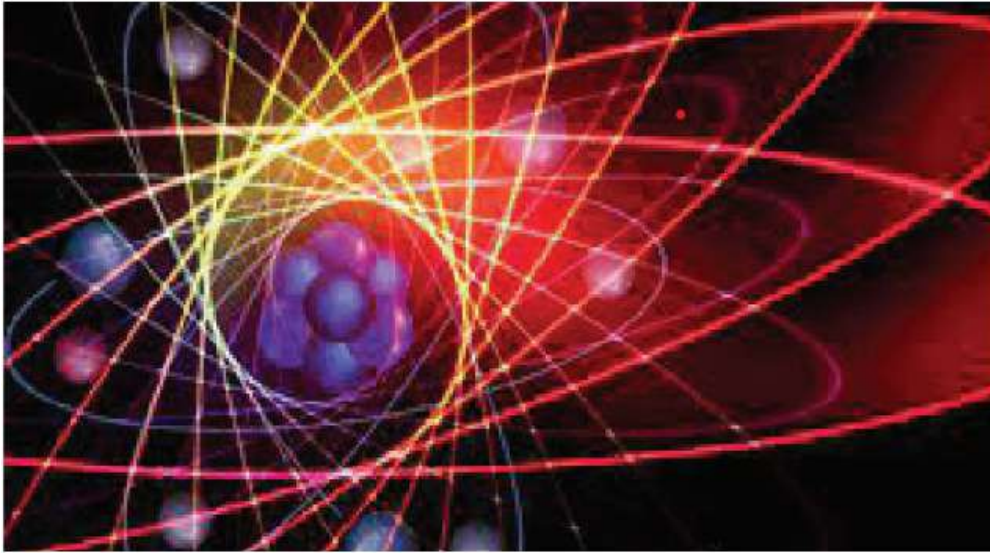
*Chiral Bose-liquid state (A representational image)*

**Source: transcontinentaltimes**

**Electrons in the Chiral Bose-liquid state exhibit unique propertie**s, including predictable patterns, synchronisation, and resilience to spin changes. **They remain unaffected by collisions with other particles or by the introduction of magnetic fields.** Particles react in the same way, a phenomenon attributed to the long range entanglement present in this quantum system

● Chinese physicists conducted an **experiment using a strong magnetic field to observe the Chiral Bose-liquid state**, overcoming its complexities and enabling the measurement of electron movements as they engage in their dynamic interactions.

● Physicists explain that the **semiconductor bi-layer's edge experiences helical-like transport due to the simultaneous movement of electrons and holes**, potentially influenced by external magnetic fields.

**Conclusion:**
Researchers conducted magneto-transport experiments, revealing the first concrete proof of the Chiral Bose-liquid state, also known as the "exitonic topological order", revealing quantum phenomena' fascinating behaviour under extreme conditions, and opening new applications including the **development of advanced digital encryption systems, opening doors to advancements in information technology and cryptography.**

# DOWN TO EARTH SEPTEMBER 2023

## 1. BLATANT VIOLATIONS

**Introduction:** An audit by the Comptroller and Auditor General of India (CAG) has unveiled substantial irregularities in the implementation of Pradhan Mantri Jan Arogya Yojana (PMJAY), India's flagship health insurance scheme for the poor. PMJAY aims to provide a ₹5 lakh annual health cover per family through a network of healthcare providers, but the audit has raised concerns about its effectiveness and transparency.

**Audit Findings:**
- **Beneficiary Discrepancies:** While PMJAY intended to cover 107.4 million impoverished households, only 18.9 million were registered by July 2021. The audit questioned the outdated data used to identify beneficiaries, as the scheme relied on information from 2011.
- **Out-of-Pocket Expenses:** Despite its goal to reduce out-of-pocket spending, the audit discovered instances where patients had to pay for treatment. For example, in Meghalaya, 69% of beneficiaries incurred ₹12.34 crore in expenses.
- **Empanelment Issues:** PMJAY empanels hospitals to deliver services, but the audit revealed disparities in hospital quality and availability. Several empanelled hospitals lacked crucial services like fire safety measures, waste management, and standard treatment practices.
- **False Claims:** The scheme authorized claims for patients who were already deceased, totaling ₹6.97 crore. Such discrepancies cast doubts on the scheme's oversight and management.
- **Duplicate Records:** Duplicate records, including beneficiaries registered under fake mobile numbers, were identified, raising concerns about the verification process.

**Implications:**
- The audit's findings have exposed significant flaws in PMJAY's implementation, jeopardizing its mission to provide accessible healthcare to the underprivileged.
- The discrepancies in beneficiary data, out-of-pocket costs, and hospital quality present substantial challenges to the scheme's effectiveness.

**Conclusion:**
To ensure the success of PMJAY and similar initiatives, the Indian government must address the issues outlined in the audit. Prioritizing data accuracy, enhancing hospital quality, reducing fraudulent claims, and strengthening the public healthcare system are essential steps to fulfill PMJAY's noble objectives of delivering affordable healthcare to India's vulnerable populations.

## 2. Maharashtra's proposed Approach: Sterilizing Leopards to Mitigate Human-Leopard Conflicts

**Context:** Human- Leopard conflicts in India have surged in recent years, presenting formidable challenges to wildlife conservationists and local communities alike. Maharashtra, a state grappling with this issue, has put forth an unconventional solution - the sterilization of leopards. This proposal has sparked a fervent debate regarding its viability and ethical implications.

**Key points:**
- **Escalating Conflict:** The escalating conflicts between leopards and humans can be primarily attributed to the relentless expansion of human settlements into leopard habitats. The cultivation of water-intensive crops like sugarcane has led to the proliferation of dense vegetation, transforming these areas into prime habitats for leopards.
- **Population Control:** Proponents of sterilization view it as a humane approach to curb the leopard population. This method offers reversibility, inflicts minimal harm on the animals, and holds promise for reducing conflicts between leopards and humans.
- **Challenges and Apprehensions**: Critics, however, contend that sterilization may not yield the anticipated conflict reduction and could prove resource-intensive. There are also concerns regarding the stress experienced by captured leopards and the potential alterations in territorial behavior.
- **Coexistence Perspective:** Some communities in Maharashtra have opted for coexistence with leopards, underscoring the importance of maintaining cleanliness and effective waste management practices to deter leopard attraction.

**Conclusion:**
The proposal to sterilize leopards in Maharashtra marks a bold attempt to address an increasingly urgent issue. Achieving a harmonious equilibrium between wildlife conservation and conflict mitigation poses an ongoing challenge within India's broader efforts to safeguard its diverse wildlife. Balancing these factors remains essential to secure the future of both humans and leopards sharing this unique environment.

## 3. Hybrid Take Over

**Context:**
Increasing adoption of hybrid varieties due to sales by private firms and bounty yields is threatening the crop diversity of the country and traditional seed varieties.

**Why do Farmers adopt Hybrid Varieties?**
- The primary reason for the adoption of hybrid varieties is due to their better yields when compared to traditional varieties.
- Hybrid varieties also get ready for harvest quickly when compared to traditional varieties or open-pollinated variety (OPV) seeds
- An increasing share of the private sector in the seed market from 57.3 per cent in 2017-18 to 64.5 per cent in 2020-21 according to the 25th report of the Standing Committee on Agriculture.
- Incentives and higher commissions are given by private firms to dealers for the sale of a hybrid variety of seeds.
- After the 1980s the government allowed the development and distribution of hybrid seed varieties by private players which saw an upward trend since then.
- The recalling of popular seed varieties by the government also pushed farmers towards the private sector.

**Issues with Hybrid varieties:**
- Hybrid varieties are sensitive to changes in temperature and rain patterns, unlike traditional and OPV varieties.
- Increasing instances of crop failure and declining yield in hybrid varieties such as maize, moong etc
- Domination of private players also results in a hike in seed prices when there is a rise in demand.
- The lack of timely release of seeds by seed banks also pushes farmers towards the private sector.
- Due to the primary focus on profit, the adoption of HYV seeds has resulted in the destruction of the genetic diversity of crops. Due to low production traditional local varieties are not grown despite their ability to withstand adverse conditions.
- This has also resulted in a decline of traditional varieties that are suited to the climates of their native place.

## 4. Rise of Aliens

**Context:** Recently the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), an independent intergovernmental body, released an assessment on invasive alien species and their impacts on people and biodiversity.

**Findings of the report:**
- An increasing rate of biological invasion is causing species extinction and threatening ecosystems globally.
- Biological invasions are caused due to shifting of plants and animals for profit or through global transport.
- The effect of Invasive Alien Species is that they breed rapidly in areas away from their natural ecosystems, alter the areas and destroy native species.
- Biological invasions have grown to such an extent that globally, alien species are now one of the five major drivers of change in nature along with land- and sea-use change, direct exploitation of organisms, climate change and pollution.
- 90% of global extinction occurred in islands and 60% of them were caused by Invasive Alien Species.
- The Invasive species also put a massive economic burden which increased at a fourfold rate per decade. In 2019 the economic cost of Invasive alien species is $423 billion dollars.
- They also affect a good quality of life.
- Human activities have caused the translocation of some 37,000 alien species across the planet, with evidence of negative impacts for more than 3,500 of those categorised as invasive
- For example, European shore crab has destroyed shellfish beds in New England and Canada.
- Invasive species not only alter the local ecosystems but also afflict water, biology and soil security making local livelihoods difficult, particularly for those who depend on the ecosystems for survival.
- Ultimately the economic impact of Invasive species affects poor and disadvantaged sections of society leading to marginalization and inequality, gender and age-differentiated impacts.

## 5. On thin ice

**The continent of Antarctica faced some unusual issues in 2023.**
- **Record low sea ice cover:** As per NASA Earth Observatory data, during peak winter in July 2023, the sea ice cover in Antarctica was 13.5 million sq. km, the lowest since 1978.
  - In Antarctica, during summer (between December and February), sea ice cover melts. The sea ice cover returns to its original condition in winters.
- **Early opening of the ozone hole** above the continent.

**Five-Sigma Event**
- It is an event whose occurrence is highly **rare** and **unlikely**, but is considered to be very **significant** in scientific research and data analysis.
- In statistics, **standard deviation is represented by sigma**. It signified the **deviation of individual data points from mean** or average.
- **Five-sigma is five standard deviations** away from the average, i.e. very rare and unlikely.

The **declining sea ice cover in Antarctica** has been termed by scientists as a **five-sigma event,** i.e. such low sea ice cover would have happened once in 7.5 million years in absence of climate change.
- Atmosphere-ocean interaction leads to formation of and existence of sea ice.
- There is **reduced freeze potential** due to warming of both Southern Ocean sea surface and lower atmosphere resulting in **reduced thermodynamic ice growth**.
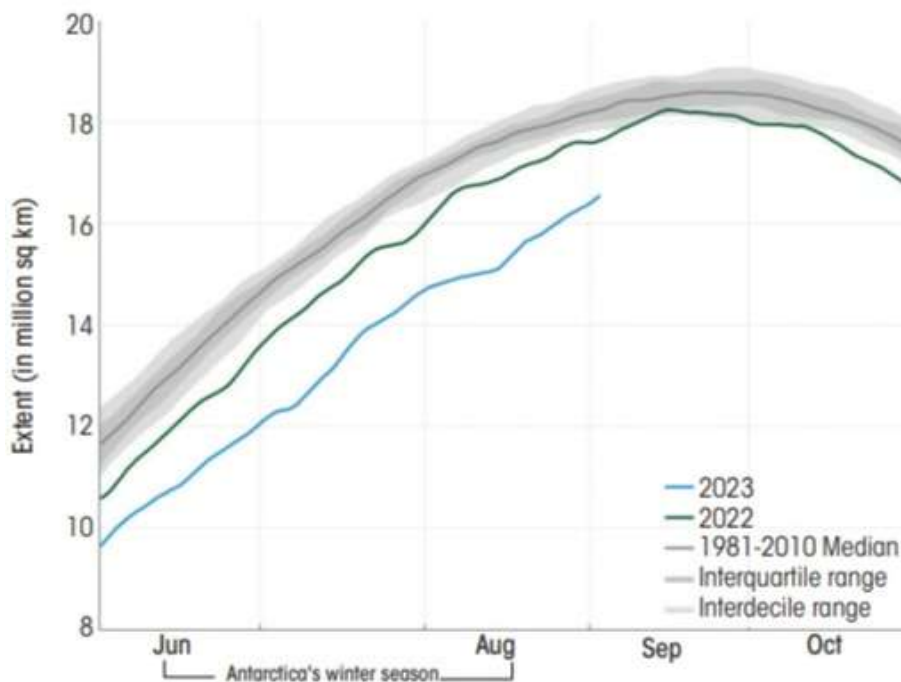


**Image: Shrinking sea ice**
**Source: Down to Earth**

There has also been an **alteration in the position of the polar vortex** due to global warming.
- **Polar vortex** is a large area of low pressure and cold air that surrounds both the poles of the Earth.
- There has been an **increased southerly flow of polar vortex over sea ice of Antarctica**, pushing more sea ice towards south.

The **persistent reduced sea ice cover trend in Antarctica** can have **cascading impacts** on the rest of oceanic and atmospheric systems.
- **Feedback loop:** Reduced sea ice cover leads to more absorption of Sun's energy, further increased melting and reduction of ice cover.
- **Reduced 'bottom water':** Reduction in sea ice cover implies reduced bottom water production.
  - The bottom water is a **critical element which drives the meridional overturning circulation**, and with it the **oceanic 'conveyor belt'** that is responsible for renewing water masses across many depth levels in the global ocean.

**Bottom water**
- It is **coldest and densest water mass** on Earth.
- It plays a **major role in the ocean's ability to store heat and carbon capture**.

**Meridional Overturning Circulation**
- An underwater phenomenon where the warm ocean water travels from Equator towards North North Atlantic and cold water flows back from North Atlantic towards Equator and then to Antarctica.
- The loop gets completed when the water flows back towards Equator and warming back again.
- This **circulates heat as well as nutrients** across the globe.
- **Gases and other material exchange between ocean and atmosphere** is disrupted.
- **Aerosol production** gets affected leading to less cloud cover over the Southern Ocean implying more Sun's energy reaching Earth and higher heating.

There have been **recurrent extreme weather events** due to reduced sea ice cover and rising temperatures.
- **High pressure systems** were also held responsible for these as per latest research.

**Other environmental impacts:**
- **Marine heat waves**
- Threat of **circumpolar deep water cutting through Antarctic ice shelves**
- **Accentuated melting of ice shelves and glaciers**
- **Effect on ice flow**
- **Impact on local ecology**
- **Opening of the ozone hole in August 2023** triggering fears of larger than an average ozone hole. It is said to be caused by the **Hunga-Tonga volcanic eruption** in January 2022. This eruption injected unprecedented amounts of **water vapour** into the atmosphere.
  - Increased stratospheric water vapour content increases **polar stratospheric cloud (PSC)** formation causing more ozone depletion.
  - There have also been **instances of the ozone hole closing late and persisting longer** (late-closing record of December 28th, 2020).
- Enhanced PSCs formation and cooling of the Antarctic stratosphere by the water vapours **forms a stronger polar vortex**.

**Antarctic ozone hole**
- It is the **annual thinning of ozone layer** in stratosphere.
  - **Ozone layer** is the layer which contains high concentration of ozone molecules absorbing Sun's UV radiation.
- It **begins every year in September**, **peaks in October,** and **closes in November-December**.
- Usually smaller during El-Nino years.
- It has been gradually healing since **Montreal Protocol (1987).**



**Wide open**
The size of the Antarctic ozone hole area in 2023 (red line) shows a fast development during August. The ozone hole has remained unusually persistent between 2020 and 2022
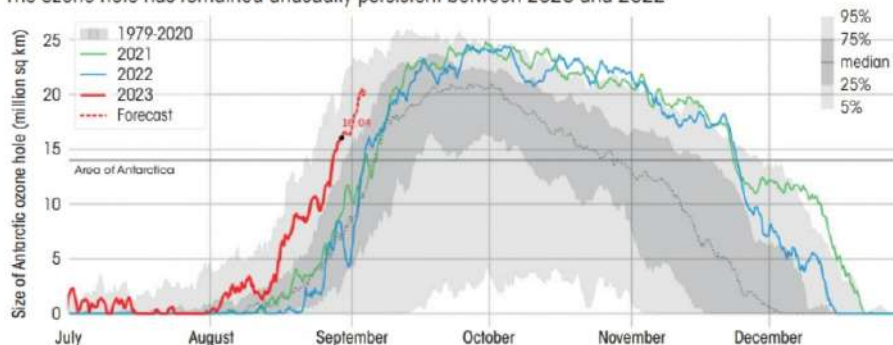
**Image: Antarctic ozone hole size**
**Source: Down to Earth**

**6. Green Sails**

**Context:** Recently, a German-based multinational company, MAN Energy Solutions, announced the successful testing of an ammonia-run marine engine.

● The **International Maritime Organization's (IMO)** Greenhouse Gas Strategy, adopted in July 2023, has set a target to achieve net-zero greenhouse gas (GHG) emissions in maritime shipping by 2050.

● According to the recent IPCC report, the maritime shipping sector is responsible for nearly 3% of anthropogenic GHG emissions worldwide.

## Fuelling pollution
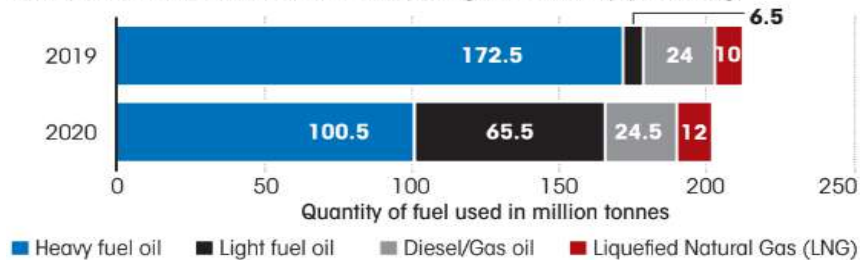Except LNG, all fuels used in shipping are heavily polluting

| Year | Heavy fuel oil | Light fuel oil | Diesel/Gas oil | Liquefied Natural Gas (LNG) |
|------|----------------|----------------|----------------|------------------------------|
| 2019 | 172.5 | | 24 | 10 (6.5) |
| 2020 | 100.5 | 65.5 | 24.5 | 12 |

Quantity of fuel used in million tonnes

**Figure: Types of shipping fuels used**
**Source: Down to Earth**

● **Alternative fuels for decarbonising the Maritime sector:**
  ○ **Ammonia-run marine engine:**
    ■ Ammonia ($NH_3$) is a compound of Nitrogen and Hydrogen.
    ■ **Advantage: Higher energy density than Hydrogen.** One cubic metre of liquid ammonia has three times more energy than compressed Hydrogen ($H_2$).
    ■ **Disadvantages**: Toxic to humans and wildlife, Nitrous oxide ($NO_2$) emission while combustion.

---

**How Ammonia is produced?**
● Air is first compressed and purified to remove $CO_2$ and water vapour, and then cooled to separate Nitrogen, Oxygen and other elements.
● Nitrogen is then combined with Hydrogen to produce Ammonia ($NH_3$).

---

  ○ **Hydrogen Fuel cell:**
    ■ **Advantages:** Requires less maintenance, has lower operating costs, and is quieter than traditional internal combustion engines.
    ■ **Cochin Shipyard Limited started the construction of the first Hydrogen fuel-cell-powered catamaran vessel in India.**

Cochin Shipyard Limited's rendering of India's first hydrogen fuel cell vessel being developed by the government-owned company

**Figure: First hydrogen fuel-cell-based vessel in India**
**Source: Down to Earth**

- ○ **Green Methanol:**
  - ■ **Bio-methanol:** Produced from biogas, solid organic waste, and bagasse.
  - ■ **E-methanol:** Derived from Hydrogen produced from renewable electricity and CO2 captured using direct air technologies.
  - ■ **Advantage:** Higher volumetric energy content than Ammonia or Hydrogen and requires less frequent refills.
- ● The long-term strategy to decarbonise the maritime shipping industry should consider three important factors: the **type of fuel used, shipboard technologies including engine type, and operational factors such as speed.** However, it's worth noting that none of the present alternatives offers a complete solution for the industry's requirements, which aim to simultaneously decarbonise and reduce the cost of voyages.

# Comprehensive Learning Programs by BYJU'S to Crack IAS

**BYJU'S Online Classroom for IAS**
A comprehensive IAS program with a combination of live online lectures, self-assessment tests, and exclusive doubt clearing sessions.

**BYJU'S IAS Tablet**
Prepare at your own convenience, anywhere and anytime with the BYJU'S IAS Tablet.

**BYJU'S IAS Classroom Program**
Prepare for Prelims and Mains with India's Leading IAS trainers.

**Mentor Support**
A dedicated mentorship helpline to provide complete guidance throughout the preparation process.

**Student Portal**
Get access to recorded sessions of the Weekly Webinar, Issues in News, Current Affairs Magazine, Gist of Yojana and Practice Sets.

**Current Affairs Webinar**
Twice a week live webinar classes to discuss current affairs followed by handouts.

**Study Material**
In-depth coverage of syllabus which includes the following study material: Indian Polity by M Laxmikanth, India's Ancient Past by R S Sharma, History Of Modern India by Bipan Chandra, Ethics, Integrity and Aptitude by P N Roy Chowdhury and G Subba Rao +15 more titles.

**Test Your Knowledge**
Perfect your answer writing skills for the Civil Services mains exam by improving your knowledge with modular tests at regular intervals, question paper discussions, answer writing strategies, essay writing strategies and personalised analysis of the answers.

**Current Affairs Updates**
All the three stages of the Civil Services Exam – Prelims, Mains and the Interview require the aspirants to be up-to-date with the current affairs. Regular and in-depth current affairs updates will help you stay updated.

## Additional Features

- Daily Video Analysis of The Hindu

- **YouTube Videos:** International Relations This Week, Economy This Week, Target Prelims etc

- Objective and Descriptive Type Unit Tests

- **Daily Updates on Free IAS Prep Website:** Comprehensive News Analysis, PIB Summary

- Gist of Yojana, Kurukshetra and Economic and Political weekly magazines

- Current Affairs Magazine

- **Test Series** – Prelims and Mains

- Interview Guidance