



**SHANKAR**  
**IAS PARLIAMENT**  
*Information is Empowering*

# CURRENT AFFAIRS MAGAZINE

**JUNE 2024**

---

News Analysis



SCAN TO  
DOWNLOAD



SINCE 2004

[www.shankariasacademy.com](http://www.shankariasacademy.com)  
[www.shankariasparliament.com](http://www.shankariasparliament.com)

## INDEX

### 1. IMPORTANT TOPICS OF THE MONTH3

- 1.1 The Lok Sabha Speaker ..... 3  
1.2 UN Security Council (UNSC)..... 5

### G.S PAPER I .....7

### 2. HISTORY .....7

- 2.1 Connection Between the Harappan and the Vedic Age.....7  
2.2 Relevance of International Yoga Day for India.. 9  
2.3 Nalanda University..... 10

### 3. GEOGRAPHY .....13

- 3.1 Water Crisis in Delhi..... 13

### 4. SOCIAL ISSUES .....14

- 4.1 Culture and Civilisation ..... 14

### G.S. PAPER II.....16

### 5. INDIAN POLITY .....16

- 5.1 Right to Promotion ..... 16  
5.2 Cabinet Committees ..... 18  
5.3 Flaws in Indian Judicial system ..... 20  
5.4 Parliamentary Oath..... 22

### 6. GOVERNMENT POLICIES AND INTERVENTIONS.....23

- 6.1 AMRUT Scheme ..... 23  
6.2 Agnipath Scheme ..... 25  
6.3 Pradhan Mantri Awas Yojana ..... 27  
6.4 Railway Accidents ..... 29

### 7. GOVERNANCE.....31

- 7.1 Special Category Status..... 31  
7.2 Women's Participation in Politics ..... 33  
7.3 Mission Karmayogi ..... 34  
7.4 GST Council ..... 36  
7.5 Global Gender Gap Index 2024 ..... 38  
7.6 Importance of Whistleblowing in a Democracy 39

### 8. HEALTH.....42

- 8.1 Tobacco Epidemic in India..... 42  
8.2 Women Health ..... 44  
8.3 Health-care Costs in India ..... 45  
8.4 Tuberculosis in India..... 46

- 8.5 H5N1 vs H5N2..... 48  
8.6 Biopharmaceutical Alliance ..... 50  
8.7 Digital Health Incentive Scheme ..... 52  
8.8 Higher Dengue Infections in Europe..... 54  
8.9 Impact of Air Pollution on Human Health..... 56

### 9. BILATERAL ISSUES.....58

- 9.1 India - Canada ties ..... 58  
9.2 India- Singapore Ties ..... 60

### 10. INTERNATIONAL ISSUES .....62

- 10.1 WTO Arbitration..... 62  
10.2 Evaluation of India's Neighborhood Policy..... 63  
10.3 G7 Summit ..... 65  
10.4 Outcomes of BRICS Foreign Ministers' Meet... 67

### G.S PAPER III .....69

### 11. ECONOMY .....70

- 11.1 Women in Corporate roles ..... 70  
11.2 Inequality and Growth..... 71  
11.3 Global Public Debt Crisis ..... 72  
11.4 Annual Survey of Unincorporated Sector Enterprises (ASUSE) ..... 74

### 12. AGRICULTURE.....77

- 12.1 Direct Seeding of Rice ..... 77

### 13. ENVIRONMENT .....79

- 13.1 Green Energy in India ..... 79  
13.2 Nitrous Oxide (N<sub>2</sub>O) Emission..... 80  
13.3 Eco-Sensitive Zones of Western Ghats ..... 82

### 14. SCIENCE & TECHNOLOGY .....85

- 14.1 Nuclear Techniques in Global Food Standards 85  
14.2 Global Principles for Information Integrity ..... 87

### 15. INTERNAL SECURITY.....90

- 15.1 National Security Doctrine ..... 90

### 16. DISASTER MANAGEMENT .....92

- 16.1 Heatwave Crisis..... 92  
16.2 Non-Inclusion of Heatwaves in Notified Disasters 94  
16.3 Forest Fires in Himachal Pradesh ..... 96  
16.4 Ecological Disasters in Sikkim..... 98

## JUNE 2024

### 1. IMPORTANT TOPICS OF THE MONTH

#### 1.1 The Lok Sabha Speaker

##### Why in news?

Recently, as the 18<sup>th</sup> Lok Sabha convenes, political parties of the coalition are competing for the Speaker's post.

##### What is the position of Speaker in India?

- **Background** – Since India follows the *Westminster Model of government*, the parliamentary proceedings are headed by a presiding officer, who is called the Speaker.
- **Office of speaker – Article 93** of the Indian Constitution provides for the offices of the Speaker and Deputy Speaker.
- He shall be elected as soon as may be after the commencement of the house.
- **Selection** – After a pro tem or temporary Speaker administers the oath to new members of the house, the Speaker is *elected by a simple majority* in the House.
- Usually by convention, a member belonging to the *ruling party* is elected as Speaker.
- **Tenure** – It is *co-terminus with the term of the Lok Sabha* that is 5 years unless he/she resigns or is removed from office before that.
- **Removal – Article 94** provides that a motion of no-confidence can be moved against the Speaker with *notice of 14 days*.
- **Disqualification** – The Speaker can also be removed on getting disqualified from being a Lok Sabha member under the *Representation of the People Act, 1951*.
- **Resignation** – A speaker can also tender his resignation to *a Deputy Speaker*.
  - **Dr. Neelam Sanjiva Reddy** is the only Speaker who resigned from the office.
- **Qualification** – There are no specific qualifications for becoming Speaker, but he must be a *member of the house*.
- **Independence** – The salary of the Speaker is drawn from the *Consolidated Fund of India* unlike for other MPs.

##### Pro Tem Speaker

- He/ she is the senior most member of the newly elected Lok Sabha.
- **Appointed by** – The president during the first meeting of the newly-elected Lok Sabha and the President himself administers oath to the Speaker Pro Tem.
- **Role** – He/She *presides over the first sitting* of the newly-elected Lok Sabha and has all the *powers of the Speaker*.
- **Main responsibility** – To administer oaths to the new members and to enable the House to elect the new Speaker.
- **Tenure** – When the new Speaker is elected by the House, the office of the Speaker Pro Tem ceases to exist.

*There are instances when members not belonging to the ruling party were elected to the office of the Speaker like GMC Balayogi and Manohar Joshi in the 12<sup>th</sup> and 13<sup>th</sup> Lok Sabha respectively.*

##### What are the major powers of the Speaker?

- **Sources of powers** – The Speaker derives powers *from three sources* like
  - The Constitution of India
  - The Rules of procedure and Conduct of Business of Lok Sabha
  - The Parliamentary Conventions (residuary powers that are unwritten or unspecified in the Rules).
- **Conducting the house** – It is *primary responsibility* of the speaker and he/ she has final power in this regard.
- It is decided by the Speaker in *consultation with the Leader of the House*.

*When the Lok Sabha is dissolved, the Speaker remains in his office till the first meeting of the new assembly when the new speaker is elected.*

- He/she adjourns the House or suspends the meeting in absence of a quorum.
- Prior permission of the Speaker is required for members to ask a question, or to discuss any matter.
- The Speaker decides the admissibility of a question raised by a member, as well as how the proceedings of the House are published.
- The Speaker has the power to expunge, in full or in part, remarks that she may consider to be unparliamentary.
- He/ she can allow a 'secret' sitting of the House at the request of the Leader of the House.

- **Final interpreter** – The speaker is the final interpreter of the provisions in the following

- The Constitution of India
- The Rules of Procedure and Conduct of Business of Lok Sabha
- The parliamentary precedents, within the House

- **Supremacy in Joint sitting** – He/ she presides over a joint sitting of the two Houses of Parliament.

- **Financial powers** – The speaker decides whether a bill is a money bill or not and the decision is final.

- **Casting Vote** – **Article 100** of the Indian Constitution, the Speaker of Lok Sabha, or any person acting as such, “shall not vote in the first instance, but shall have an exercise a casting vote in the case of any equality of votes”.

- **Appointing authority** – He/she appoints the chairman of all the parliamentary committees of the Lok Sabha and supervises their functioning.

- **Quasi-judicial powers** – The Tenth Schedule gives the Speaker of the House the power to disqualify legislators who ‘defect’ from a party.

- **Other powers** – He/ she acts as the ex-officio chairman of the Indian Parliamentary Group which is a link between the Parliament of India and the various parliaments of the world.

- The speaker can also acts as the ex-officio chairman of the conference of presiding officers of legislative bodies in the country.

### What are the challenges associated with the role of the Speaker?

- **Issue of partisanship** – Supreme Court in Kihoto Hollohan case, highlighted the instances where speakers have allegedly acted in favour of their party.
- **Misusing money bills** – There are accusation of misuse of power by introducing crucial laws as money bill to circumvent the Rajya Sabha where the ruling party does not enjoy a majority.
  - **For instance** – Amendments to the Prevention of Money Laundering Act, 2002 (PMLA), and the Foreign Contributions Regulations Act, 2010 as money bills.
- **Abusing the power of expunction** – The 17<sup>th</sup> Speaker of the Lok Sabha was accused of rank partisanship for ordering the expunction of remarks made by a MP on purported links between PM and an industrialist.
- **Ill-using the power of admitting no-confidence motion** - In 2018, the 16<sup>th</sup> Speaker of the Lok Sabha delayed the motion of no-confidence motion against the ruling government by adjuring the house several time before the admitting the motion.

Name	Tenure	Party	Ruling Coalition
Rabi Ray	Dec 1989 - July 1991	Janata Dal	National Front
Shivraj Patil	July 1991 - May 1996	Cong	Cong
PA Sangma	May 1996 - Mar 1998	Cong	United Front
GMC Balayogi*	Mar 1998 - Oct 1999 Oct 1999 - Mar 2002	TDP	NDA
Manohar Joshi	May 2002 - June 2004	Shiv Sena	NDA
Somnath Chatterjee	June 2004 - June 2009	CPI (M)	UPA
Meira Kumar	June 2009 - June 2014	Cong	UPA
Sumitra Mahajan	June 2014 - June 2019	BJP	NDA
Om Birla	June 2019 - June 2024	BJP	NDA

\*Died in office

*In Kihoto Hollohan versus Zachillhu in 1992, the Supreme Court upheld the power vested in the Speaker and said that only the final order of the Speaker will be subject to judicial review.*

*In Keisham Meghachandra Singh case 2020, the Supreme Court directed the Speakers of Assemblies and Lok Sabha to decide such disqualification pleas within 3 months except in extraordinary circumstances.*

- **Bias against opposition members** – The power the Speaker to suspend members for misconduct in the House are disproportionately used against the Opposition members.
- **Prioritising Party Interests** – Speakers have the power to restrict debates or discussions that could potentially affect the agenda of the political parties even if those discussions are crucial for the nation's well-being.
- **Bypassing committees and scrutiny** – Rushing through bills without proper committee review can lead to poorly crafted legislation that hasn't received sufficient deliberation.

### What lies ahead?

- It is extremely essential for democracy that the Speaker remain non-partisan.
- The Speaker should carry out the assigned duty to ensure detailed deliberation and legislative scrutiny of important legislation.

## 1.2 UN Security Council (UNSC)

### Why in news?

Recently, the UN General Assembly elected 5 new members to serve as non-permanent members of the UN Security Council.

### What is United Nations Security Council (UNSC)?

- **Establishment** – It was established under the *United Nations Charter* and is *one of the six main organs* of UN.
- **Membership** – It consists of *ten elected members*, and *five permanent members (P5)*.
- China, the United States, France, the United Kingdom, and the Russian Federation are the P5.
- **Purposes** – It has *four purposes* which are
  - To maintain international peace and security
  - To develop friendly relations among nations
  - To cooperate in solving international problems and in promoting respect for human right
  - To be a centre for harmonizing the actions of nations
- **Organization** – It held its *first session in 1946 in London*.
- Since its first meeting, it has taken *permanent residence at the UN Headquarters* in New York City.
- A representative of each of its members must be present at all times at UN Headquarters so that the Security Council can meet at any time as the need arises.
- **Importance** – All members of the UN agree to accept and carry out the decisions of the UNSC.
- While other organs of the UN make recommendations to member states, only the UNSC has the power to make decisions that member states are then obligated to implement under the Charter.

*United Nations (UN) is a global diplomatic and political organization dedicated to international peace and stability.*

*Denmark, Greece, Pakistan, Panama and Somalia to serve as non-permanent members on the Security Council for two-year terms from 2024 to 2026 by replacing Ecuador, Japan, Malta, Mozambique and Switzerland.*

UNSC Member States		
Permanent members	Non-Permanent Members	
	End Term 2026	End Term 2025
USA	Denmark	Algeria
UK	Greece	Guyana
Russia	Pakistan	Republic of Korea
China	Panama	Sierra Leona
France	Somalia	Slovenia

*UNSC also travelled to many cities, holding sessions in Addis Ababa, Ethiopia, in 1972, in Panama City, Panama, and in Geneva, Switzerland, in 1990.*

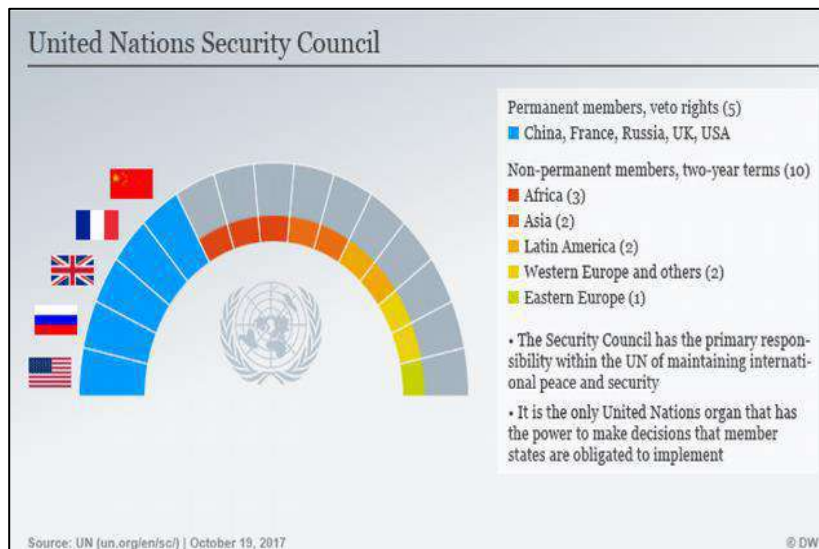
### How non-permanent seats of UNSC works?

- There are ten non-permanent members in UNSC.
- **Mode of selection** – They are *elected by the UN General Assembly (UNGA)*.

- **Method of Election** – The nominated countries require a minimum of *two-thirds majority* of all Member States present and voting in the 193-member UNGA.
- It is held in a secret ballot.
- **Tenure** – They are elected for two-year terms.
  - So every year, the UNGA elects five non-permanent members out of the total 10.

UNSC is the only U.N. body that can make **legally binding** decisions such as imposing sanctions and authorizing use of force.

- **Distribution of seats** – These 10 seats are distributed among the regions of the world.
- There is an informal understanding between the Asia and Africa groups to reserve *one seat for an Arab country*.
- The Africa and Asia Pacific group takes turns every two years to put up an Arab candidate.
- **Presidency of the Council** – It is held by each of the members in turn for one month, following the English alphabetical order of the Member States names.
- **Non-Council Member States** – More than 50 UN member States have never been Members of the UNSC.



- A State which is a Member of the UN but not of the UNSC *may participate, without a vote*, in its discussions when the Council considers that country's interests are affected.

### What are functions and powers of UNSC?

Under the United Nations Charter, the functions and powers of the UNSC are:

- To maintain *international peace and security* in accordance with the principles and purposes of the United Nations.
- To *investigate* any dispute or situation which might lead to international friction.
- To recommend methods of adjusting such disputes or the terms of settlement.
- To formulate plans for the establishment of a system to regulate armaments.
- To determine the existence of a threat to the peace or act of aggression and to recommend what action should be taken.
- To call on Members to *apply economic sanctions* and other measures not involving the use of force to prevent or stop aggression.
- To take *military action* against an aggressor.
- To *recommend the admission* of new Members.
- To exercise the *trusteeship functions* of the United Nations in "strategic areas".
- To recommend to the General Assembly the appointment of the Secretary-General and, together with the Assembly, to elect the Judges of the International Court of Justice.
- **UNSC Sanctions** – UNSC can take action to maintain or restore international peace and security under Chapter VII of the United Nations Charter.
- Sanctions measures, *under Article 41*, encompass a broad range of enforcement options that do *not involve the use of armed force*.

### India in UNSC

- India has been a non-permanent member of the UNSC for **eight times**.
  - 1950-1951, 1967-1968, 1972-1973, 1977-1978, 1984-1985, 1991-1992, 2011-2012, 2021-2022
- Unlike Africa, which has formalised a system of rotation of its three seats, the Asia Pacific grouping has often seen contests for seats.
- Back in 1975, there was a *contest between India and Pakistan*, which went into eight rounds, with Pakistan finally winning the seat.
- And in 1996, *India lost a contest to Japan*.

- Since 1966, the Security Council has *established 31 sanctions* regimes.

### What are the major challenges with reference to UNSC?

- **Not a representative body** – The basic structure of the UNSC has remained almost unchanged since its foundation more than 75 years ago.
- **Ineffective body** – With profound changes in the realities of the global community, the UNSC is being questioned in terms of its legitimacy, effectiveness, and representativeness.
- **Misuse of veto powers** – *Russia has cast more vetoes* (estimated to be 120 times or close to half of all vetoes) than the three western members of the club.
- Often P-5 countries use veto to shield their allies and target the enemies.
- For instance, China repeatedly blocks India's efforts to include confirmed Pakistani terrorists in the sanctions list.
- **Increasing global issues** – The issues have diversified over the years to include peacebuilding, conflict prevention, non-proliferation, counter-terrorism and protection of civilians.

*The G4 countries includes Brazil, Germany, India and Japan which was created in 2004.*

### What lies ahead?

- **Make it inclusive** – The G4 Countries and L69 Group has been calling for the enlargement of both permanent and non-permanent categories as well as supporting each other's bids for permanent seats on the Council.
- **Facilitate intergovernmental Negotiations (IGN)** – The UNGA has decided to facilitate the reform process through IGN framework on equitable representation and expansion of the UNSC.
- But it was dampened by the U.S., Russia and China being opposed to serious reform of the Council.
- **Implement Razali Reform Plan** – In 1997, the Razali plan was proposed by the then UNGA president Ismail Razali.
- It is a proposal to *enlarge the UNSC* from its present 15 members to 24 members.
- Under the plan, the UNSC would have 5 new permanent members without veto powers and four more non-permanent members.

*The L.69 group is a group pro-reform member states, including primarily developing countries from Africa, Latin America and the Caribbean, Asia and the Pacific. It currently has 42 countries as its members including India.*

## G.S PAPER I

### 2. HISTORY

#### 2.1 Connection Between the Harappan and the Vedic Age

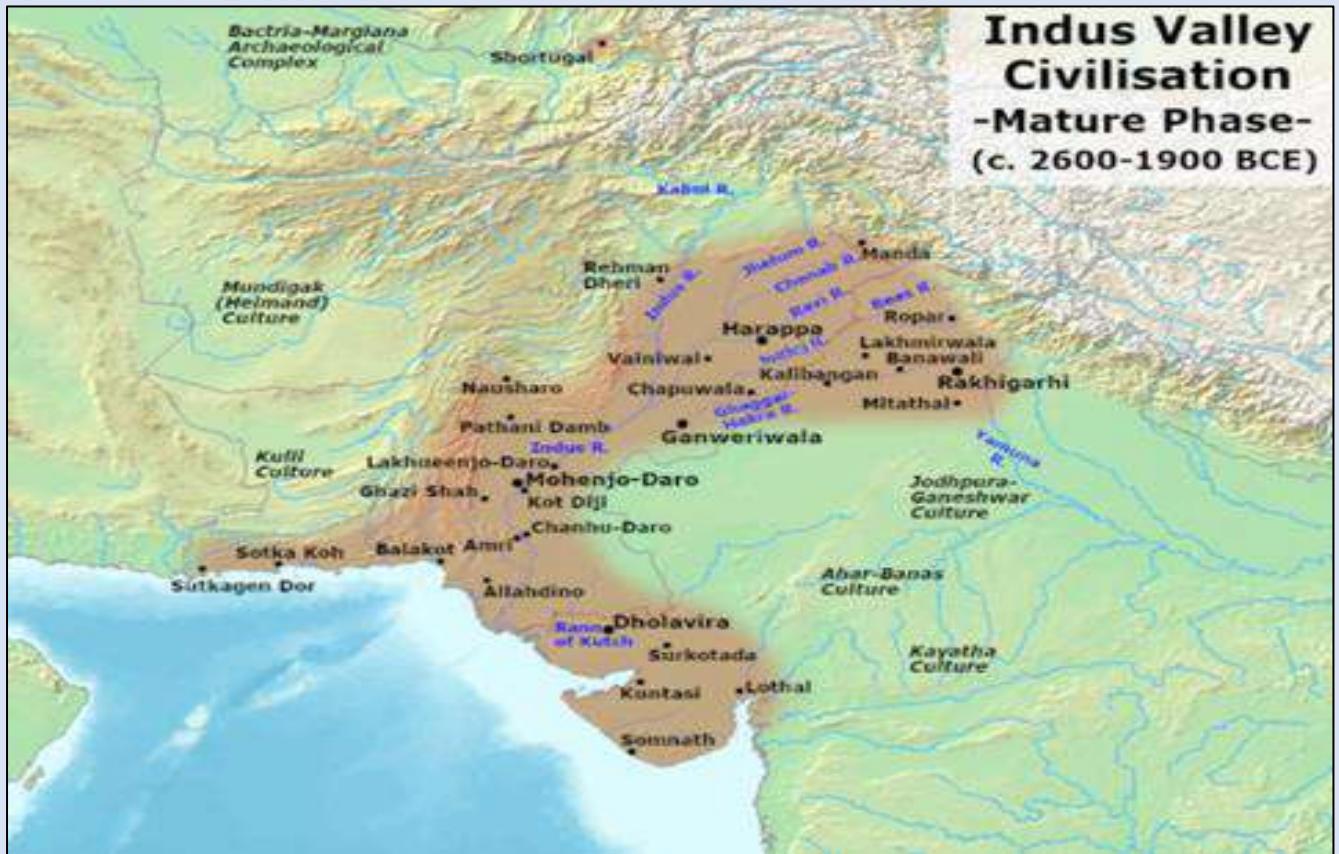
##### Why in news?

Recently, a group of archaeologists have collaborated with Sanskrit scholars to decipher the text of the Rigveda that establishes a relationship between the Harappan civilisation and the people of the Vedic age.

#### Overview of Harappaa and Vedic culture

- **Harappa culture**- It is the earliest known culture of the Indian subcontinent of the kind now called "urban" (or centred on large municipalities).
- It is the largest of the **four ancient civilizations**, which also included **Egypt, Mesopotamia, and China**.
- **Time period**- The society of the Indus River Valley has been dated from the Bronze Age, the time period from approximately 3500 to 2200 BCE.
- **Location**- In modern-day India and Pakistan, and covered an area as large as Western Europe.

- **Vedic culture-** A few centuries after the decline of the Harappan civilization, a new culture flourished in the same region and gradually spread across the Ganga-Yamuna plains.
- There were significant differences between this culture and the culture that preceded it.
- The Aryans settled on the banks of rivers Indus (Sindhu) and Saraswati (which is now nonexistent).
- They composed many hymns in honor of the gods and goddesses they worshipped. These were compiled in **four Vedas**.



**What are the key highlights of the recent research?**

- **Debate on the period of origin of the Vedas-** One set of historians says that the Vedas originated between **1,500 BC and 2,000 BC**.
- Another set of historians believe that the Vedas date farther back to **2,500 BC (4,500 years ago)**.
- This would coincide with the age of the genetic evidence from the erstwhile Harappan woman's bone samples tested at the Rakhigarhi site.
- **Harappan genes-** DNA analysis of 3,000 modern South Asians from various linguistic and religious groups revealed genetic similarities to a Harappan woman's skeleton.
- This similarity spans from the Andaman and Nicobar Islands to Ladakh, Kashmir, Afghanistan, and Bengal.
- Scholars suggest that most Indians carry Harappan genes, typically **25% to 30%**, and should be considered descendants of a common "**ancient ancestor South Asian**" due to the widespread presence of these genes across India.

**What are the similarities between Rig Vedic and Harappan Civilizations?**

Points of similarity	Rig Veda	Harappan Civilization
<b>Fire</b>	<ul style="list-style-type: none"> <li>• The site of Rakhigarhi has found evidence of ritual platforms and fire altars.</li> </ul>	<ul style="list-style-type: none"> <li>• Fire worship is mentioned in Rigvedic texts too.</li> </ul>
<b>Saraswati</b>	<ul style="list-style-type: none"> <li>• In Rigvedic text of the area where people lived, there is frequent</li> </ul>	<ul style="list-style-type: none"> <li>• A majority of Harappan settlements were along the banks of river Saraswati. Of the</li> </ul>

	description of the river Saraswati. The mention of the river is recorded at least 71 times in the Rigvedic text.	nearly 2,000 known Harappan settlements spread over the Indus basin, Saraswati, and in Gujarat, of which almost two-thirds, at least 1,200 are located along the basin of the river Saraswati.
<b>Animal bones</b>	<ul style="list-style-type: none"> <li>In the Surkotada region of Kutch, Gujarat, bones belonging to a proper domesticated horse were found.</li> </ul>	<ul style="list-style-type: none"> <li>Animal bones being that of a horse finds mention in Rigvedic texts too.</li> </ul>
<b>Food and Culture</b>	People of both cultures ate the same type of food. People from both cultures made the same kind of weapons and wore the same kind of clothing. They wore both cotton and wool. The inhabitants of both cultures were jewelers, both men and women were fond of jewelry.	
<b>Occupation</b>	Occupations of the people of both cultures were farming and animal husbandry. Cows, oxen, dogs, sheep, goats, etc. were both domesticated animals.	
<b>Religious front</b>	People from both cultures believed in religious sentiments. People of both cultures incorporated many religious features into later Hinduism. People of both cultures were materially prosperous. However, there were differences in their religious beliefs and customs.	

### What are the counter arguments against the similarities between Harappa culture and Vedic culture?

- Use of Iron-** Cities and towns first came into existence during the Harappan times, dating 4,500 to 4,600 years ago.
- They again later came into existence 2,400 years ago, by which time proofs of use of iron also emerged but Rigvedic texts do not mention the use of iron.
- Animal bones-** We don't have strong evidence to prove that the domesticated horse was present during Harappan times.
- Those historians who date the Rigveda to after 2,000 BC, believe that the animal bones were that of a wild ass.
- South Asian ancestor theory-** Contrary to this theory the NCERT textbook revisions mention that the Harappans were indigenous to India, dating back to 10,000 BC.

River Saraswati
<ul style="list-style-type: none"> <li>It is called the <b>Ghagghar-Hakra river</b> and flows <b>only during the monsoon season</b>.</li> <li>It originates from the <b>Shivaliks</b>, the foothills of the Himalayas, then flows through <b>Punjab, Haryana, and a part of Rajasthan</b> before entering what is now <b>Pakistan</b>.</li> <li>The Indian part of the river is named the <b>Ghagghar</b>, while the one in Pakistan is the <b>Hakra</b>.</li> </ul>

*South Asian ancestor theory states that there was a large scale immigration of 'Aryans' from Europe to central Asia and then to south Asia*

## 2.2 Relevance of International Yoga Day for India

### Why in News?

Recently, the 10<sup>th</sup> International Yoga Day was celebrated globally.

### What is yoga?

- Yoga is fundamentally a *spiritual practice* founded on a highly delicate science that seeks to achieve harmony between mind and body.
- Origin** – Yoga is an ancient and complex practice, *rooted in Indian philosophy*.
- The term yoga means **“coming together” or “joining”**.
- Thus, yoga entails the unification of our body, breath, mind, and awareness.
- Literary sources** – Vedas, Upanishads, Smritis, Buddhist teachings, Jainism, Panini, Epics, Puranas and so on.
- Development** - **Maharishi Patanjali** wrote complete and authoritative writings on yoga, grammar, and ayurveda to assist humanity purify their thoughts, speech, and bodies, respectively.

- The *Patanjali Yoga Sutras* are a ground-breaking literature that conveys the full discipline of yoga in simple yet profound sutra form.
- **Forms** – Although classical yoga also includes other elements, yoga is mainly practiced and emphasizes
  - Physical postures (*asanas*)
  - Breathing techniques (pranayama)
  - Meditation (dyana)
- There are many different yoga styles, ranging from gentle practices to physically demanding ones.
- **Physical health** – If we can manage our bodies, we can also control our breathing. If we can regulate our breathing, we can control our thoughts.
- **Improves mental health** - Yoga can help to awaken and enhance these skills. Peace of mind has an impact on everything. Thus, yoga aims to promote such overall improvement.

*Yoga and two practices of Chinese origin—tai chi and qigong—are sometimes called “meditative movement” practices. All three practices include both meditative elements and physical ones.*

### How has India benefited from International Yoga Day?

- **International recognition** - On December 11, 2014, the **United Nations** General Assembly declared June 21 to be the International Day of Yoga, thanks to India’s efforts.
- The 10<sup>th</sup> International Day of Yoga was celebrated in 2024 under the theme “Yoga for Self and Society.”
- **Global reach** – It has reached many nations including developed nations like USA, Canada, UK, and so on.
- Globally around 300 million people practice yoga regularly.
- **Enhance Indo-US ties** – In 2023, Indian Prime Minister inaugurated the yoga in New York on June 21.
- There are about 48,000 yoga studios in the US.
- **Spur yoga market** – Currently yoga market is valued at 107 billion USD.
- It includes yoga mat, yoga studios and mainly yoga instructors.
- It is growing by 9.4% annually.
- **Amplifies cultural diplomacy** – It has popularised Indian philosophies like *tolerance, harmony, nonviolence and honesty*.
- It is a *window to Indianism*.
- **Boost India’s global standing** – It helps India say not only as a country but *also a civilisation*.
- The *scientific and complex poses* of yoga shows the greatness of Indian practices even thousand of years ago to the world.
- **Enhance soft power diplomacy** – It has helped India *capture the minds and hearts of the entire world*.
- Most of India’s 191 embassies and consulates worldwide organised yoga sessions to commemorate the day

*The importance of **cultural diplomacy** was first realized by India’s first Prime Minister Jawaharlal Nehru. Nehru along with Abul Kalam Azad had set up the Indian Council for Cultural Relations, as early as, in 1950 to showcase India’s rich civilizational history.*

Countries	Soft Power Diplomacy
Finland	Sauna diplomacy
China	Panda
France	Food
Brazil	Football

### What lies ahead?

- Yoga tourism can be promoted further to boost India’s economy.
- India needs to develop global standard infrastructure facilities like yoga centres and connectivity projects.
- Rethink to empower soft power diplomacy globally.
- India is bidding for 2036 Olympics and pushing for inclusion of six disciplines including Yoga.

## 2.3 Nalanda University

### Why in news?

Recently, the Prime Minister of India inaugurated the new campus of Nalanda University.

## What is the history of Nalanda University?

- **Literary sources** – *Chinese pilgrim Xuanzang* (Hieuan Tsang or *Mokshadeva*) in the 7th century, traveled across India from 629–645 CE in search of Buddhist manuscripts and accurate teachings.
- He spent about *five years at Nalanda*, studying under the mahavihara's grand abbot, Silabhadra.
- **Yijing's writings** provide a very detailed account of life in Nalanda, and describes it as the “best overall monastery” in the west (of China).
  - For instance, he gave a detailed account of monks' daily bathing ritual.
- **Numismatics sources** – The earliest archaeological evidence from the ruins of Nalanda was *a coin inscribed with the name of Shakraditya*.
- **Seat of the university** – It was located *near Rajgriha city* (Rajgir) in the ancient kingdom of *Magadha (modern-day Bihar)*.
- **Establishment** – It was established in the *fifth century CE* by Emperor *Kumaragupta*.
- **Growth** – It received international acclaim and thrived under the patronage of the *Pala dynasty* during the 8th and 9th centuries.
- **Global university** – It is considered the *world's first residential university*.
- Scholars came from all over the world, including Korea, Japan, China, Mongolia, Sri Lanka, Tibet and Southeast Asia.
- **High quality education** – Hiuen-Tsang in his memoirs says that there was a rigorous *oral entrance test* for students who wished to enrol and *only about 20% qualified*.
- **Eminent mentors** – Students who gained admission were mentored by a group of scholars under the guidance of Buddhist *masters like Dharmapala and Silabhadra*.
- Mathematician and *inventor of zero (Aryabhatta)* is also believed to have studied and taught in Nalanda.
- **The library** – It is also known as '*Dharma Gunj*' or '*Mountain of Truth*,' had over nine million books, including some of the most sacred manuscripts, stored in a nine-storey building, Ratnodadhi.
- **Subjects taught** – It included Buddhist scriptures (of both Mahayana and Hinayana schools), philosophy, theology, metaphysics, logic, grammar, astronomy and medicine.
- **Recognition** – It was declared a *UNESCO World Heritage Site in 2016* emphasizing the site's immense cultural and historical importance.

*Shakraditya (known in non-Buddhist sources as Kumaragupta I, the son of Chandragupta II “Vikramaditya”) reigned between 415-55 CE.*

## Decline of Nalanda University

- **Competing monasteries** – It witnessed a gradual decline due to a number of competing monasteries such as Vikramshila and Somapura came up during the Pala reign.
- **Destruction by Bhakhtiyar Khalji** – The invasions of the likes of warlord Bhakhtiyar Khalji (late in the 12th Century) were also responsible for Nalanda's decay.
- **Tilt towards brahminism** – The Buddhism that did survive veered sharply towards more tantric and esoteric versions, which borrowed majorly from Brahmanical religion, not the Mahayana Buddhism that Nalanda propagated.
- **Socio-political changes** – In the eleventh century Islam replaced Buddhism as the greatest trading religion of Asia while the agrarian world within India was gradually lost to the Brahmins.

## How Nalanda University was revived?

- **Discovery of ruins** – The ruins were first rediscovered *in 1812 by Scottish surveyor Francis Buchanan-Hamilton*.
- Later, in *1861*, it was officially identified as the ancient university *by Sir Alexander Cunningham*.
- **Measures by India** – It was *in 2006*, while addressing a joint session of Bihar State Legislative Assembly, that the late former President, Dr. *A.P.J. Abdul Kalam, proposed the revival* of the ancient university.
- Parliament of India passed the *Nalanda University Act, 2010*.

- **Support from other nations** – Concurring ideas came simultaneously seeking the re-establishment of Nalanda from
  - The Singapore government
  - The leaders of 16-member states of the East Asia Summit (EAS) in 2007
- In total, 17 countries other than India have helped set up the University.
- Australia, Bangladesh, Bhutan, Brunei, Cambodia, China, Indonesia, Laos, Mauritius, Myanmar, New Zealand, Portugal, Singapore, South Korea, Sri Lanka, Thailand and Vietnam.
- **Revival** – In 2013, the master plan for the campus, proposed by renowned architect B.V. Doshi's Vastu Shilpa Consultants.
- It was built at an initial cost of Rs. 1,800 crore (210 million USD).
- It was reopened in 2014, after nearly 800 years, marking a significant milestone in the history of the world's oldest centres of learning.

### Features of New Nalanda University

- The new campus signifies the revival of the world's oldest universities, blending ancient wisdom with contemporary knowledge.
- It spans over 485 acres.
- It includes over 100 acres of water bodies (Kamal Sagar ponds), an on-grid solar plant, a domestic and drinking water treatment plant, and a water recycling plant as well as over 100 acres of green cover.
- The University also has a 250-capacity Yoga Center, a state-of-the-art auditorium, library, an archival centre and a fully equipped sports complex.
- It is a large carbon footprint-free Net-zero campus.
- The university's Visitor is the President of India.
- The chancellor and chairperson of the governing board is Prof. Arvind Panagariya.
- The varsity offers Post Graduate and Doctoral programmes in Buddhist studies, philosophy and comparative religions; languages and literature; ecology and environmental studies; sustainable development and environment; and, international relations and peace studies.
- At present, students from over 20 countries are enrolled in various courses.

### What is the cultural significance of the Nalanda University?

- **Buddhist learning center** – It is attracting scholars and students from across Asia, contributing to the spread of Buddhism and Buddhist philosophy.
- **Intellectual exchange** – Nalanda facilitated intellectual exchange not only in Buddhism but also in various fields such as philosophy, mathematics, medicine, astronomy, and linguistics, influencing academic developments in Asia.
- **Architectural heritage** – The site's architectural remains and artifacts provide insights into ancient Indian university life and architectural styles, reflecting the cultural and academic environment of the time.
- **Historical legacy** – As one of the world's earliest residential universities, Nalanda symbolizes India's historical commitment to higher education and its role in global intellectual history.
- **Spiritual and philosophical influence** – It played a pivotal role in shaping religious and philosophical thought, fostering debates and dialogues that enriched both Buddhist and non-Buddhist traditions.
- **Symbol of tolerance and diversity** – Nalanda's multicultural environment, with students and scholars from diverse backgrounds, underscores its role as a beacon of tolerance and pluralism in ancient India.

*Nobel prize winning economist  
Amartya Sen, who had been  
associated with the project since 2007,  
was the first Chancellor and the then  
President, Pranab Mukherjee, the first  
Visitor.*

### 5. Indian Universities before Oxford University

#### Nalanda University

- It was founded around 427 AD under Kumaragupta I of Gupta Dynasty.

	<ul style="list-style-type: none"> <li>It is a renowned centre of Buddhist studies and academics.</li> <li>It hosted <u>over 10,000 students</u> before declining in the 12<sup>th</sup> century.</li> </ul>
<b>Vallabhi University</b>	<ul style="list-style-type: none"> <li>It is located <u>in Gujarat</u> which flourished during <u>Gupta and early medieval periods</u>.</li> <li>It is renowned for its excellence in literature, philosophy and mathematics</li> </ul>
<b>Takshashila University</b>	<ul style="list-style-type: none"> <li>It is in ancient <u>Takshashila (now in Pakistan)</u>.</li> <li>It excelled in mathematics, philosophy, medicine and linguistics.</li> <li>It declined in early medieval period.</li> </ul>
<b>Nagarjuna Vidhyapeeth</b>	<ul style="list-style-type: none"> <li>It flourished in <u>7<sup>th</sup> Century</u>, named after <u>Buddhist monk Nagarjuna</u>.</li> <li>It is located in southern India.</li> <li>It has its influence in early medieval period.</li> </ul>
<b>Vikramashila University</b>	<ul style="list-style-type: none"> <li>It was founded <u>by King Dharamapala</u> in the <u>late 8<sup>th</sup> century</u>.</li> <li>It welcomed those aspiring to become Buddhist monks.</li> </ul>

### 3. GEOGRAPHY

#### 3.1 Water Crisis in Delhi

##### Why in news?

Recently, the Supreme Court directed Himachal Pradesh to release water to alleviate Delhi's water shortage during a heatwave.

##### Delhi's water source

- Water dependency-** Delhi depends on neighboring states to meet around 50 per cent of drinking water demand of its residents.
- Semi-arid zone-** The city, being located in a semi-arid zone, depends to a great extent on raw waters from the Ganga basin, Yamuna sub-basin, Indus-basin, in addition to its own internal aquifers and its groundwater resources.
- Major rivers-** Delhi gets most of its water from the Yamuna, Ravi-Beas, and Ganga rivers.
- Ganga-** Through Upper Ganga Canal in UP, Delhi receives 470 cusecs (roughly 254 MGD) of water.
- River channels-** Two channels entering Delhi from Haryana the Carrier Lined Channel (CLC) and the Delhi Sub Branch (DSB) supply Delhi with water from the Yamuna and Ravi-Beas rivers.
- Water capacity-** Delhi receives 719 cusecs of water through CLC, a lined channel meant to reduce seepage-induced water loss, and 330 cusecs through the DSB.
- Delhi Jal Board-** It takes water directly from Yamuna to try and meet demand.
  - It supplements its river- water supply with ground water around 135 MGD of which are drawn from Delhi's tube wells and ranney wells.
- Delhi is not allotted** any specific amount of water it can draw directly from the river.

##### What triggered Delhi's water shortage?

- Under performance-**The water treatment plant (WTP) in North Delhi's Wazirabad was functioning below its capacity.
  - It is the third largest of DJB's nine WTPs in terms of capacity, and primarily depends on water from the CLC and DSB.

- **High temperature-** Delhi experienced record high temperatures, and thus, a steep surge in demand for water.
- **Electricity issues-** Some water treatment plants also dealt with *short power failures*.
- **Lesser capability-** DJB is *not capable* of meeting the city's requirement of 1290 MGD during peak summers as estimated by the Economic Survey for 2023-24.
- **Rainfall deficits:** Across the states of *Himachal Pradesh, Punjab, Haryana, and Delhi* recorded large rainfall deficits according to the India Meteorological Department (IMD).
  - Scant rainfall meant that the *Yamuna simply did not have enough water for the DJB* to draw from the Wazirabad reservoir.
- **Transit losses- Water** can be lost during transit due to seepage, evaporation, or other factors. These losses contribute to a decrease in the overall availability of water for distribution.
- **Infrastructure deficit-** The infrastructure for water treatment, storage, and distribution in Delhi may face challenges such as leaks, inefficiencies, or insufficient capacity, further exacerbating water shortages during periods of high demand.
- **Inter-State dispute-** Delhi accuses Haryana of inadequate water supply, while Haryana officials attribute the shortfall to higher evaporation due to severe heat.

#### What lies ahead?

- The Delhi government has implemented measures such as *operating tube wells round the clock* and *deploying water tankers* to cater to the affected regions grappling with water scarcity.
- *A blanket ban on the use of potable water at construction sites* has been enforced to conserve this precious resource.
- *A central water tanker control room* is made and the deployment of quick response teams across all 11 Delhi Jal Board zones to tackle *water-related emergencies* effectively.
- But the *daily rush to collect water*, especially amid the ongoing heatwave, is *not a peaceful process* and *fights* among residents are common.

#### Quick Facts

##### Water allocation from Yamuna

- A water sharing agreement on the surface flow of the Yamuna among Haryana, Uttar Pradesh, Rajasthan, Himachal Pradesh and Delhi in 1994, specified that Delhi is to get 0.076 billion cubic metres of water from March to June.
- The annual allocation for Delhi is 0.724 BCM. This amounts to roughly 435 MGD.
- This allocation is regulated by the Upper Yamuna River Board, with the 1994 agreement due for revision in 2025.
- In 1996, the Supreme Court ordered that Delhi must receive sufficient water from Haryana via the Yamuna River to keep the Wazirabad and Hyderpur reservoirs full for domestic use.

## 4. SOCIAL ISSUES

### 4.1 Culture and Civilisation

#### Why in news?

Subject experts opine that there is a need for a new definition of a culture and civilisation.

#### What is the meaning of culture and civilisation?

- **Culture** – The term 'culture' is a Latin origin of the word '*cultus*', which refers to *cultivating or refining something*, in such a way that it provides admiration and respect.
- It is the way people live, reflected in the language they spoke, food they eat, clothes they wear and the Deity they follow or worship.
- It expresses the *manner in which one thinks and do things*.
- **Man-made** – *Plants and animals do not have culture*, while humans do as they are made by man.

- When we became humans from apes, we started using tools, painting on cave walls, etc. invoking the birth of a culture.
- There is no human who does not have a culture.
- **Relation with mythology** – Culture is intertwined with mythology.
- **Civilisation** – The term ‘civilization’ is derived from a Latin term ‘civis’ which indicates ‘someone who resides in a town’.
- **Concept** – It is a complex culture with hierarchy, complex organisations, and most importantly ruins of public buildings and monuments created from surplus resources.
- **Characteristics** – There are seven characteristics of a civilisation.
- It includes the presence of a government, written language, language, religion, arts, food supply, technology and social structure

As humans, we need to generate food, clothing and shelter hence, we need **resources** - In Hindu mythology, resources are symbolised by **Goddess Lakshmi.**

To fulfil our basic needs, we need **power** in the form of tools and technology. We also need rules to regulate how resources are distributed and inherited - This is represented by **Goddess Durga.**

When we have resources and security, we **express** our imagination through song and dance, art and architecture. We share our knowledge with the next generation - This represented by **Goddess Saraswati.**

### What is the relationship between a culture and civilisation?

	Culture	Civilisation
Meaning	A term used to denote the manifestation of the manner in which we think, behave and act.	It refers to the process through which a region or society, outstretches an advanced stage of human development and organization.
Basis	It is more psychological and about values	It is more material and about goods, technology, art and architecture.
Components	It is a people’s belief systems, rituals and customs	It is a complex culture with hierarchy, complex organisations, and ruins of public buildings and monuments.
Representation	Culture is what we are	Civilisation is what we have
Reflected in	Religion, art, dance, literature, customs, morals, music, philosophy, etc.	Law, administration, infrastructure, architecture, social arrangement, etc.
Expression	Higher level of inner refinement	Higher level of general development
Interdependency	Culture can grow and exist without civilization	Civilization cannot grow and exist without culture

### What can be the new definitions of culture and civilization?

- **Issues with existing definitions** – A century ago, the Europeans used the word civilisation to distinguish themselves as a culture which had a complex structure with a hierarchy, cities and monuments.
- But they saw themselves as civilised and the “other” as uncivilised.
- It assumed that only those who colonised and created class divisions have civilisation.
- It implies that tribal folks have a culture but not civilisation which seems rather insulting.
- Therefore, these old definitions need to be questioned.

- **New definition** – *Every human has a culture* that takes care of its own people, while a *civilisation engages with other cultures* through trade.
- **Transition from culture to civilisation** – Stone Age cultures turned into Bronze Age civilisations as they began trading.
- Metal and stones from mountains were exchanged with agricultural settlements in river valleys.
- Civilisation is thus measurably larger than culture, looking at the needs of not only the in-group but also of the out-group.

#### Trade system of Harappan civilisation

- They *traded with modern-day Iraq and Iran* 4,500 years ago.
- Harappans exported via sea routes cotton textiles, sesame oil, ivory, beads made of carnelian, agate and other semi-precious stones, live chickens, water buffaloes, dogs.
- In exchange, they received bitumen, incense, silver, copper, and woollen textiles.

#### Trade system of Andaman Tribe

- The Jarawa tribe in Andaman *does not trade* and continues to remain isolated, it is *not yet a civilisation*.
- But since they are humans, who use tools and have rites and rituals, they *have a culture*.

- Having goods exemplifies the saying that civilisation is what we have, while the exchange mindset stands for who we are, our culture.
- However, *not all cultures have an exchange mindset*, but the ones that have it become civilisation.
- In other words, ***all civilisations are cultures, but not all cultures are civilisations***.

#### Diversity in Indian Culture

- **Northwest India** – Around 2500 BC, in the Northwest of India, the Harappan civilisation was thriving with its *red and black pottery*.
- **Ganges Plains** – Around 1500 BC, the *painted grey ware* of Vedic culture thrived in the Gangetic Plain.
- **Deccan region** – There were communities *building megaliths and ashmounds*, and hoarding copper artefacts.
- This is culture because they are man-made.
- But since we *do not see a trading pattern*, we cannot call them a civilisation.
- **Western coast** – On the Ratnagiri coast of Maharashtra, 10,000 years old rock art was found.
- These were made by cultured people.
- But in the absence of knowledge about their trading pattern, we *cannot say whether they had a civilisation*.

## G.S. PAPER II

### 5. INDIAN POLITY

#### 5.1 Right to Promotion

##### Why in news?

Recently Supreme Court stated that the right to promotion is not a constitutional right.

##### What is the historical background of reservation?

- **Origin-** The concept of caste-based reservations was initially conceived by *William Hunter and Jyotirao Phule in 1882*.

- **Legislative framework-** The legal origin of Reservation Policy in India began with lying down of the *Government of India Act, 1919* which came during the turbulent period of *World War I*.
- **Communal Award-** The reservation system as we know it today was introduced in 1933 through the '*Communal Award*' by British Prime Minister *Ramsay Macdonald*.
- **Post-Independence-** The Constituent assembly chaired by **Dr. B.R Ambedkar** framed the reservation policy and many Articles in the Indian Constitution were dedicated for the same.
- **Right to promotion-** It is *not mentioned in part of the constitution*. There is no ruling mentioned in the constitution regarding the promotion of government employees.
- **Role of executive-** The executive (the Parliament in the case of the Centre and the State Assembly in the case of states) has the right to introduce rules and regulations regarding the promotion of employees.
  - **The central and state executives are solely responsible** for enforcing rules and regulations by the post or requirement.
- **Article 16-** Appeals regarding promotion can only be considered under **Article 16** of the Indian Constitution (equality opportunities for all in government offices) to ensure every employee is **treated equally**.

#### What are the argument for reservation?

- **Inclusion-** Reservation policies promote social inclusion by providing opportunities to individuals from marginalized communities who have historically been excluded.
- **Faith in the State-** When individuals from marginalized communities feel included and have equal opportunities, it contributes to nation-building and a stronger social fabric.
- **Positive affirmation-** Reservation is crucial to rectify historical injustices, level the playing field for disadvantaged sections, ensure representation, and uphold equality as the basis of meritocracy.
- **Provide opportunities-** It addresses systemic discrimination and provides opportunities to those historically deprived of resources.
- **Responsibility for past discrimination:** Those who argue that they were not responsible for past discrimination fail to acknowledge their privileges and the intergenerational effects of discrimination.

#### What are the arguments that are raised against Reservation?

- **Reverse discrimination-** Critics argue that reservation policies are a form of reverse discrimination, as they allocate opportunities based on factors such as caste, race, or ethnicity, rather than individual qualifications and abilities.
- **Undermining meritocracy-** Critics claim that by prioritizing quotas based on social categories, less qualified or competent individuals may gain advantages over more deserving candidates.
- **Limited improvement-** It is pointed out that despite implementing reservation policies for over 70 years, the situation of marginalized communities has not improved significantly.
- **Fragmentation-** Another concern raised is that reservation policies, instead of fostering a truly inclusive and discrimination-free society, may create further divisions among different communities.
- **Caste divisions-** Reservation perpetuates caste divisions which fails to address economic progress, erodes self-respect, hinders meritocracy, and is exploited for political gains.

#### Constitutional Provisions governing reservation

- **Part XVI** – It deals with SC and ST reservation in Central and State legislatures.
- **Article 15(4) and 16(4)-** It enable the reservation of government service seats for SCs and STs.
- Amendments like the *77th and 85th* introduced provisions for reservation in promotions.
- **Article 16(4B)-** It allows the state to fill unfilled SC/ST vacancies in the succeeding year, bypassing the 50% reservation cap.
- **Articles 330 and 332-** It provide specific representation for SCs and STs in Parliament and State Legislative Assemblies.
- Panchayats and Municipalities also have reservation provisions under **Articles 243D and 243T**.

#### Judicial scrutiny of reservation

- Landmark cases like '*State of Madras v. Smt. Champakam Dorairajan*' and '*Indra Sawhney v. Union of India*' shaped the legal landscape of reservations.
  - The latter case highlighted the exclusion of Article 15's reservation provision, leading to the introduction of Article 15(4).
  - 'Creamy layer' exclusion, restrictions on reservation in promotions, and the 50% cap were established.
  - Subsequent amendments added Article 16(4A) to reserve promotion seats for SC and ST communities underrepresented in public employment.
- The '*M. Nagaraj v. Union Of India*' case set three constitutional requirements for such reservations, including the preservation of administrative efficiency.

### What should be done?

- **Merit-cum-seniority**- The Supreme Court stated that the promotion of employees is done based on experience because it is expected that an employee with more experience is better equipped with the techniques of the work.
- **Nepotism**- Merit cum seniority system also helps in curbing the issue of nepotism in the workplace.
- **Awareness generation**- Grassroots-level education reforms, awareness campaigns and radical solutions like excluding the entire creamy layer from reservation could be considered.
- **Calibrated approach**- Reservation is necessary for addressing historical injustices but should be carefully balanced to avoid harming societal cohesion.
- **Strong political will**- It is essential to find an equilibrium that promotes justice for the marginalized, equity for all, and administrative efficiency.
- **Meritocracy**- It should be encouraged through financial aid to the underprivileged, rather than lowering entry barriers.
- **Equality**- Reservations should evolve to meet the evolving needs of Indian society while maintaining the principles of fairness and equality.

## 5.2 Cabinet Committees

### Why in news?

Recently, with the allocation of portfolios, Cabinet Committee on Security (CCS) and other important committees such as CCEA (Cabinet committee on economic affairs) and CCPA (Cabinet committee on political affairs) are in the news.

### What is a Cabinet Committee?

- **About**- It is an essential part of the governance structure, designed to streamline decision-making processes.
- **Specialized committees**- It allows for the formation of specialized committees that focus on particular areas of political and economic significance, ensuring that decisions are made efficiently and with proper coordination.
- **Size of the committees**- It typically ranges from 3 to 8 members, with the Prime Minister or a cabinet minister often serving as the chairperson.
- **Types**-
  - Permanent committees- Political Affairs Committee, Economic Affairs Committee etc., formed on permanent basis.
  - Ad-hoc committees- It is formed to address specific issues.
- **Legal framework**- The executive operates under the Government of India Transaction of Business Rules, 1961. This mandates that the minister-in-charge of a department is responsible for disposing of all business allotted to that department.
- **Inter-Departmental concurrence**- For subjects involving more than one department, decisions require concurrence among the concerned departments.
- **Cabinet authority**- If concurrence is not achieved, decisions must be made by or under the authority of the Cabinet.

- **Article 77(3)**- The President of India shall make rules for the convenient transaction of government business and the allocation of such business among ministers.

### What are the functions of cabinet committee?

- **Need**- The primary role of these committees is to handle specific fields requiring in-depth study, thereby alleviating the cabinet's workload.
- **Workload reduction**- They are institutional arrangements designed to reduce the workload of the full Cabinet by handling specific areas of governance.
- **Extra-Constitutional**- These committees are *not mentioned in the Constitution of India*, making them extra-constitutional in nature.
- **Flexibility**- Committees provide a platform for ministers from different departments to collaborate, ensuring coordinated action on critical economic and political issues.
- **Consensus building**- The flexible nature of committees allows for detailed discussions on particular issues to reach a consensus.
- **Decision-making**- Many matters are resolved at the committee level, preventing them from escalating to the full cabinet, thereby facilitating quicker decisions.
- **Time efficient**- The cabinet often accepts the decisions made by its committees, these enables speedy decision making.

### What are the key cabinet committees?

- **Cabinet Committee on Appointments** - This panel makes appointments to posts of three service chiefs, Director General of Military Operations, chiefs of all Air and Army Commands. It also makes appointment to various posts.
- **Cabinet Committee on Accommodation** - It determines the guidelines or rules with regard to the allotment of government accommodation, takes a call on the allotment of government accommodation to non-eligible persons and organisations, and decides the rent to be charged from them.
- **Cabinet Committee on Economic Affairs** - This panel is supposed to review economic trends, problems and prospects with the objective to evolve a consistent and integrated economic policy.
- **Cabinet Committee on Parliamentary Affairs** - This committee draws the schedule for Parliament sessions and monitors the progress of government business in Parliament.
- **Cabinet Committee on Political Affairs** - It addresses problems related to Centre-state relations and examines economic and political issues that require a wider perspective but have no internal or external security implications.
- **Cabinet Committee on Security** - It deals with issues relating to law and order and internal security and also deals with policy matters concerning foreign affairs with internal or external security implications.
- **Cabinet Committee on Investment** - It will identify key projects (investments of Rs 1000 crore or more or any other critical projects) required to be implemented on a time-bound basis.
- **Cabinet Committee on Employment and Skill Development** - The objective is increasing the employability of the workforce for effectively meeting the emerging requirements of the economy.
- The committees on investment and employment were innovations introduced in 2019.
- All committees except the **Cabinet Committee on Accommodation** and **Cabinet Committee on Parliamentary Affairs** are **headed by the PM**.

### Why is Cabinet Committee on Security (CCS) so important?

- **Members**- With the Prime Minister helming it, the CCS has the ministers for **Finance, Defence, Home Affairs and External Affairs** as its members.
- **Functions**-
  - It is responsible for debates, discussions and appointments of/ in the **national security bodies**.
  - Major decisions with respect to the significant appointments, issues of **national security, defence expenditure of India** are taken by CCS.
  - Besides dealing with defence related issues, the CCS also brainstorms on **issues relating to law and order and internal security**, and policy matters concerning **foreign affairs on security-related issues**.

- It also considers matters relating to **atomic energy**.

### 5.3 Flaws in Indian Judicial system

#### Why in news?

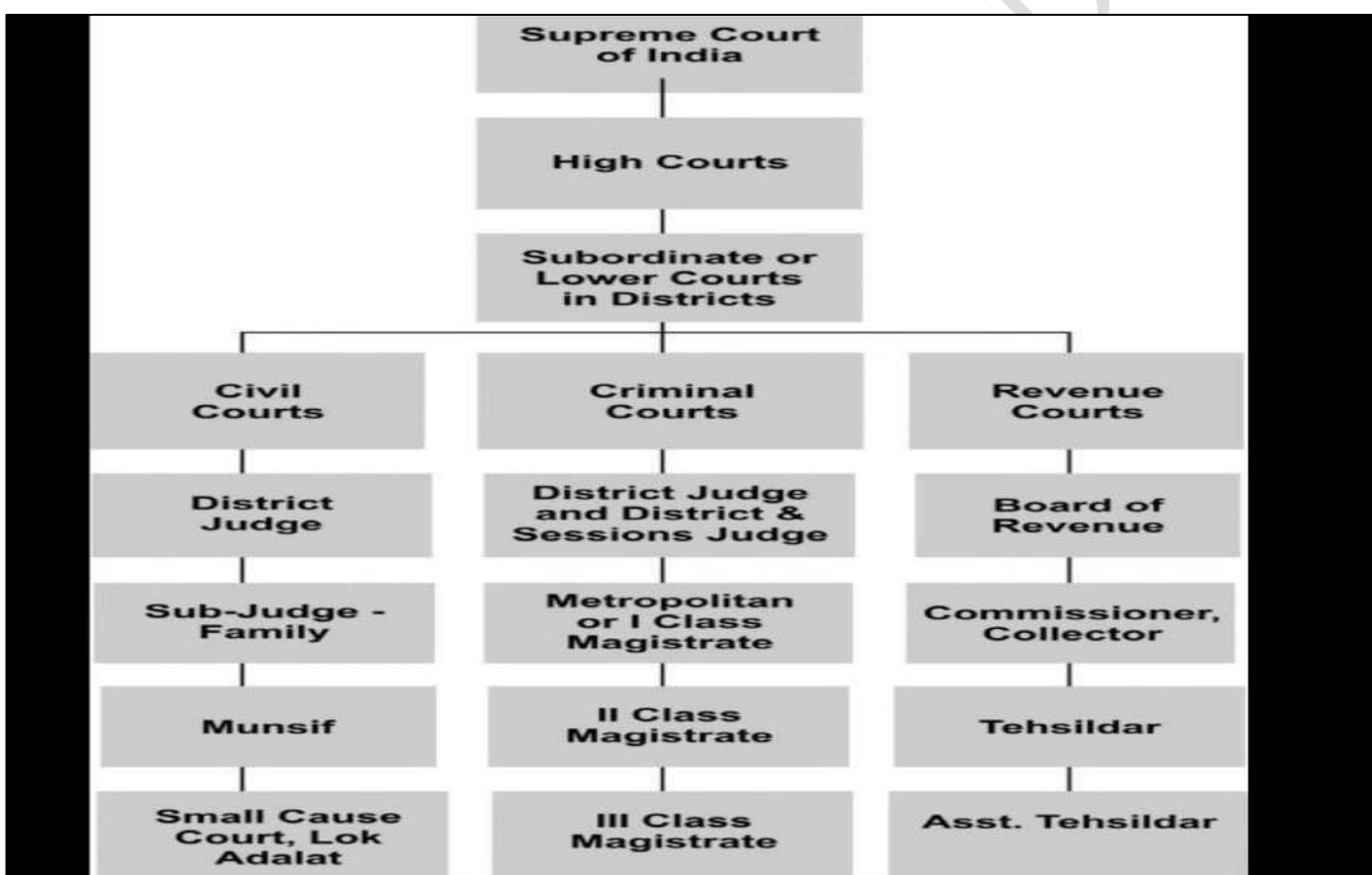
Recently, a district court in Uttar Pradesh's Bareilly sentenced a woman to jail along with a fine for filing a false case of rape against a man.

#### Write about Judicial System in India?

- The structure of the Indian judiciary is *provided by the Constitution of India*.
- **Features** – It *adheres to the “common law system”* of legal jurisdiction.
- A common law is the body of law created by judges and it controls subsequent judgments.
- **Separation of powers** – Indian judicial system is *independent from legislative and executive bodies* in India.

**Article 50** of the Indian Constitution states that the state must take the necessary steps to separate the judiciary from the executive in the public services of the state.

- **Hierarchy** – There are various levels of judicial bodies in India.



- **The Supreme Court** – It has been set up under *Part V* with **Article 124-147** of the Indian Constitution.
- It includes one *Chief Justice and 30 Judges*, the determination of whom is done through the collegiums framework.
- **The High Courts** – There are *24 High Courts* arranged in various states and association domains.
- An applicant can engage a High Court according to **article 226** of the Constitution for protecting fundamental rights.
- **Significance of Indian Judiciary** – It serves as a *watchdog of the Indian Constitution* and defends fundamental rights.

#### What are the issues with the Indian judicial system?

- **Judicial vacancies** – According to a report of 2015, there were *close to 400 vacancies* for the post of judges in the 24 High Courts of the country.
- **Delayed justice** – The [criminal cases](#) in India would take *more than 30 years to resolve* and civil cases would never be resolved at the current rate of disposition.
  - The country's longest-running legal dispute, a bank liquidation case was settled in 2023 *after 72 years*.
- **Lack of inclusion** – There is *only 1 woman judge in the Supreme Court* against 27 male judges.
- **The pendency of cases** – *More than 50 million cases* are pending across the country, according to the National Judicial Data Grid.
  - About four lakhs of the cases are in the High court, 65,000 in the Supreme Court.
- At the current pace, it would take *more than 300 years* to clear India's docket.
- **Corruption** – There is *no provision for registering an FIR against a judge* who has taken bribe without taking the permission of the Chief Justice of India.
  - In 2011, **Soumitra Sen**, became the first judge in the India (Calcutta HC) to be impeached by the Rajya Sabha alleged for misappropriation of funds.
- **Lack of transparency** – The *Right to Information Act does not apply* to the Judiciary.
- The collegium system is not transparent in the selection process.
- **Higher number of under trials** – The Indian jails are full of people under trials.
  - About *77% of prisoners in India* are awaiting trial, compared with one in three worldwide.
- **Lack of interaction with public** – The law officer and makers must be close to the public and seek their opinion on a particular law or judgments.

India has one of the world's lowest ratios of judges to population, with just 21 per million people, compared with about 150 in the United States

In **Anil Rai v. State of Bihar (2001) case**, the courts have observed in the case of that delay in reasoned judgement by the courts amounts to a violation of the Right to Life as guaranteed under Article 21 of the Constitution.

### What lies ahead?

- **Switching to the hybrid mode** – Here, one party can appear through the way of video conferencing and the other party can appear in the physical courts.
- This can give confidence to victim in reporting the crimes.
- **Increasing the strength of judges** – Appointing more competent and skillful judges.
- **Strengthening the disposal of the tribunals** – It shall be done by having *systematic case hearings, time-fixation* of the cases to be heard, providing requisite edifice, and assisting and monitoring their case-load.
- **Establishing fast track courts** – In all districts, to give speedy trials and to prevent the aggrieved party from being harassed till the time the final decision is delivered.
- **Bringing transparency in the appointments** – The entire process should be *open and accessible* for the general public to scrutinize.
- **Implementing national litigation policy** – While it has been drafted in 2010, it is yet to be implemented.
- This might reduce the amount of government lawsuits and reduce the pendency of cases in the courts.
  - Indian government is the country's biggest litigant, accounting for nearly 50% of pending cases.
- **Modernising the courts with technology** – Digital initiatives like *e-courts* should be encouraged.



- **Alternatives to long court vacations** – To find the possibility of alternatives like flexi-time for lawyers and judges.
  - The new Supreme Court Rules states that summer vacation shall *not exceed seven weeks* to be in line with suggestions in the *Malimath Committee Report (2003)*.

## 5.4 Parliamentary Oath

### Why in news?

The 18th Lok Sabha's first session started recently and the newly elected members took their oath as MPs, as required by the Constitution, before the House begins its legislative work.

### What is a Parliamentary oath?

- It is the *oath taken by the elected representatives to the parliament.*
- **Need** – Before the House can begin its *legislative functioning*, the newly elected members will have to take the oath of Members of Parliament (MP), which is provided in the Constitution.
- **Constitutional provision** – The *third schedule* contains the text of the parliamentary oath.
- **Oath** – It reads, “I, A.B., having been elected (or nominated) a member of the Council of States (or the House of the People) do *swear in the name of God / solemnly affirm* that I will bear true faith and allegiance to the Constitution of India as by law established, that I will *uphold the sovereignty and integrity of India* and that I will faithfully discharge the duty upon which I am about to enter.”
- **Article 99** states that an MP has to take her seat in the House by making and subscribing to an oath or affirmation prescribed in the Constitution to debate and vote in the parliament.
- **Exception** – An individual can become a *minister* without being elected to Parliament.
- They have six months to secure a seat in either Lok Sabha or Rajya Sabha.
- During this time, they *can participate but not vote* in House proceedings before taking oath.
- **Penalty** – *Article 104 of the Constitution* also specifies a financial penalty (the only one in the document) of *Rs 500* if a person participates or votes in House proceedings without taking an oath.

*The Third Schedule of the Indian Constitution outlines the forms of oaths and affirmations for various constitutional positions, including the President, Ministers, Judges, and Members of Parliament and State Legislatures.*

### How has the oath evolved over years?

- **Initial draft Constitution** – It did not invoke God in any oaths.
- It was prepared by the drafting committee, chaired by Dr B R Ambedkar.
- **Invocation of god** – During the discussion of President's oath in Constituent assembly, members like K T Shah and Mahavir Tyagi moved amendments to add God to the oath.
- While there was also disagreement on adding God to the oaths, it was *accepted in the final draft.*
- **Recent amendments** – The last change in the oath was the *Constitution (Sixteenth Amendment) Act 1963*, which added that the oath-takers would *uphold India's sovereignty and integrity.*
- The amendment was made on the recommendations of the *National Integration Council.*
- **Oath taking for prisoners** – The Constitution specifies that if an MP does not attend Parliament for *60 days*, their seat can be declared vacant.
- *Courts have used this ground to allow MPs in jail* to take an oath in Parliament.

### How do MPs take the oath?

#### Tenure of Member of Parliament

- The five-year term of a Lok Sabha MP begins when the Election Commission of India (ECI) declares the results according to Section 73 of the Representation of the People Act, 1951.

- Salary and allowances - From that day onward, MPs are eligible for certain rights as elected representatives like they start receiving their salary and allowances.
- But they can participate in proceeding only after taking an oath or affirmation in the house of parliament.

• **Authority** – By convention, the MP who has served the maximum terms is appointed pro tem Speaker for the first two days when oath is administered to all newly elected MPs.

- But in 18<sup>th</sup> Lok Sabha, it is not followed.

• The President has entrusted him with the duties of the Speaker (*pro tem*) under Article 95(1) of the Constitution till the election of the new Speaker.

• The MPs take oath or affirmation in the presence of pro-tem speaker.

• **Prerequisite** – Before being called upon to take the oath or affirmation, MPs **must submit their election certificate** to the Lok Sabha staff.

• Parliament added this safeguard after an incident in 1957, in which a mentally unsound individual posed as an MP and took the oath on the floor of the House.

• MPs must use the name mentioned in their election certificate and adhere to the text of the oath.

- In 2019, when a Lok Sabha MP added a suffix to her name while reading the oath, the presiding officer ruled that only the name on the election certificate would go on record.

• **Multilingualism in oath taking** – After the verification, MPs can subscribe to the oath or affirmation **in English or any of the 22 languages** specified in the Constitution.

• Roughly half the MPs take their oath in Hindi or English.

• In the last two Lok Sabhas, Sanskrit has also been a popular language in which MPs have taken oaths.

• **Oath and affirmation**

MULTILINGUALISM & OATH (number of MPs)				
Language	2019	2014	2009	2004
Hindi	212	202	234	220
English	54	115	100	60
Sanskrit	44	39	10	23
Tamil	39	7	40	38
Marathi	36	38	23	27
Kannada	26	26	26	21
Telugu	24	13	23	29
Bengali	21	22	24	36
Oriya	16	15	12	15
Gujarati	15	23	13	11
Punjabi	12	10	13	12
Assamese	8	7	7	8
Urdu	5	3	5	9
Malayalam	4	6	5	14
Kashmiri	3	1	0	1
Maithili	3	5	2	1
Nepali	2	0	0	3
Dogri	2	0	2	2
Santhali	2	2	0	5
Sindhi	1	0	0	1
Manipuri	1	1	1	1
Bodo	0	0	0	1
Konkani	0	1	0	0

Oath	Affirmation
MP swore in the name of God.	MP affirm their allegiance to the constitution.
In 17 <sup>th</sup> Lok Sabha, 87% of MPs swore an oath.	In 17 <sup>th</sup> Lok Sabha, 13% of MPs affirmed their allegiance to the Constitution.

## 6. GOVERNMENT POLICIES AND INTERVENTIONS

### 6.1 AMRUT Scheme

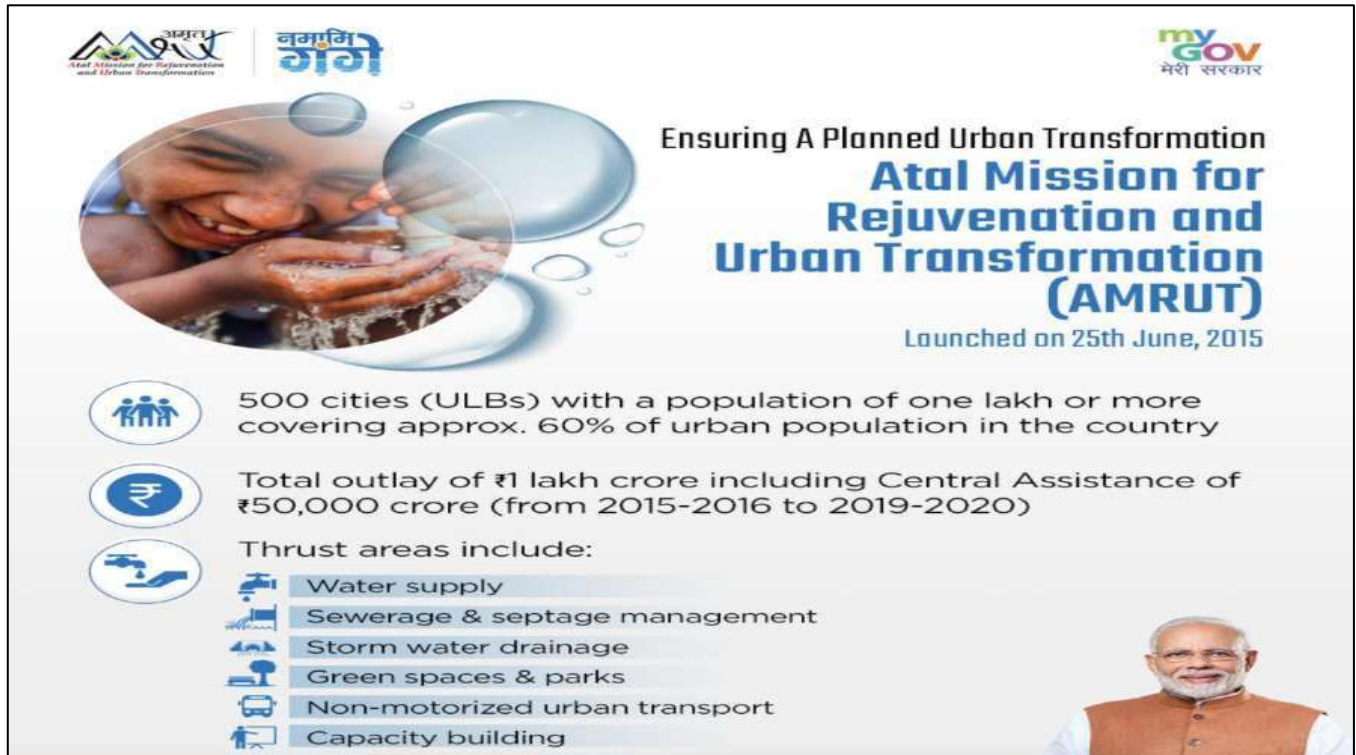
#### Why in news?

AMRUT scheme recently made news due to challenges in improving infrastructure related to water supply, mobility, and pollution.

#### What is AMRUT scheme?

- **Ministry-** Ministry of Housing and Urban Affairs.
- **Launch year-** 2015, AMRUT 2.0 is launched in 2021.
  - It is a revamped version of the earlier similar scheme, Jawaharlal Nehru National Urban Renewal Mission (JNNURM).

- **Coverage-** The mission was drawn to **cover 500 cities and towns** with a **population of over 1 lakh** with notified municipalities.
- **Purpose of the mission-**
  - Ensure that every household has access to a tap with assured supply of water and a sewerage connection.
  - Increase the value of cities by developing greenery and well-maintained open spaces such as parks.
  - Reduce pollution by switching to public transport or constructing facilities for non-motorised transport.



The poster for the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) features a central image of a smiling child washing their hands. The text on the poster includes: 'Ensuring A Planned Urban Transformation Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Launched on 25th June, 2015'. It lists key statistics: 500 cities (ULBs) with a population of one lakh or more covering approx. 60% of urban population in the country; Total outlay of ₹1 lakh crore including Central Assistance of ₹50,000 crore (from 2015-2016 to 2019-2020). Thrust areas include: Water supply, Sewerage & septage management, Storm water drainage, Green spaces & parks, Non-motorized urban transport, and Capacity building. A portrait of Prime Minister Narendra Modi is shown in the bottom right corner.

- **Water supply system-** Ensuring that every household has access to a tap with assured water supply.
- **Sewerage-** Providing sewerage connections to households.
- **Storm water drainage-** Developing robust storm water drainage systems.
- **Urban transport-** Focusing on public transport and non-motorized transport facilities (e.g., walking and cycling).
- **Green space and parks-** Enhancing amenity value by creating well-maintained open spaces and parks.
- **Capacity building-** Encouraging reforms to improve financial health, transparency, and citizen services in urban local bodies.
- **Fund allocation-** INR 50,000 crore for five years from FY 2015-16 to FY 2019-20.

*Around 36% of India's population is living in cities and by 2047 it will be more than 50%.*

### AMRUT 2.0

- **Aim-** To make cities 'water secure' and providing functional water tap connections to all households in all statutory towns.
- It is a step towards AatmaNirbhar Bharat, this Mission will be run as people's program i.e. Jan Aandolan.
- **Target-** Providing 100% sewage management in 500 AMRUT cities.
- **Community participation-** The Mission will co-opt women and youth for concurrent feedbacks about its progress.
- **Paperless mission-** It will be monitored on robust technology based monitoring and evaluation platform.

**What are the major challenges faced by the government to implement AMRUT scheme?**

- **Death-** It is estimated that about 2,00,000 people die every year due to inadequate water, sanitation and hygiene.
- **Structural issues-** AMRUT was designed for cities mainly driven by private interests and lacking organic participation from elected city governments.
- **Monopoly-** The project was owned by bureaucrats, parastatals, and large technology-based companies. Peoples' representatives are completely missing, in violation of the 74th constitutional amendment.
- **Environmental damage-** With big private players driving development, urban planning is sidelined, this leads to lost water bodies, disrupted stormwater flow, and poor drainage.
- **Disease burden-** The disease burden due to unsafe water and sanitation is considerably higher in India than in neighboring countries like China.
- **Reservoir capacity-** Reservoirs critical for drinking and irrigation water are often underfilled, with major cities facing groundwater depletion.
- **Urban infrastructure gaps-** 31% of urban households lack piped water, and 67.3% lack piped sewerage systems, with water supply far below the required levels.
- **Untreated wastewater increases disease risk:** the central government monitors 150 key reservoirs, crucial for drinking, irrigation, and hydroelectricity. Currently, they are only at 40% capacity.
- **Water crisis in India-** A NITI Aayog report warns that 21 major cities in India will soon deplete their groundwater, leaving 40% of the population without drinking water by 2030.
- **Degraded air quality-** Air quality in AMRUT cities and in other large urban settlements continue to worsen.
- **NCAP-** A National Clean Air Programme was launched by the central government in 2019, as AMRUT 2.0 focused only on water and sewerage and because the air quality concerns of AMRUT 1.0 were far from addressed.

*The average water supply per person is only 69.25 liters/day, far below the required 135 liters.*

#### What lies ahead?

- The scheme needs nature based solutions and a comprehensive methodology with a people centric approach and empowering local bodies.
- The need of the hour is holistic integrated urban planning that addresses the challenges in AMRUT scheme.

## 6.2 Agnipath Scheme

#### Why in news?

Recently, government's ambitious Agnipath scheme has faced opposition from political parties and armed forces veterans.

#### What is the Agnipath scheme?

- It is about recruiting personnel below officer ranks like soldiers, airmen, and sailors who are not commissioned officers to the Indian Armed Forces.
- **Announced in - 2022**, after military recruitment was paused for two years due to the Covid-19 pandemic.
- **Broad objectives** – To enhance youthful profile of Armed Forces so that they at their fighting best at all times with increased risk taking ability and to use emerging modern technologies.
- To provide abilities and qualities such as discipline, dynamism, motivation and work-skills so that the youth remains as asset.
- **Key features** – It is a pan India merit based recruitment.
- It has a tenure of four years.
- It provides opportunity to apply for enrolment in permanent cadre.
- Based on merit and organizational requirement, upto 25% of Agniveers selected through central, transparent, rigorous system after four years.
- Age limit for applicants range from 17.5 years to 23 years.
- Once selected they would go for training for six months and then will be deployed for three and a half years.

- In includes recruiting sailors, airmen, and soldiers, except the technical cadre of the medical branch.
- Women are also recruited ensuring gender equality.

### How are Agniveers compensated?

- **Composite annual package** – The 1<sup>st</sup> package is approximately Rs.4 Lacs and upgradation upto approximately Rs.6 Lacs.
- **Allowances** – Risk & hardship, ration, dress, travel allowances are provided.
- **Severance package** – 30% of the monthly emoluments to be contributed by individuals and the same amount will be contributed by the government to ‘Seva Nidhi’ fund.
- A corpus of approximately Rs.11 Lacs is given after four years of service, which is also exempted from income tax.
- **Death compensation** – Non-contributory life insurance cover of Rs. 48 Lakh and additional ex gratia of Rs. 44 Lakhs for death attributable to service.
- It also provides unserved portion upto four years including ‘Seva Nidhi’ component.
- **Disability compensation** – The compensation is based on the % of disability laid down by medical authorities.
- One time ex-gratia of Rs. 44/ 25/ 17 Lacs for 100%/ 75%/ 50% disability, respectively.

<b>AGNIPATH SCHEME FOR THE ARMED FORCES</b>				
Year	Customised Package (Monthly)	In Hand (70%)	Contribution to Agniveer Corpus Fund (30%)	Contribution to corpus fund by Gol
All figures in ₹ (Monthly Contribution)				
1st year	30,000	21,000	9,000	9,000
2nd year	33,000	23,100	9,900	9,900
3rd year	36,500	25,580	10,950	10,950
4th year	40,000	28,000	12,000	12,000
<b>Total contribution in Agniveer Corpus Fund after four years</b>			<b>₹5.02 lakh</b>	<b>₹5.02 lakh</b>
Exit After 4Year	<b>₹11.71 Lakh as Seva Nidhi Package</b> (Including, interest accumulated on the above amount as per the applicable interest rates would also be paid)			

### What benefits are envisaged to be accrued from the scheme?

- It would be a win-win situation for the Armed Forces, Nation, individuals and the society at large.
- **Nation** – It helps in national integration based on unity in diversity with equal opportunity to youth including women from all regions.
- It promotes nation building through empowered, disciplined & skilled youth with military ethos in civil society.
- **Armed Forces** – It improves battle preparedness through transformative evolution with energetic, diverse, more trainable and resilient youth suited to the changing dynamics.
- It ensures selection of the best with rigorous and transparent selection process.
- Armed Forces will be empowered with youthful profile by optimal balance of youth an experience by bringing down the average age down to 26 years from current 32 years.
- It endeavor to harness benefits of skill India by induction from Tech Institutions.
- **Individuals** – It promotes smooth integration of trained personnel into society with skill sets, certification and diplomas/ higher education/ credits.
- It provides a platform for the youth to fulfil dream of joining the Armed Forces and serve the nation.
- It will imbibe armed forces ethos, courage, camaraderie commitment and teamwork in the youth.

### What are the issues with this scheme?

- **Lack of pension** – Unlike soldiers in regular service, Agniveers do not draw pensions post-retirement.
- Only the 25% of Agniveers who get absorbed into the forces after four years will receive pensionary benefits.
- **Decrease permanency** – It will reduce the number of permanent armed forces.
- **Lack of benefits** – It creates a lesser cadre of soldiers, who work on the same tasks as those with full commission, but with lesser pay, benefits, and prospects.
- **Disparity** – It has caused significant disaffection among those who see military recruitment as a path to economic stability and upward mobility.

### What lies ahead?

- The Forces too are carrying out an **internal assessment** on the impact of the scheme, based on which they will make recommendations to the government on possible changes.
- All three services are have submitted their observations to the Department of Military Affairs.
- The government has recently indicated that it is willing to alter the scheme if required, but without compromising on the Armed Forces' youthful profile.

## 6.3 Pradhan Mantri Awas Yojana

### Why in news?

Recently, the Union cabinet approved for constructing 3 crore more rural and urban houses under the Pradhan Mantri Awas Yojana with higher assistance per beneficiary.

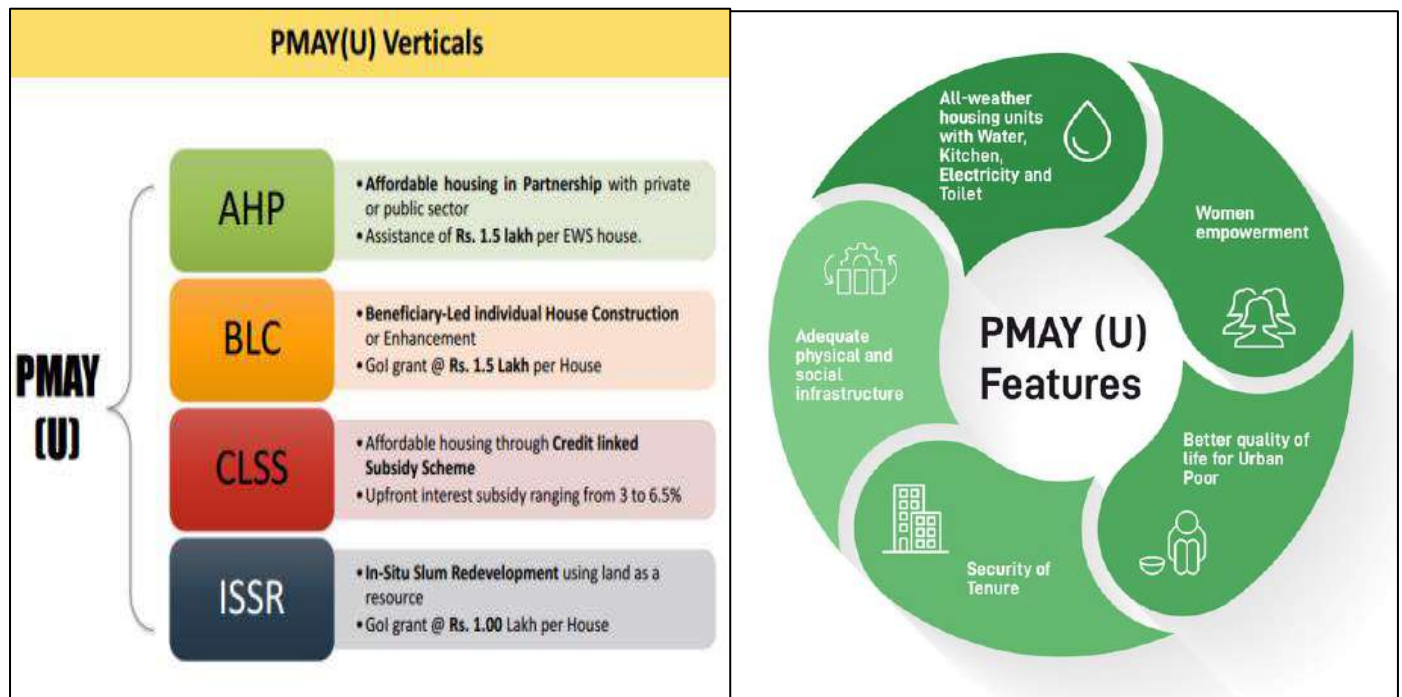
### What is Pradhan Mantri Awas Yojana?

- In pursuance to the goal of Housing for all, PM Awas Yojana was launched.
- **Types** – There are two types of schemes covering both urban and rural areas.
  - **PMAY-G** – Pradhan Mantri Awas Yojana Gramin
  - **PMAY-U** – Pradhan Mantri Awas Yojana Urban
- **Mission** – To achieve the objective of providing “Housing to All” by the year 2024.
- To construct a house for poor people who don't have their own house which is beneficial for both urban and rural areas.
- **Mode** - It is a centrally sponsored scheme, by which the Centre and states share expenses in
  - **60:40 ratio** – In plain areas
  - **90:10 ratio** – In northeastern states, two Himalayan states and the UT of Jammu and Kashmir.
  - **100% by Centre** – In case of other Union Territories, including the UT of Ladakh.
- **Eligibility** – The applicant should also be an Indian citizen who should not own any pucca house before applying.
- No member of the family should have a government job as well.
- **Targeted beneficiaries** – A total of 4.21 crore houses have been built for eligible poor families in the last 10 years.
- **Empowers women** – It provides the ownership of houses in name of female member or in joint name.
- **Empowers marginalized groups** – Preference is also given to differently abled persons, senior citizens, SCs, STs, OBCs, Minority, single women, transgender and other weaker & vulnerable sections of the society.
- **New initiatives in 2024** – Among sanctioned three crore houses, two crore will be constructed under PMAY-Gramin, while 1 crore under PMAY-Urban.
- The government have decided to increase the cost of construction of the PMAY-G house from existing Rs 1.2 lakh to Rs 1.8 lakh in the plains and Rs 1.3 lakh to Rs 2 lakh in the hilly areas.

### What is PMAY-Urban?

- **Launched in** – **2015**
- **Nodal ministry** – Ministry of Housing and Urban Affairs (MoHUA).
- **Coverage** – Over the entire urban area including Statutory Towns and Notified Planning Areas.
- **Approach** – It adopts a cafeteria approach to suit the needs of individuals based on the geographical conditions, topography, economic conditions, availability of land, infrastructure etc.
- **Basic amenities** – Facilities like toilet, water supply, electricity and kitchen are covered.
- **Major initiatives** – Robust MIS System to help all stakeholders to seamlessly manage information pertaining to physical and financial progress.

- The transfer of the assistance beneficiaries is being done through *Direct Benefit Transfer* (DBT).
- A web based monitoring system, *CLSS Awas Portal (CLAP)* integrates all stakeholders in real time environment.
- *ANGIKAAR* (A campaign for change management) focuses on adopting best practices.
- *Global Housing Technology Challenge* aims to identify and mainstream a basket of innovative construction technologies.
  - *Light House projects* under this ushered a paradigm shift in the construction technology.



### What is PMAY-Grameen?

- **Launched in** – 2016, it was previously known as the Indira Awas Yojana.
- **Nodal Ministry** – Ministry of Rural Development
- **Coverage** – It covers rural regions of India (excluding Chandigarh and Delhi).
- **Beneficiaries** – They are selected on the basis of housing deprivation parameters in the Socio-Economic Caste Census 9SECC) 2011 data and the list of beneficiaries is validated by the Gram Sabha.
- **Assistance** – It gives *financial assistance* to the people who have land and want to build houses.
- The banks also provide *home loans* at low interest rates under this scheme while the government provides *subsidies on home loans*.
- Along with financial assistance, the beneficiary is also offered *90 days of employment* under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) to construct toilets.
- **Targets** – Of the sanctioned 2.95 crore houses, 2.61 crore have been built till date.

### What are the challenges associated with PMAY?

- **Scarcity of land** – There is little to no space for further development in urban areas.
- **Land acquisition** – The tedious acquisition process makes it difficult to initiate affordable housing projects.
- **Delayed project approvals** – Lengthy and cloudy approval process has often a barrier towards curbing the cost of realty projects.
- **Higher cost** – There is issue of rising cost of raw materials and labour.
- **Age-old technologies** – It leads to have an extended gestation period and extend the construction cycle up to 2-3 years.
- **Lack of skilled workforce** – It affects not only the quality but also delays the completion of the projects.

### What lies ahead?

- Moving to the peripheral areas where land is available in plenty and at competitive prices.

- Easing land acquisition process or government acquiring land and handing over the same to developers at a higher subsidy/incentive.
- An efficient single-window clearance system enabling speedy approvals to realty projects.
- Curbing inflation, tax rebates on construction material for PMAY projects.
- Adopting globally-available mass construction technologies.
- Development of training centres across the country and to have internationally recognised certification to skilled professionals.

## 6.4 Railway Accidents

### Why in news?

A statutory inquiry is initiated by the Commissioner of Railway Safety (CRS) following the train accident involving Kanchanjunga Express.

### What is a railway disaster?

- The concept of a Disaster was not adequately and comprehensively defined on Indian Railways, till the year 2005.
- **Disaster in the Railway context** – It traditionally refers to a serious train accident, caused by human/equipment failure, which may affect normal movement of train services with loss of human life or property or both.
- **Types of railway disasters** – It now includes natural and other man-made disasters.
- **Natural Disaster** – It Includes Earthquakes, Floods, Cyclones, Land Slides, Snow Avalanches, Tsunami etc.
- **Train Accident related Disaster** – It includes
  - Collisions (with a huge number of casualties)
  - Train marooned (flash floods)
  - Derailments on a bridge over a river and coaches falling down
  - Train washed away in cyclone,
  - Derailment of a train carrying explosives or highly inflammable material
  - Tunnel collapse on a train, fire or explosion in trains, and other miscellaneous cases etc.
- **Manmade Disasters** – It covers Acts of Terrorism and Sabotage, i.e. causing deliberate loss of life and/or damage to property.
- It includes Setting a Train on fire, Railway installations etc., bomb blast at Railway Station/Train, Chemical (Terrorism) Disaster, Biological, Radiological and Nuclear Disaster.

### Indian Railways (IR)

- It is the world's *4<sup>th</sup> largest railway network* after US, China and Russia respectively.
- It is the largest system under a government in terms of passenger traffic.
- **First Indian passenger train** – It ran between Mumbai's Bori Bandar to Thane covering a distance of 34 kms.
- **Mascot** – It is called as '*Bholu*', dressed like *elephant*.
- **Longest train route** – *Dibrugarh-Kanyakumari Vivek Express* which runs between Assam and Kanyakumari that takes about 79 hours.
- **Network** – It has crossed 1,00,000 running track kms, and it is about to become fully electrified.
- **UNESCO recognition** – It has world's *four UNESCO heritage sites*.
  - Darjeeling Himalayan Railway
  - Chhatrapati Shivaji Terminus in Mumbai
  - Nilgiri Mountain Railway

- Kalka Shimla Railway

### What is the status of railway accidents in India?

- **Collisions** – They are the worst kind of accidents and invariably result in casualties.
  - In the year 2021-22 – Only two
  - In the year 2022-23 – A total of 6 collisions
  - In the year 2023-24 – As of now, 4 collisions
- Most of these collisions involved casualties and injuries to passengers.
- **National Crime Record Bureau (NCRB)** – Its 2022 report states that more than 100,000 train-related deaths were reported between 2017 and 2021.
- **UIC report 2023** – It found that in 2022, in the rail systems of 35 countries, 1,888 significant rail accidents were recorded.
- While overall rail system of 35 countries works out to 0.39 accidents per million train km, *Indian Railway's record is 0.03 per million train km in 2022.*
- Thus, despite major accidents involving collisions, the IR claims to have one of the best safety records in terms of accidents per million train km, even better than many European systems.
- **Compensation for unwanted incident** – Section 124A of the *Railways Act of 1989* defines an 'unwanted incident'.
- If an untoward incident occurs while the railways are in operation, the railway administration must *compensate the victim or the victim's dependent.*
- This compensation is regardless of whether or not the railway administration was negligent or made a mistake.

**International Union of Railways (UIC)** is the worldwide professional association representing the railway sector and promoting rail transport. It is helping Members find continuing success and opportunities.

### What are the reasons for railway accidents in India?

- **Train Operator Error** – Human error is a contributing factor in a large number of railway accidents.
- This could be due to poor training, inexperience, reckless behavior, or a combination of these.
- **Track Problems** – Track owners are responsible for keeping their tracks maintained and in good repair.
- Over time, tracks become worn and broken, which can cause train derailments and other problems.
  - NCRB – 69% of railway accidents from 2018 to 2021 were caused due to derailments.
- **Lack of Warning Signals** – This is particularly common in rural areas, where those in charge of these crossings often do not have the budget to make them safer.
- **Warning Signal Defects** – Many crossings have warning signals installed, but they have not been maintained properly or there may be a faulty part that malfunctions.
- **Outdated and ageing train coaches** – Most train coaches were developed at the *Integral Coach Factory (ICF)*, and they are known for piling up on collision.
- The updated *Linke Hoffman Busch (LHB)* coaches made of stainless steel are more effective at shock absorption and preventing derailment.
- **Overcrowding** – There is a mad rush for trains on high-density routes, particularly during weekends, major festivals and summer holidays.
- Coaches are filled to four times their capacity.
- **Staff shortages** – According to information presented in the Rajya Sabha in 2023, 3.12 lakh non-gazetted railway posts were vacant in the country.
- Any vacancies in these categories mean *stress and overwork for the existing staff.*

#### Committees for Railway Safety

- There have been 28 reports on the railways since 1993.
- Rakesh Mohan Committee (National Transport Development Policy Committee (NTPDC)), 2010
- Sam Pitroda Advisory Committee (2012)
- Kakodkar Committee (2012)
- Dinesh Trivedi Committee (2012)
- Bibek Debroy Committee (2015)

To know about Railway Safety measures, click [here](#)

### What lies ahead?

- Allow provision of low-cost equipment in locomotives to aid the driving crew.
- Strengthen preventive maintenance of signalling assets.
- Impart intensive training to staff.
- Treat every *Signal Passed at Danger (SPAD)* case as a major accident and deal with it accordingly.
- Emulate the successful examples of *Automatic Train Protection Systems* like the Mumbai suburban.
- *Safety Fund resources* should be utilised towards safety.

## 7. GOVERNANCE

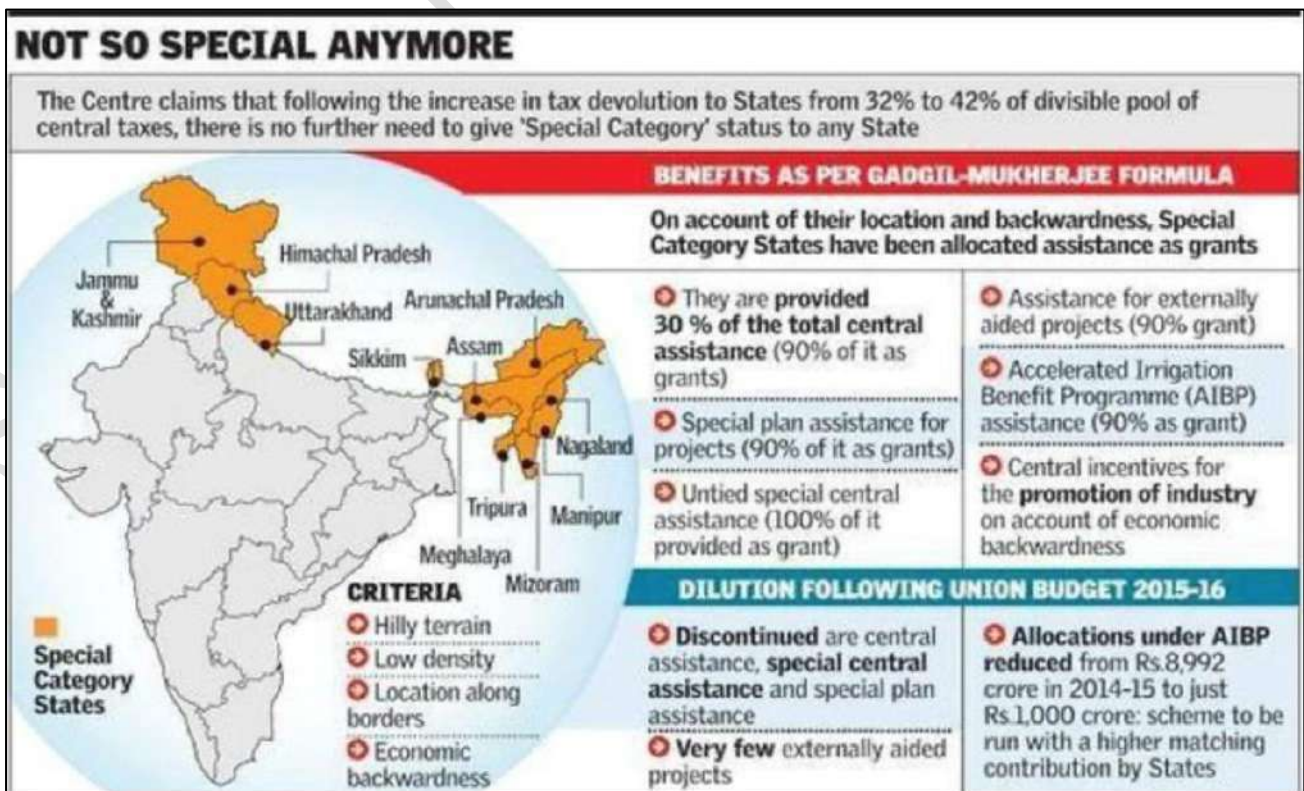
### 7.1 Special Category Status

#### Why in news?

Chief Minister, N Chandrababu Naidu has demanded the Special Category State status for Andhra Pradesh.

#### What is Special Category Status (SCS)?

- **About-** It is a classification granted by the Centre to assist the development of States that face geographical or socio-economic disadvantages.
- **Aim-** To assist certain states in their development and fast-tracking growth if they faced historical economic or geographical disadvantages.
- **Launch year-** It was introduced in 1969 on the recommendation of the 5th Finance Commission (FC).
- **Gadgil formula-** It was named after the then Deputy Chairman of the Planning Commission, Dr Gadgil Mukherjee which earmarked nearly 30% of the total central assistance for States to the SCS States.
- **Role of National Development Council-** It grants special category status, it is composed of the prime minister, union ministers, chief ministers and members of the planning commission.
- **Scrap SCS-** The system was **scrapped** on the recommendation of the **14th Finance Commission**.



**NOT SO SPECIAL ANYMORE**

The Centre claims that following the increase in tax devolution to States from 32% to 42% of divisible pool of central taxes, there is no further need to give 'Special Category' status to any State

**BENEFITS AS PER GADGIL-MUKHERJEE FORMULA**

On account of their location and backwardness, Special Category States have been allocated assistance as grants

- They are provided 30% of the total central assistance (90% of it as grants)
- Special plan assistance for projects (90% of it as grants)
- Untied special central assistance (100% of it provided as grant)
- Assistance for externally aided projects (90% grant)
- Accelerated Irrigation Benefit Programme (AIBP) assistance (90% as grant)
- Central incentives for the promotion of industry on account of economic backwardness

**CRITERIA**

- Hilly terrain
- Low density
- Location along borders
- Economic backwardness

**DILUTION FOLLOWING UNION BUDGET 2015-16**

- Discontinued are central assistance, special central assistance and special plan assistance
- Very few externally aided projects
- Allocations under AIBP reduced from Rs.8,992 crore in 2014-15 to just Rs.1,000 crore: scheme to be run with a higher matching contribution by States

- **Purpose-** It suggested that the resource gap of the states should be filled by **increasing the devolution of tax to 42% from the existing 32%.**

About	Special Category Status	Special Status
<b>Provision</b>	It is granted by the <u>National Development Council</u> , which is an administrative body of the government	The Constitution ( <u>Article 371 to 371-J</u> ) provides special status through an Act that has to be passed by 2/3 <sup>rd</sup> majority in both the houses of Parliament
<b>Powers</b>	Deals only with economic, administrative and financial aspects.	Empowers them with legislative and political rights.
<b>Applicable States</b>	<b>11 States</b> - Assam, Sikkim, Manipur, Nagaland, Himachal Pradesh, Mizoram Meghalaya, Tripura, Arunachal Pradesh, Uttarakhand and Telangana.	<b>12 States</b> - Maharashtra, Gujarat, Nagaland, Goa, Assam, Manipur, Andhra Pradesh, Arunachal Pradesh, Telangana, Sikkim, Mizoram and Karnataka.

### Why Andhra Pradesh wants Special Category Status?

- **Bifurcation-** When Andhra Pradesh was bifurcated to create Telangana in 2014 through the Andhra Pradesh Reorganisation Act, the Centre promised Special Category Status (SCS) to Andhra Pradesh to compensate for the loss of revenue and Hyderabad, the development hub.
- **Loss of revenue-** When Andhra Pradesh was divided to create Telangana, Hyderabad, a major economic hub, went to Telangana. This resulted in a significant loss of revenue for AP
- **Need of SCS-** It aimed at **more funds to be made available from the Centre** to overcome the “distressing” financial situation of the state.
- **Unjust bifurcation-** AP argues that the undivided state was **bifurcated in an unjust and inequitable manner.**
- **Telangana-** The successor state inherited nearly 59% of the population, debt, and liabilities of the original state, but only 47% of its revenues.
- **Status of Andhra Pradesh-** AP is essentially an agrarian state, with low economic buoyancy, leading to huge revenue disabilities.
- The per capita revenue in Telangana was significantly higher than in AP.

*Hyderabad accounted for a significant portion of software exports, benefiting Telangana disproportionately.*

### What is the significance of SCS?

- **Centre-State funding-** Centrally sponsored schemes is divided in the ratio of **90:10**, far more favourable than the 60:40 or 80:20 splits for the general category States.
- **Special treatment-** Preferential treatment in getting Central funds as **30% of the Centre's gross budget** also goes to special category.
- **Incentives-** These States can avail the benefit of debt-swapping and debt relief schemes.
- **Tax exemption-** States with special category status are exempted from customs duty, corporate tax, income tax and other taxes to attract investment.
- Concession is provided to excise duty for attracting industries to the State.
- **Carry forward-** If they have unspent money in a financial year, it does not lapse and gets carry forward for the next financial year.
- **Increased devolution-** Assistance to SCS states has been subsumed in an increased devolution of the divisible pool funds for all States (increased to 41% in the 15th FC from 32%).
- **High grants-in-aid-** SCS would mean **higher grants-in-aid** to the state government from the Centre.

Other States demanding SCS
<ul style="list-style-type: none"> <li>• <b>Odisha-</b> It has been demanding the Special Category Status citing instances of being the most vulnerable state to <u>natural calamities like cyclones.</u></li> <li>• <b>Bihar-</b> The demand comes in the backdrop of the findings from the “Bihar Caste-based Survey, 2022”, which revealed that nearly <u>one-third of Bihar's population continues to live in poverty.</u></li> </ul>

- **Promote investment-** SCS would **encourage investments** in specialty hospitals, five-star hotels, manufacturing industries, high-value service industries such as IT, and premier institutions of higher education and research.

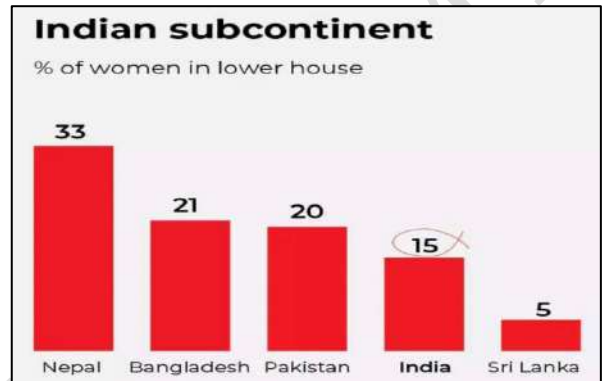
## 7.2 Women's Participation in Politics

### Why in news?

Over the years, Lok Sabha's gender composition has shown a general trend towards increasing women's representation, but progress has been slow and not linear.

### What is the current trend of women's participation in politics?

- In 1952, women made up just 4.41% of the strength of the Lower House.
- India has elected **74 women MPs to Lok Sabha this year**, four fewer than in 2019 and 52 more than in India's first elections in 1952.
- These 74 women make just 13.63% of the elected strength of the Lower House, much less than the **33% that will be reserved** for women after the next delimitation exercise.
- India was ranked **149th out of 193 nations** in terms of the percentage of women who serve in the lower house of parliament.
- In the **Global Gender Gap Report 2023**, India ranked **127th out of 146 countries**.
- **Global study-** India still lags behind several countries 46% of MPs in South Africa, 35% in the UK, and 29% in the US, are women.
- **Asia specific study-** IPU data of 2022 showed that women's representation in Nepal was 34 percent, in Bangladesh 21%, in Pakistan 20%, in Bhutan 17% and in Sri Lanka 5%.



### What are the major challenges regarding women's Participation in politics?

#### Global regulatory landscape of women in politics

- **Chile-** The committee rewriting the constitution has 50% women members.
- **Switzerland-** 42% of those elected to lower house are women.
- **Zipper method-** It is used in Rwanda where every third position in the party is set aside for women, such adjustments can be made for improved outcomes.
- **Patriarchal society-** India is a traditionally patriarchal society where women often face societal pressure to conform to traditional roles of homemaking and caregiving, which limits their participation in public life, including politics.
- **Lack of support-** Women often lack support from their families and communities to pursue political ambitions due to entrenched gender biases.
- **Under-representation-** Despite the Preamble providing for equality as one of the objectives and inclusion of fundamental rights, directives principles, **Art. 324, Art 325, Art 326** the representation of women in electoral politics is not up to the mark.
- **Societal issues:** The various reasons of low women representation in politics are patriarchal mindset with male domination of most fields, women being viewed as homemaker only, child bearing role is emphasised as the most important priority of women, absence of equal opportunities etc.
- **Lack of political will-** Political parties are reluctant to distribute tickets to female contestants as they are considered weak by the society thus reducing the chances of winning election.
- **Sarpanch pati concept-** The reservation to women in Panchayats and urban local bodies through 73rd and 74th constitutional amendments respectively have bestowed women with an opportunity to participate in politics at village and local levels though the problems such as Sarpanch pati can't be neglected.
- **Illiteracy-** In India, women have a literacy rate of 65% compared to men's 82%.

- **Employment disparities-** Women in India generally have lower levels of employment and income, which reduces their capacity to fund political campaigns and activities.
- **Slander and abuse** - This is one of the primary barriers that prevent women from running in elections that they encounter during campaigning. Lack of safety is the additional factor stated.

#### What should be done?

- The increased representation of women in politics ensures not only women empowerment but also *betterment of society at large*.
- Women's participation in decision making can result in increased efforts to *reduce infant mortality, maternal mortality, anemia, malnourishment* and various other challenges related particularly to women and children.
- The need of the hour is to bring about *behavioural change through socialization process* with significant role being played by family, school, peers.
- **128<sup>th</sup> Amendment Act, 2023** also called as Women reservation Act is rightly perceived as a powerful and indispensable tool for eliminating gender inequality and discrimination.

#### Constitutional rights of women

- **Right to equality-** The Constitution guarantees that women have the same rights as men, and prohibits discrimination on the grounds of sex. This means that women have the right to equal pay for equal work, and are entitled to the same opportunities for education, employment, and property ownership as men.
- **Right to education-** Women have the right to education and the state is directed to make efforts to provide free and compulsory education to children up to the age of 14.
- **Right to vote:** Women have the right to vote and participate in the political process, and are entitled to be represented in the government.
- **Right to property:** Women have the right to own and inherit property, and are protected against discriminatory inheritance laws.
- **Right to work-** Women have the right to work and choose their occupation, and are entitled to equal pay and working conditions as men.
- **Right to be protected against domestic violence:** Indian law provides for the protection of women from domestic violence, and the government is required to take measures to protect women from such violence.
- **Right to constitutional remedies:** Women have the right to seek remedies for any violation of their rights through the courts, and can challenge any discriminatory laws or practices.
- **Special provisions for women in the Constitution:** Article 15(3) of the Indian Constitution allows the state to make any special provisions for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and Scheduled Tribes.
- **Article 15(4)-** It allows the state to make special provisions for women and children
- **Right to Maternity Relief-** Women are entitled to Maternity Relief under the Maternity Benefit Act, of 1961.
- **Right to live with dignity-** The Constitution guarantees the right to live with dignity and freedom from exploitation to all citizens, including women.

### 7.3 Mission Karmayogi

#### Why in news?

Recently, Mission Karmayogi was in the news with reference to various achievements and positive impacts it created on the society.

#### What is Mission Karmayogi?

- **About-** It is a ***National Programme for Civil Services Capacity Building***.
- **Aim-** To *transform India's three million civil servants* into *citizen-centric*, future-ready and result-oriented karmayogis.
- **Implementation-** Ministry of Personnel, Public Grievances and Pensions.

- **Paradigm shift-** Shift from rule to role-based training and capacity building, this means training is no longer generic but tailored to the specific needs, responsibilities, and aspirations of individual officials.
- **Competency driven framework-** In alignment with the National Training Policy (2012), Mission Karmayogi adopts a competency-driven approach that encompasses attitudes, skills, and knowledge (ASK) necessary for public officials to perform their duties effectively.
- **Lifelong learning-** The use of technology plays a pivotal role in democratizing access to world-class capacity building resources, ensuring that learning is ongoing and inclusive.
- **Moving beyond silos-** This approach not only improves coordination and efficiency but also promotes a holistic and integrated approach to governance, aligning with the broader vision of Viksit Bharat by 2047.



- **Karmayogi Prarambh module-** It is an online orientation course for all new appointees in various government departments that would provide a code of conduct for government servants, including directives on workplace ethics and integrity.
- **70-20-10 mandate-**
  - 70% of learning comes from on-the-job experiences and reflections.
  - 20% is derived from interactions and working with others.
  - 10% comes from formal training programs.

### What are the major positive changes witnessed via this mission?

- **PM Gati Shakti platform:** Training provided by this mission integrated all legal and geographic layers, including forests, wildlife sanctuaries, roads and railway lines, as well as planning and execution of mega infrastructure projects.
- **Citizen centric approach-** It partnered with the Ministry of Home Affairs to train over 50,000 police personnel in Union Territories to promote a service-oriented approach.
- **Promoted tourism-** Enhanced police training has contributed to a surge in tourism, with nearly 21 million tourists visiting Kashmir in 2023, indicating improved public security.
- **iGOT Karmayogi Bharat-** Capacity Building Commission (CBC) curated an online learning module on emerging technologies like Artificial Intelligence, Internet of Things, Big Data analysis which was uploaded on the online learning portal.
- **Railway reforms-** citizen satisfaction on service provision and solution response increased by 1.5 to 1.9 times after the training.
- **Gramin Dak Sevaks-** Over 4 lakh Gramin Dak Sevaks and nearly 1 lakh village-level CSCs under the Ministry of Electronics and IT were trained in enhanced citizen service delivery.

- **Tax reforms**-CBC partnered with the Central Board of Direct Taxes to curate an online module on systemic solutions to repeated taxpayer grievances.
- **Municipal reforms**- Services, infrastructure and public goods like drinking water, sanitation, and roads delivered by municipal governments witnessed a positive change after the training courses.
- **Administrative reforms**- Indian Institute of Public Administration assessed the impact by seeking inputs on recently trained staff from their supervisors and reported increased proficiency in data analytics and e-governance tools.
- **Local government capacity building**- Pilot projects in cities like Ahmedabad, Nagpur, and Mysuru focused on enhancing the skills of municipal staff.

**MISSION KARMAYOGI:  
DIGITAL LEARNING  
FRAMEWORK (IGOT-  
KARMAYOGI PLATFORM)**  
Local Problems - Global Solution

- To provide anytime-anywhere learning to train about 2.5 crores civil servants
- Content curation to evolve into a vibrant & world class marketplace
- Supported by a robust e-learning content industry providing best-in-class content with Indian values
- To create continuous, frictionless, guided capacity building for all civil servants

### What lies ahead?

- Improved governance and efficient and competent civil services are required for achieving India's ambitions.
- To aspire *Vision 2047* dream of becoming a manufacturing hub in the global supply chain, critical exporter of value-added services and mass supplier of human skills to an ageing developed world, Mission Karmayogi is a step in a right way.
- Mission Karmayogi can make our civil services more capable of doing what is needed to achieve the 30 trillion dollars economy by 2047.

## 7.4 GST Council

### Why in news?

The 53rd Goods and Services Tax (GST) Council recently met in Delhi under the Chairpersonship of union minister for Finance.

### What is a GST Council?

- **A constitutional body** – GST was added in the constitution under *Article 279A* by **101<sup>st</sup> Constitutional Amendment Act in 2016** and came into effect in 2017.
- **Article 279A (1)** – The GST Council has to be constituted **by the President within 60 days** of the commencement of Article 279A.
- **GST Council** – It will be a *joint forum of the Centre and the States*, shall consist of the following members
  - **Chairperson** – Union Finance Minister
  - **Member** – The Union Minister of State, in-charge of Revenue of finance
  - **Other members** – The Minister In-charge of finance or taxation or any other Minister nominated by each State Government
- **GST Council Meetings** – It takes decisions through a *consensus-based approach*.
- The Constitution did not mention the number of GST Council meetings per year.
- However, the Council meets periodically to discuss and decide on important issues related to GST.
- **Quorum** – The Constitution states that *one-third of the total number* of GST Council members shall constitute the quorum.
- **Voting structure** – Every decision of the GST Council shall be taken by a *majority of not less than three-fourths* of the weighted votes of the members present and voting.
- It shall have a weightage of
  - *One-third* of the total votes cast *to the Centre*
  - *Two-thirds* of the total votes cast *to the States*
- This inclusive weightage helps in promoting the spirit of the **co-operative federalism**.

## What is the role of GST Council?

- **Role** – It oversees the implementation and regulation of the Goods and Services Tax.
- It will make recommendations to the Union and the States on important issues related to GST like
  - The goods and services that may be subjected or exempted from GST
  - Model GST Laws
  - The principles that govern Place of Supply
  - Threshold limits
  - GST rates including the floor rates with bands
  - Special rates for raising additional resources during natural calamities/disasters, special provisions for certain States, etc.
- **Recommendations are not binding** – In ***Mohit Minerals case of 2022***, Supreme Court stated that States and Centre can equally legislate on matters of GST thereby all recommendations of GST council is not binding on State legislature.
- The court said **Article 246A** of the Constitution gives both Parliament and state legislatures “simultaneous” power to legislate on GST and recommendations of the Council “are the product of a collaborative dialogue involving the Union and States.”

**Article 246A** treats State and Centre as equal. **Article 279** says state and center cannot act independent of each other.

## What are the major outcomes of the 53rd GST Council?

- **Apple farmers** – It reduced the GST on cartons from 18% to 12% to provide relief to apple farmers in Himachal Pradesh and Jammu and Kashmir.
- **Railways** – It exempted on services such as platform tickets, waiting room and cloakroom facilities in railway stations.
- **Rent and others** – The council recommended 12% taxes on items such as milk cans and solar cookers and announced some relief for students living in certain kinds of rented accommodation.
- **Trade facilitation** – It recommended trade facilitation measures such as penalty waiver on demand notices sent during the initial three years of the roll out of the GST.
- That have been issued under Section 73 of the GST Act for cases not involving fraud, suppression or misstatements.
- **Biometric based GST verification** – Council approves to rollout Pan India based biometric Aadhaar based GST Verification that will help to weed out fraudulent claims, etc.
- **Fertilizers** – GST Council sends request to reduce GST on fertiliser on rate rationalisation.
- **Machinery** - A uniform 5% IGST rate will now apply to imports of aircraft parts, components, testing equipment, tools, and tool-kits, irrespective of their HS classification.
- This measure aims to boost Maintenance, Repair, and Overhaul (MRO) activities, subject to specified conditions.

## GST in India

- **Origin** – The idea of a nationwide GST was first proposed by the Kelkar Task Force on Indirect taxes in 2000.
- **Objective** – It aims to replace the prevailing complex and fragmented tax structure with a unified system.
- It would simplify compliance, reduce tax cascading, and promote economic integration.
- **Dual structure** – Central GST (CGST) levied by the Central Government and the State GST (SGST) levied by the State Governments.
- In the case of Inter-state transactions, Integrated GST (IGST) is applicable, which is collected by the Central Government and apportioned to the respective State
- **Input tax credit** – The businesses can claim credit for the tax paid on inputs used in the production or provision of goods and services.
- **Composition scheme** – It is available for small taxpayers with a turnover below a prescribed limit (currently 1.5 crores and 75 lakhs for special category state).

- Under this scheme, businesses are required to pay a *fixed percentage of their turnover as GST* and have simplified compliance requirements.
- **Anti-Profiteering Measures** – The government established the *National Anti-Profiteering Authority* (NAA) to monitor and ensure that businesses do *not engage in unfair pricing practices* and profiteering due to the implementation of GST.

## 7.5 Global Gender Gap Index 2024

### Why in news?

The recent 2024 edition of the Global Gender Gap Index places India at 129 out of the 146 countries it surveyed.

### What is the basis of Global Gender Gap Index?

- **Launch** – This index was first introduced *in 2006*.
- It is released by the *World Economic Forum (WEF)*.
- **Components** – It is a combination of four different sub-indices namely
  - Economic participation and opportunity
  - Educational attainment
  - Health and survival
  - Political empowerment
- **Index** – It lies between 0 and 1, with *1 denoting complete parity*.
- **Objectives** – It aims to track changes in gender gaps both over time and across countries.
- This index focuses on gender gaps, that is, the focus is on the position of women relative to men (gender equality), rather than to their absolute position.
- **Coverage** – It measures the index for *146 countries* in its 2024 report.

### What are the key findings of the report?

- **Overall gender gap** – It is *closed at 68.5% in 2024*, a slight 0.1% point improvement from the previous year.
- *About 97% of the economies have closed more than 60%* of their gap, when compared to 85% in 2006.
- **Health and survival gap** – It has closed by 96%.
- **Educational attainment gap** – It has closed by 94.9%
- **Economic participation gap** – It has closed by 60.5%.
- **Political empowerment gap** – It has closed by 22.5%.
- **Gender parity** – While *no country has achieved* gender parity yet, explore the top 10 most gender-equal countries in the world in 2024.
- It will take *131 years to reach full parity* between women and men, which translates into five generations, until the year 2158, beyond the 2030 Sustainable Development Goal (SDG) target.
- **Country-wise rankings** – *Iceland maintains its number 1* rank (93.5%), and is also the only economy to have closed over 90% of its gender gap.
- It is followed by Finland, Norway, New Zealand, and Sweden in the top five.
- *Sudan was ranked last* on the index.
- **Regional rankings** – *Europe leads* the 2024 regional gender gap rankings, having closed 75% of its gap in 2024.
- The *Middle East and North Africa rank last* among all regions.

*Southern Asia ranks seventh among eight global regions, with a gender parity score of 63.7% and an improvement of 3.9% points since 2006, with Bangladesh, for the first time in the region, having achieved a double-digit rank of 99.*

### Where does India stand in gender gap?

- With a population of over 1.4 billion, India has closed 64.1% of its gender gap in 2024.
- Its overall rank of 129<sup>th</sup> is marginally *lower than 2023's (127)*, ***ahead of only the Maldives and Pakistan.***
- **Concerns** – This slight regression in rankings is mainly the result of small declines in Educational Attainment and Political Empowerment.
- **Improvement** – Economic participation and opportunity for women have seen a slight improvement.
- **Political Empowerment** – India scores within the top-10 on the head-of-state indicator (40.7%).
- India's scores for women's representation at the federal level, in ministerial positions (6.9%) and in parliament (17.2%), remain relatively low.
- **Parity in Educational Attainment** – Updated figures in Educational Attainment bring India's *parity levels slightly down* from prior scores.
- While the *shares of women are high* in primary, secondary and tertiary education enrolments, they have *only been modestly increasing*, and the *gap between men and women's literacy rate is 17.2% wide*, leaving India ranked 124<sup>th</sup> on this indicator.

Country	Rank (Domestic)	Rank (Global)
Bangladesh	1	99
Nepal	2	117
Sri Lanka	3	122
Bhutan	4	124
India	5	129
Maldives	6	132
Pakistan	7	145



- **Health and Survival Score** – 95.1% of the male-female gap has been closed which places at 142<sup>nd</sup> position in the health rankings.
- **Labour force participation** – While there is an improvement since 2021 it is very low in absolute terms, and is lower than the 2012 score.

### What lies ahead for India?

- While India's economic parity score has trended upwards for the past four editions, it would need a further 6.2% points to match its 2012 score of 46%.
- This can be achieved through bridging gender gaps in estimated
  - Earned income
  - Women's role in legislative, senior officials, and management roles Labour-force participation rate
  - Professional and technical workers

## 7.6 Importance of Whistleblowing in a Democracy

### Why in News?

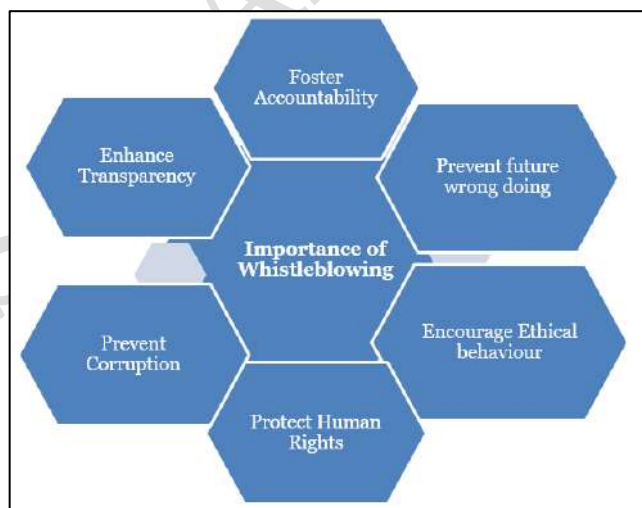
Recently, WikiLeaks founder Julian Assange on arrived in his home country Australia a free man after pleading guilty to conspiracy in a US court in a deal that ended his years in long battle.

### What is whistleblowing?

- **Whistleblowing** – It is the ***lawful disclosure of information*** a discloser reasonably believes evidences wrongdoing to an authorized recipient.
- **Whistleblower** – There are no limitations or qualifications on who can be a whistleblower.
- Any person with ***knowledge of a breach or wrongdoing may report*** it and qualify as a whistleblower.
- ***Corruption, fraud, bullying***, health and safety violation, cover-ups and discrimination are common activities highlighted by whistle blowers.
- **In India** – According to ***Whistle Blower Protection Act 2014***, a whistleblower is referred to as a ***“complainant”*** and it is defined as any person who makes a complaint relating to:
  - The committing of or an attempt to commit an offence by a public servant under the ***Prevention of Corruption Act 1988***
  - Wilful ***misuse of power*** by which demonstrable loss is caused to the government or demonstrable ***wrongful gain accrues to the public servant*** or any third party or
  - The committing of or an attempt to commit a ***criminal offence by a public servant***.
- The ***Companies Act does not define*** whistleblower.

### What is role of whistleblowing in a democracy?

- **Need** – Whistleblowers are very important for society and need to be encouraged to control wrongdoing in the system.
- **Check power tyranny and ensure accountability** – In a functioning democracy, it is absolutely crucial for power to be held to account for which there need to be whistleblowing of corruption or misuse of power.
- **Prevent corruption** – Democracy is strengthened by courageous whistleblowers speaking up for justice.
- While state secrets need to be protected for national security but this can't be a blanket cover to hide corruption and criminal wrongs.
- **Promote awareness of potential issues**



Whistle blowing Cases	About
<b>Shanmugam Manjunath case</b>	An Indian Oil Corporation Officer who was murdered after he <b><i>exposed adulterated fuel</i></b> .
<b>Lalit Mehta case</b>	An activist who exposed <b><i>corruption in the National Rural Employment Guarantee Act (NREGA) scheme</i></b> .
<b>IPS Narendra Kumar Singh case-</b>	An Indian Police Service Officer who was killed after he exposed <b><i>illegal mining in Madhya Pradesh</i></b> .
<b>Vyapam Scam</b>	It was one of the most notorious episodes in India's <b><i>educational and recruitment narrative</i></b> exposed by Anand rai in Madhya Pradesh.

- **Prevent misappropriation of assets** – It exposes unethical and improper practices relating to financial and accounting matters and saves taxpayers millions of dollars each year
- **Ensures good governance** – It is the mechanism to get the right information to the right people to counter wrongdoing and ***promote proper, effective, and efficient functioning*** of the government or company.
- **Protects human rights** – Every citizen should have a basic right to keep their own affairs private.

- In 2019 and 2021, Opposition party leaders, journalists, and activists targeted the then Indian government for using Pegasus spyware to surveil them.
- **Uphold public interest** – It serves the public interest by ensuring that the Government remains an ethical and safe workplace.

### What are the measures taken by India to protect whistleblowers?

- Protecting and enabling this “insider” class of whistleblowers is essential in defending democracy because they are the first witnesses to wrongdoing within governments or corporations.
- *Only a few states* in India have such policies.
- **Law Commission of India** – In 2001, the Law Commission of India, recommended a law to protect whistleblowers.
- LCI its 289th Report in 2024 recommends for a special legislation for protection of Trade Secrets, with exceptions pertaining to whistleblower protection, compulsory licensing and government use, and public interest.
- In the same report, it has proposed a separate legislation for Economic Espionage as well.
- **Supreme Court** – In 2004, the Supreme Court directed the Central government to make interim measures for handling whistleblower complaints until a formal law was enacted.
- This led to ‘Public Interest Disclosure and Protection of Informers Resolution’, granting the Central Vigilance Commission permission to deal with whistleblower complaints.
- **2nd ARC** – In 2007, the Second Administrative Reforms Commission also stressed the need for a dedicated whistleblower protection law.
- **Following international convention** – India committed to the UN Convention against Corruption since 2005 called for encouraging corruption reporting and protecting witnesses.
- **Statutory measures** – The Whistleblowers Protection Bill was proposed in 2011 which become a law as Whistleblowers Protection Act in 2014.
- **Right to information Act 2005** to secure information under control of public authorities, in order to promote transparency and accountability in the working of every public authority.
- **In corporate world** – Today, the Companies Act, 2013, and Securities and Exchange Board of India (SEBI regulations) mandate companies to address whistleblower complaints.

### What are current challenges in India?

- **Lack of a strong legal framework** – There is no standard framework for receiving whistleblower reports, protecting whistleblowers, and bringing about corrective actions based on whistleblower reports.
- **Non-implementation of legal measures** – The Whistle Blowers Protection Act passed through parliament in 2014 and got as far as the president’s assent, but did not come into force yet.
- **Inefficiencies with WPA, 2014** – It fails to protect whistleblowers’ identities and establishes a flawed reporting and investigative framework.
- Complainants providing false identities or anonymous complaints are not recognised.
- There is no functional enforcement mechanism and it doesn’t cover armed forces and is not applicable to the private sector.
- **Political reluctance** – The Whistle Blowers Protection (Amendment) Bill 2015 tried to revive the effort and sought to prohibit the reporting of corruption-related disclosures under 10 categories, but it got subsequently lapsed.
- **Non-inclusive measures** – The Companies Act 2013 (Companies Act), which mandates the incorporation of a whistleblower policy, but primarily only by listed companies.
- To date, there are no specific laws dealing with the protection of whistleblowers applicable to private, unlisted companies or unincorporated entities and their employees.
- **Discretion for private establishments** – Employers are free to formulate and adopt a whistleblower policy.

*In India, Satyendra Dubey was known as the country’s first whistleblower who was murdered over 20 years ago upon exposing corruption involved in the construction of India’s largest highway project at the time.*

*According to Reporters Without Borders, nearly half of the journalists killed in India since 2014 were working on stories linked to the environment*

- **Shaming whistleblowers** – Environmental activists have been called “*urban Naxals*,” a name which suggests they are *anti-national* and are detrimental to India’s economic growth.
- Some have even been arrested for *sedition*.

#### What lies ahead?

- A robust democracy needs protective laws encouraging citizens to step forward to expose malpractices in the government or in private enterprises.
- **Expanding the definition of a whistleblower** – It should include those who are exposing and fighting against the arbitrary use of power like
  - The conventional whistleblowers, or “insiders,”
  - Right to Information users
  - Human rights defenders and journalists
  - *Environmental defenders*
  - *Social audit participants*.
- **Checking the accountability** – The law must provide clear accountability for the person defined to provide the protection.
- There should be mandate swift investigation and *penalizing authorities who fail to protect a whistleblower’s identity* or provide adequate protection to victimized whistleblowers.
- **Protect RTI users** – Protection through executive orders and under the information commission.
- **Fast-tracking investigations** – Granting oversight to independent regulatory agencies in cases related to persecution of RTI users.
- **Following best practices** – Establishing *clear reporting channels* and developing a non-retaliation policy.
- Setting up an *impartial committee to investigate* reports.
- Protecting the confidentiality of whistleblowers.
- **Capacity building** – *Training employees and management* on whistleblowing and how to handle reports.

## 8. HEALTH

### 8.1 Tobacco Epidemic in India

#### Why in news?

Tobacco is the most widely recognized preventable cause of disease and death globally, posing significant health and environmental challenges.

#### Status of tobacco use in India

- In India, it is estimated that nearly 26 crore people consumed tobacco in 2016-2017, making it the second-highest tobacco-consuming country after China.
- The Global Adult Tobacco Survey (GATS) indicates that in India, of all adults, 28.6% currently consume tobacco either in smoked or smokeless form, including 42.4% of men and 14.2% of women.
- According to the World Health Organisation (WHO), India is the second-largest consumer and producer of tobacco.
- The most prevalent form of tobacco use in India is smokeless tobacco and commonly used products are khaini, gutkha, betel quid with tobacco and zarda.
- Tobacco use is recorded to be more than 40% in the North-eastern states of India, the highest being in Tripura.
- **Health risks**-It extend to the 60 lakh people employed in the tobacco industry, who are exposed to diseases from absorbing tobacco through the skin.
- It is one of the major causes of death and disease in India and accounts for nearly 1.35 million deaths every year.

### What are the steps taken by India to control tobacco use?

- **COTPA, 2003**- The Cigarettes and Other Tobacco Products Act regulates tobacco advertising, promotion and sale, it bans tobacco sales within 100 yards of educational institutions.
- **National Tobacco Control Program (NTCP), 2007**- It aims to raise awareness about tobacco harms and assist people in quitting.
- **Prohibition of Electronic Cigarette Act (PECA), 2019**-Prohibition on the sale of e-cigarettes and related products which includes Electronic Nicotine Delivery Systems (ENDS) and Heated Tobacco Products.
- **mCessation program**- It is a mobile technology based program by Ministry of Health and Family Welfare, WHO, and International Telecommunication Union that provides customized guidance via text messages to encourage tobacco users to quit.
- **Ban by FSSAI**-Food Safety and Standards Authority of India (FSSAI) banned tobacco and nicotine in food items, this resulted in ban of gutka and flavored smokeless tobacco products.
- **Tobacco taxation**- India has implemented tobacco taxes to discourage consumption.
- **Smoke free places**- Smoking is completely banned in many public places and workplaces, including healthcare facilities, educational institutions, government offices, and public transport.

*COTPA ensures effective implementation of WHO's Framework Convention on Tobacco Control.*

### What are the impacts of tobacco use in India?

- **Passive smoking**- Non-smokers, including children and pregnant women, are at risk due to exposure to secondhand smoke, leading to respiratory infections, low birth weight, sudden infant death syndrome (SIDS), and other health problems.
- **Occupational Hazards**-Those employed in the tobacco industry, especially in cultivation and processing, face health risks from absorbing nicotine through their skin, which can cause nicotine poisoning and other related illnesses.
- **Impact on health**- It is a major risk factor for many chronic diseases, including cancer, lung disease, cardiovascular disease and stroke.
- **Lack of legislative framework**- In 2020, an amendment under COTPA has aimed to make licensing mandatory for tobacco product production, supply, and distribution, but the bill was not passed.
- **Policy paralysis**- A study found no significant difference in bidi or cigarette consumption reduction between NTCP and non-NTCP districts as there were challenges like insufficient staffing, resource allocation and monitoring mechanisms.
- **Economic burden**- India incurred a loss exceeding 1.7 lakh crore rupees due to tobacco's health effects in 2017-2018.
- **Productivity loss**- Workers suffering from tobacco-related diseases are less productive, and the economic contribution of those who die prematurely is lost.
- **Tobacco taxation**- It is not regularly adjusted for inflation, and over time tobacco products are becoming increasingly affordable.
- **Tax evasion**- Illegal methods such as smuggling, illicit manufacturing affects tobacco taxation efforts.
- **Industry influence**- India's tobacco interference index has worsened, indicating industry influence in governance.
- **Soil erosion**-Tobacco cultivation is erosive and depletes soil nutrients.
- **Deforestation**- It occurs due to tobacco production in the rate of 5.4 kg of wood per 1 kg of tobacco.
- **Waste accumulation**- Tobacco production and consumption generate a substantial amount of waste, including cigarette butts, packaging, and plastic waste, contributing to environmental pollution.

### What lies ahead?

- Ensure strict enforcement of the COTPA and increase fines for violations to ensure regular monitoring and compliance checks.
- Increase the tax burden on all tobacco products (cigarettes, bidis, and smokeless tobacco) to at least 75% of the retail price, as recommended by the WHO Framework Convention on Tobacco Control (FCTC).
- There is a need to launch sustained, high-impact mass media campaigns to educate the public about the dangers of tobacco use.

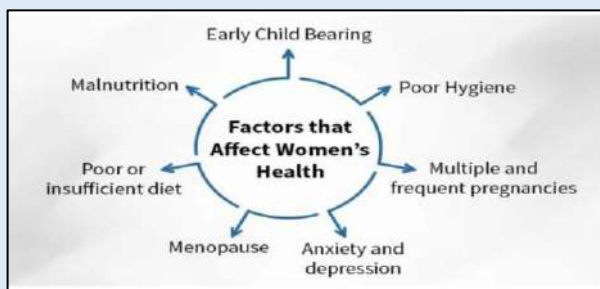
## 8.2 Women Health

### Why in news?

Recent analysis published by The Lancet reveals significant differences in disease burden and health outcomes between men and women globally.

### Status of women's health in India

- India is ranked 127th out of 146 nations in the global gender gap report 2023.
- India stood at 146th position for the health and survival sub-index.
- As per WHO data India has a maternal mortality rate of 174 deaths per 100,000 live births, which is significantly higher than many other countries in the region.
- Around 50 million women in India suffer from reproductive health problems.
- Anaemia affects around 50% of women of reproductive age in India, leading to complications during pregnancy and childbirth.



### What are the key highlights of the report?

- **Difference in disease burden-**

<b>Women</b>	More likely to suffer from lower back pain, depression, and headaches.
<b>Men</b>	Higher rates of premature death due to road accidents, cardiovascular diseases, and COVID-19.

- **Impact of Gender Norms-** The differences between men and women become apparent during adolescence, influenced by both biological and gender norms.

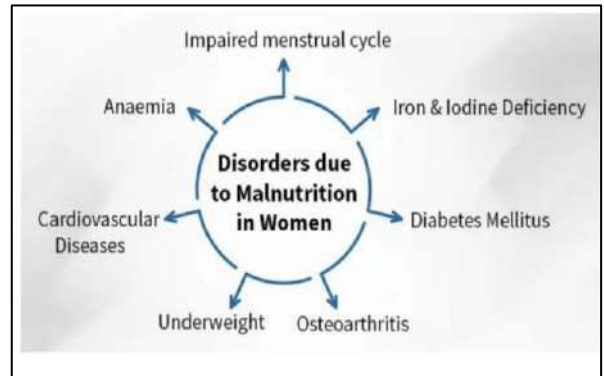
### Causes of difference in disease burden

- **Biological factors-** Hormone levels, sexual anatomy, and physical stress related to pregnancy and childbirth contribute to women's higher rates of certain conditions.
- **Societal factors-** Men may avoid seeking help for mental health issues due to stigma around masculinity.
- **Healthcare bias-** Women are more frequently diagnosed with mental disorders, which might reflect biases in healthcare systems.
- **Pain management** - Women in pain, particularly with musculoskeletal disorders like lower back pain, are often dismissed or undertreated by healthcare providers.
- **Musculoskeletal disorders-** Biological factors (e.g., fluctuating hormones, differences in skeletal shapes) and the physical stress of pregnancy and childbirth contribute to women's higher rates of musculoskeletal pain.
- **Triple burden-** Women often juggle work, household maintenance, and caregiving duties, which may limit their access to appropriate health services.
- **Stability of gender disparities-** Despite decreasing rates of certain conditions since 1990, the gender gap remains stable, particularly for conditions like lower back pain and depressive disorders.

### What are the major health issues faced by women?

- **Cancer-** Breast cancer and Cervical cancer remain the most common cancer among women in India.
- **Menstrual pain-** Menstrual cramps, which cause throbbing, agonizing pain in the lower abdomen, are the most common cause of the discomfort.
- **Reduction in bone density-** Almost 80% of Indian women suffer from bone thinning. The danger of osteoporosis, which can lead to joint pain and easily cracked bones, rises with bone density loss.
- **Mental health-** In accordance with the National Family Health Survey from 2019 to 2021, 30% of women in India experience gender-based violence, which puts a third of all Indian women at an increased risk of having anxiety and depressive disorders.

- **Dysfunctional pelvic floor-** A weaker or malfunctioning pelvic floor is a very frequent issue that several Indian women who have given birth and/or are over 40 years old deal with.
- **Tribal women-** The high incidence of breast lumps among Adivasi women of Adilabad in Telangana has created apprehension of more serious health impacts for this remote population.
- **Cardiovascular health-** Indians account for 60% of the world's heart disease burden, despite accounting for less than 20% of the world's population.
- **Suicide-** Indian women have higher rates of suicide than women in most developed countries. Women in India also have a higher rate of suicide compared to men.



### What lies ahead?

- **Data Collection-** Consistently collecting health data categorized by sex and gender is crucial for understanding and addressing health disparities.
- **Targeted health interventions-** Health interventions should consider the specific needs of men and women.
  - For example, addressing mental health more robustly and reducing biases in diagnosing and treating pain.
- **Increased Funding for Women's health-** More funding is needed for conditions disproportionately affecting women, such as mental health issues and musculoskeletal disorders.
- **Holistic approach-** Moving beyond reproductive health to address broader health issues faced by women, acknowledging their unique health challenges throughout their lives.
- **Awareness generation-** Educating healthcare providers to recognize and address biases, ensuring both men and women receive appropriate and effective care.
- **National health plans-** Proper plan and strategies to address the health needs of men throughout their lives, including interventions targeting behavioural risks such as alcohol use and smoking that typically begin at a young age.
- **Technology intervention-** Early detection of cancers, including cervical cancer, can be improved through the use of technology.

## 8.3 Health-care Costs in India

### Why in news?

Recently, seeing the dynamic landscape of Indian healthcare, cost considerations are increasingly shaping service delivery and patient care.

#### Status of health care cost in India

- India has one of the *highest medical inflation rates in Asia*, reaching 14 percent.
- Urban India accounted for **42.3%** of the total healthcare-related expenditure in this period, while the remaining **57.7%** of the expenditure came from rural India.
- Indian households spent an estimated INR 120 billion on health and healthcare-related services in 2022. *India has a large privately managed healthcare system.*
  - On average, a rural household spent INR 309 on healthcare while an urban household spent INR 460 in the month.
- *Medicines and health enhancement services* comprise a bulk of healthcare expenditure.
- People in *Uttar Pradesh (96%) and Rajasthan (93%)* are particularly likely to say that the government should be responsible for providing healthcare services.
- People in urban areas are more likely to say that public hospitals need improvement than people in rural areas (43% vs. 32%).

### What are the major challenges faced by India in healthcare costs?

- **Medical inflation-** The cost of medical services, pharmaceuticals, and medical devices is rising faster than general inflation, making healthcare increasingly unaffordable for many.
- **Technological advances-** While technology improves care, it also raises costs due to the high investment required for advanced medical equipment and procedures.
- **Regional disparity-** There is a significant disparity in healthcare access between urban and rural areas. Rural regions often lack adequate healthcare facilities, skilled professionals, and essential medicines.
- **Socioeconomic inequities-** Lower-income groups struggle to afford quality healthcare, leading to poorer health outcomes and increased financial strain.
- **Lack of quality-** Supreme Court's standardizing medical procedure rates could drastically slow the development of new treatments and technologies, especially in fields like cancer research and robotic surgery, where significant investment is crucial.
- **Limited insurance coverage-** A significant portion of the population lacks health insurance, leading to high out-of-pocket expenses for medical treatments.
- **Infrastructure gaps-** Many public healthcare facilities lack the necessary infrastructure, equipment, and staff to provide quality care.
- **Price caps-** One-size-fits-all price caps could undermine healthcare quality.
  - A Health Care Management Review study shows hospitals facing price caps report a 15% increase in patient dissatisfaction.

#### What should be done?

- **Invest in infrastructure-** The need of the hour is to invest in top-tier infrastructure and advanced technologies, seamlessly integrating telemedicine and remote care to broaden access and build patient trust.
- **Private hospitals-** Private hospitals in India, particularly those accredited by the Joint Commission International (JCI) and the National Accreditation Board for Hospitals (NABH), have emerged as hubs of innovation.
- **Enhance patient outcomes-** These institutions invest in advanced technologies and top-tier infrastructure, enhancing patient outcomes in complex procedures.
- **Value-based pricing-** This could be the ultimate solution where in payments reflect health outcomes rather than service volume.
- **Inclusivity-** Broader Internet access and improving digital literacy will empower more people to benefit from these advancements, setting the stage for India to lead globally in health-care innovation.
- **Holistic approach-** Engaging all stakeholders including private healthcare providers, is essential for crafting effective, sustainable policies.
- **Legislative reforms-** States like Rajasthan and Tamil Nadu highlight gaps in rate provisions, advocating for strong legal frameworks to address these issues.
- **Technology intervention-** It has revolutionized health care, making diagnostics faster and more accurate with artificial intelligence and improving care coordination through electronic health records.
  - Telemedicine initiatives in Karnataka have slashed hospital visits by 40%.
- **Utilize big data-** Data analytics can shed light on patient outcomes, treatment efficacy, and cost-efficiency, informing more nuanced rate-setting frameworks.
- **Implement pilot projects-** This can be done in selected districts to assess the impact of rate caps, allocate government subsidies for private hospital R&D, and establish public-private partnerships to integrate advanced technologies in public hospitals.
- **Thailand model-** Thailand's tiered system considers income and necessity, balances cost and care and could model India's diverse economy.

## 8.4 Tuberculosis in India

### Why in news?

Recently, a senior Health Ministry official said that India's progress towards rapidly reducing TB cases and deaths, aiming for elimination by 2025, has stalled.

## Tuberculosis

- **About** - Tuberculosis is a serious infectious and contagious disease that generally affects lungs.
- **Cause** - TB is caused by a bacterium known as Mycobacterium tuberculosis.
- **Transmission** – TB bacteria spread through the air from one person to another. When a person with TB disease of the lungs or throat coughs, speaks, or sings, TB bacteria can get into the air.
- **Symptoms-**



- **Treatment** - Drugs include Isoniazid (INH), Rifampicin, Pyrazinamide and Ethambutol (HRZE) in daily doses.

### What is the current status of Tuberculosis (TB)?

- India has been engaged in TB control activities for more than 50 years, yet the disease continues to be the country's severest health crisis.
- TB kills an estimated 480,000 Indians every year or over 1,400 patients every day. The country also has more than a million 'missing' TB cases annually, which are not notified.
- With an estimated 2.64 million cases in 2021, India accounts for about 25% of the world's TB burden.
- The Indian government ambitiously aimed to eliminate TB by 2025.
- The World Health Organization (WHO) reports over 10 million new cases of TB every year and India alone accounts for 27% of the global TB burden.
- The WHO TB statistics for India for 2021 give an estimated incidence figure of 2,590,000 million cases
- An estimate of 2.8 million TB cases with TB killing more than 4,00,000 occur in India every year

### What are the major challenges in eradicating TB?

- **Inefficiency**- Most of the cases remain either undiagnosed, or unaccountably and inadequately diagnosed and treated in the private sector.
- **Lack of will**- While treating more than 10 million TB patients under the Revised National TB Control Programme (RNTCP), the rate of decline is too slow to meet the 2030 Sustainable Development Goals (SDG) and 2035 End TB targets.
- **Socio-economic challenges**-The complexity of TB in India is further exacerbated by factors such as drug resistance, co-infections with HIV and disparities in healthcare access.
- **Lack of regulation**- Unregulated private health care leading to widespread irrational use of first-line and second-line anti-TB drugs.
- **Multidrug-resistant TB (MDR TB)**- It is caused by an organism that is resistant to at least isoniazid and rifampin, the two most potent TB drugs.
- **Concerns with dairy products**- Unpasteurized milk or dairy products made from raw milk is another potential source of TB for humans.

### What are the measures taken by India to eradicate TB?

- **National Tuberculosis Elimination Programme(NTEP)** - Aims to strategically reduce TB burden in India by 2025. It was previously known as Revised National Tuberculosis Control Programme (RNTCP).
- **National Strategic Plan for TB Elimination** – It was launched to achieve the target of ending TB by 2025 in a mission mode. It is a multi-pronged approach which aims to detect all TB patients with an emphasis on reaching TB patients seeking care from private providers and undiagnosed TB in high-risk populations
- **Ni-kshay Poshan Yojana(NPY)(Nutritional Support to TB)** - It helps to meet the nutritional requirements of TB patients, especially the underserved

- **Patient Provider Support Agencies (PPSA)** - To engage the private sector, Patient Provider Support Agencies (PPSA) have been rolled out across 250 districts through the domestic setup and JEET initiative
- **Universal Drug Susceptibility Testing (UDST)** - To ensure every diagnosed TB patient is tested to rule out drug resistance before or at the time of treatment initiation itself.
- **Pradhan Mantri TB Mukh Bharat Abhiyaan** - To bring together all community stakeholders to support those on TB treatment and accelerate the country's progress towards TB elimination.
- **Ayushman Bharat - Health and Wellness Centres** - To decentralize comprehensive primary healthcare including TB care services at the grassroots level.
- **Bedaquiline and Delamanid** -Newer drugs like Bedaquiline and Delamanid have also been made available for management of DRTB.

#### What are the global measures to eradicate TB?

- **End TB Strategy** – It is implemented by World Health Organization (WHO) which serves as a blueprint for countries to
- Reduce TB incidence by 80%, reduce TB deaths by 90%, and to eliminate catastrophic costs for TB-affected households by 2030.
- **The Global Fund** - A worldwide movement to defeat HIV, TB and malaria and ensure a healthier, safer, more equitable future for all.
- **Stop TB Partnership** - Brings together expertise from a broad spectrum of country, regional, and global partners in our shared mission to revolutionize the TB space and end TB by 2030
- **Sustainable Development Goal 3** - To end TB epidemic by 2030.

#### What lies ahead?

- India has *mandated the notification of all TB cases*, and has integrated TB programmes with general health services under the National Health Mission.
- **Government expansion**- There has been an expansion of diagnostic services, service expansion in programmatic management of drug-resistant TB (PMDT), single-window service for TB-HIV cases, national drug resistance surveillance, and the revision of partnership guidelines.
- **DTPB strategy**-The requirements for moving towards TB elimination should be integrated into the four strategic pillars of 'Detect – Treat – Prevent – Build' (DTPB).
- **Low cost**-To lower production cost so as to make few available anti-TB drugs to everyone.

### 8.5 H5N1 vs H5N2

#### Why in news?

Recently, World Health Organization (WHO) has confirmed the first-ever human death caused by the H5N2 strain of avian influenza.

#### What is an Avian influenza?

- **Bird flu**- It is a viral infection that primarily affects birds but can also infect mammals, including humans.
- **Transmission**- It spreads from infected birds to humans through close contact with birds or contaminated environments, such as in backyard poultry farm settings and at markets where birds are sold.
- **Symptoms**-
  - Respiratory symptoms- Cough, shortness of breath, difficulty breathing, and sore throat.
  - Non-respiratory symptoms- Fatigue, Muscle or body aches
- **Asymptomatic infection**- Some individuals may not show symptoms (asymptomatic) despite being infected, particularly those with exposure to infected animals or their environments.

*Avian influenza is a zoonotic disease, meaning it can spread from animals to humans.*

#### What is a novel avian influenza A virus?

- **About**- It is a newly identified subtype of influenza A virus that originates in birds (avian species) but has undergone mutations allowing it to infect other species, including humans.

- **Novel viruses**- These viruses are termed "novel" because they possess unique genetic characteristics not previously identified in existing influenza strains.
- **Host**- It primarily infects birds, both wild and domestic (e.g., chickens, ducks, and turkeys), it can potentially infect other animals, including mammals like pigs and humans, especially if the virus adapts to these hosts.
- **Transmission**-

Types of transmission	About
<b>Bird-to-Bird</b>	Direct contact, contaminated water, or surfaces
<b>Human infections</b>	It usually occurs through direct or close contact with infected birds or contaminated environments.
<b>Human-to-human transmission</b>	It is a potential concern as the virus acquires the ability to spread efficiently among people.

- **Health impact**- In humans, infections can range from mild respiratory symptoms to severe disease and even death, depending on the virus strain and individual health factors.
- **Public health concern**- Novel avian influenza viruses are closely monitored due to their potential to cause pandemics.
- **Examples**-
  - **H5N1**- First identified in 1997 in Hong Kong it has caused numerous outbreaks in birds and sporadic human infections with high mortality rates.
  - **H7N9**- Emerged in China in 2013, causing severe respiratory illness in humans.
  - **H5N2**- Recently noted for its first human infection case in Mexico
- **H5 viruses**- They are classified based on two types of protein on their surfaces: hemagglutinin, or H, which plays a crucial role in allowing the virus to infect cells, and neuraminidase, or N, which helps the virus spread.

*People become infected with H5 viruses through direct contact with birds and poultry, not other humans.*

**What are the major differences between H5N1 vs H5N2?**

Points of Difference	H5N1	H5N2
<b>Origin</b>	The goose/Guangdong-lineage of H5N1 avian influenza viruses first emerged in 1996 and has been causing outbreaks in birds since then.	H5 viruses have been circulating among poultry and wild birds in Mexico since the mid-1990s. Australia reported the first human infection with A(H5N1), with no evidence of transmission.
<b>Meaning</b>	H5N1 is one of several influenza viruses that causes a highly infectious respiratory disease in birds called avian influenza (or "bird flu").	H5 N2 is a subtype of the species Influenzavirus A (avian influenza virus or bird flu virus).
<b>Spread</b>	Infections in mammals, including humans, have also been documented. (Almost all cases of H5N1 virus infection in people have been associated with close contact with infected live or dead birds).	The subtype infects a wide variety of birds, including chickens, ducks, turkeys, falcons, and ostriches. Unlike other avian influenza strains that have caused outbreaks in humans such as H1 and H3 viruses — H5 viruses rarely infect humans.
<b>Human to Human transfer</b>	The virus is yet to show any signs of transfer between humans.	A human infection due to novel influenza A virus subtype even has potential for high public health impact.
<b>Vaccine</b>	Currently, human infections of H5N1 are limited and vaccines are not recommended. (In China, inactivated H5N2 has been effectively used as a	There are no specific vaccines for preventing influenza A(H5) virus infection in humans.

	poultry vaccine for H5N1). There is also an mRNA vaccine targeting a specific subtype of the H5N1 virus.	
<b>Symptoms</b>	The clinical signs of the disease are identified as a decrease in food consumption and a simultaneous decrease in rumination, a reduction in milk production, dehydration, fever, clear nasal discharge, tacky or loose faeces, lethargy and thicker, concentrated, colostrum-like milk.	Symptoms include fever, shortness of breath, diarrhea, nausea, and general discomfort.

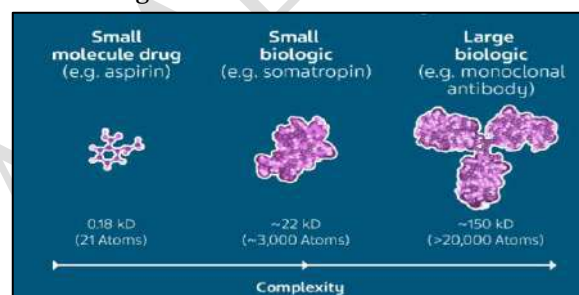
## 8.6 Biopharmaceutical Alliance

### Why in news?

Recently, the biopharmaceutical alliance was launched to build a resilient supply chain in the biopharmaceutical sector.

### What are Biopharmaceuticals?

- Biopharmaceuticals are complex medicines made from living cells or organisms.
- **Production** – They are often produced using cutting-edge biotechnological methods.
- **Types** – There are two classes of biopharmaceuticals.
- **Biologics** – It include medicines that generally come from living organisms, which can include animal cells and microorganisms, such as yeast and bacteria.
  - **Insulin** became the first biologic cleared for human use in 1982.
- **Biosimilar** – It is a biologic that is highly similar to another biologic that is already patented (original biologic).
  - A **human growth hormone** was first biosimilar, which was approved in Europe.
- Biologics cannot be copied exactly, and so biosimilar are not identical to their original biologic.
- **Usage** – They are potential for precise and targeted treatments, usually injected into the body.
- **Challenges** – They tend to be heat sensitive and easy to contaminate.
- They are difficult and expensive to make, store and transport.



Feature	Biologic	Biosimilar	Generic
Representation			
Origin	Living organisms	Similar to the reference biologic	Identical to the brand-name drug
Manufacturing process	Complex	Complex	Simple
Regulatory approval process	More rigorous	More streamlined	Similar to biologics
Safety and efficacy	Same standards	Same standards	Same standards
Time Investment	8-10 years	7-8 years	2-3 years
Cost	More expensive	Less expensive	Less expensive
Savings	Less savings	More savings	More savings than the brand-name drug

## What is Biopharmaceutical Alliance?

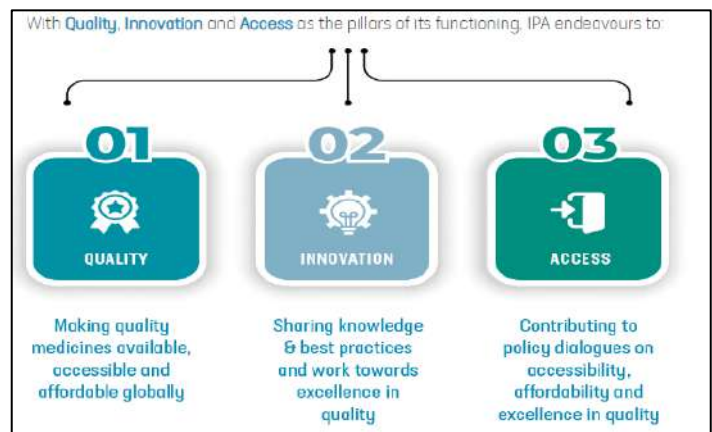
- **Need** – There was a huge drug supply shortages seen during the Covid-19 pandemic.
- The production of essential raw materials and ingredients of pharma products are concentrated in a few countries posing a greater risk in supply chain.
- **Formation** – It was initially organized during the U.S.-Korea Critical and Emerging Technology Dialogue in 2022.
- The first meeting of the Alliance was held in San Diego during the Bio International Convention 2024, the world's largest biopharmaceutical exhibition.
- **Members** – India, US, South Korea, Japan and the EU.
- **Primary focus** – To identify and mitigate the weaknesses in the bio-pharmaceutical supply chain through advanced manufacturing technologies and robust research and development (R&D) initiatives.
- **Importance** – It is a crucial step towards enhancing economic security and public health resilience on a global scale.

## What are the key objectives of the Biopharmaceutical Alliance?

- **Building a resilient supply chain** – It involves ensuring the production of essential raw materials and ingredients is diversified and not overly concentrated in a few regions.
- **Coordinating bio-policies and regulations** – By harmonizing standards and procedures, it will facilitate smoother cross-border collaborations.
- It may also reduce bureaucratic hurdles that can impede the swift delivery of critical biopharmaceutical products.
- **Supporting research and development** – It places a strong emphasis on joint R&D efforts.
- By pooling resources and expertise, the member countries intend to accelerate innovation in the biopharmaceutical field.
- It also plans to ensure that new and effective treatments are developed and made accessible more rapidly.
- **Creating a detailed supply chain map** – A comprehensive pharmaceutical supply chain mapping will identify critical nodes and potential points of failure within the supply chain.
- This will enable the alliance to proactively address weakness and enhance the overall resilience.

## What is Indian Pharmaceutical Alliance (IPA)?

- It is an association of 23 leading research-based pharmaceutical companies in India, committed to patient care globally.
- **Formation** – IPA began its journey in 1999 with six top drug makers - Cipla, Dr Reddy's, Lupin, Piramal, Ranbaxy and Wockhardt - as its founding members.
- **Aim** – To create a collaborative environment for the Indian pharma industry to discover, develop and deliver quality-assured medicines equitably.
- **Significance** – It has evolved as the most potent voice for the Indian pharma industry, promoting high standards in pharmaceutical production and quality assurance.
- IPA companies collectively account for
  - 85% of the private sector investment in pharmaceutical R&D
  - 80% of India's exports of drugs & pharmaceuticals
  - 62% of the price controlled medicines
  - 60% of the domestic market sales



## India's Pharmaceutical Sector

- **Market Size** – It is currently valued at \$50 Bn.
- India is the *largest provider of generic drugs* globally, accounting for 20% of the global supply by volume.
- Globally, India ranks *3rd in pharmaceutical production* by volume.
- **Export market** – India supplies
  - Over 50% of Africa's requirement for generics
  - About 40% of generic demand in the US
  - About 25% of all medicine in the UK.
- **Vaccine market** – India accounts for about *60% of global vaccine demand*.
- It is the leading supplier of *DPT, BCG and Measles* vaccines.
- *70% of WHO's vaccines* (as per the essential Immunization schedule) are sourced from India.
- **Measures** – 100% Foreign Direct Investment (FDI) in the pharmaceutical sector is allowed under the automatic route for Greenfield pharmaceuticals.
- 100% FDI in the pharmaceutical sector is allowed in brownfield pharmaceuticals, wherein 74% is allowed under the automatic route and thereafter through the government approval route.
- The *Production Linked Incentive* (PLI) scheme to boost domestic manufacturing and reduce dependency on imports.
- The '*Pharma Vision 2020*' aims to make India a global leader in end-to-end drug manufacturing.

## 8.7 Digital Health Incentive Scheme

### Why in news?

The central government has recently given a year-long extension to the Digital Health Incentive Scheme (DHIS).

### What is Digital Health Incentive Scheme?

- **Launch** – The scheme was launched by the *National Health Authority (NHA)* in **2023**.
- **Aim** – It is meant for *digitising patients' health records* and linking them with the Ayushman Bharat Digital Health Account (ABHA ID).
- It also aims to *promote digital health transactions* and to provide a boost to the healthcare providers for adopting digital health.
- **Eligibility** – All Health facilities like Clinics, Nursing Homes & Hospitals.
- Laboratory/Radiology diagnostics Centers and Pharmacies.
- Entities providing ABDM enabled digital solutions (Digital Solution Companies).
- **Beneficiaries** – The Tier 1 and 2 cities in India have been the main beneficiaries of digital healthcare services.
- The scheme is applicable to both *public and private hospitals and digital solution companies* (DSCs) creating digital health records.
- **Incentives** – Under the scheme, government and private hospitals, clinics, nursing homes, diagnostic labs, and pharmacies are *paid Rs 20 for each additional record* they digitise, over and above the threshold of 100 transactions a month.



- Under it, each facility or digital solution company can earn incentives up to Rs 4 crores.

Digital Health Incentive Scheme Incentives		
Type of Entity	Base Level Criteria	Incentives
Digital Solution Companies	For hospitals/clinics /labs /nursing homes using their software	5 rupees per transaction per month
Hospitals/Clinics/Nursing homes	100 transactions per month	20 rupees per additional transaction above the base level.
Diagnostic Facilities/Labs	100 transactions per month	20 rupees per additional transaction above the base level.
	For health locker/teleconsultation transactions	500 rupees transactions per month, 5 rupees per additional transaction above the base level.
Insurance Provider	For every insurance claim transaction linked with ABHA address filled by hospital through Health Claim Exchange	500 rupees per claim or 10 percent of the claim amount, whichever is lower.

### Why DHIS is extended?

- **Extension** – DHIS will now remain in effect till June 30, 2025.
- **Need for extension** – It is meant to incentivise providers of digital health solutions such as hospital’s health management information system (HMIS) and laboratory management information system (LMIS) to make available the right software at an affordable cost.
- **Impact on hospitals** – The scheme helps reimburse hospitals their expenditure on digitising their facility as this expenditure was often reported as a significant drawback for hospitals to move to digital health.
- Hospitals and clinics have to install computers and laptops, purchase an internet connection, and software (HMIS/LMIS) to go digital.
- A behaviour change component is also involved in moving from physical mode of working to digital.
- The scheme is on the lines of the incentives given for promotion of UPI.
- **Significance** – This extension will help health facilities adopt the essential digital tools they need for their operations.

### How DHIS can be beneficial for the patients?

Benefits of Digital Health Incentive Scheme			
 <p><b>Earn incentives for Digitization</b></p> <p>Reimburse the expenses incurred for digitization to all the participating healthcare facilities, Digital Solution Companies</p>	 <p><b>Efficiency in Healthcare Delivery</b></p> <p>Seamless access to patient’s longitudinal health records; Removes hassles in the healthcare process (registration, appointment, consultation, IPD admission, discharge, etc)</p>	 <p><b>Building a Robust Digital Health Ecosystem</b></p> <p>Building a robust digital health ecosystem across different levels of healthcare facilities</p>	 <p><b>Improved Quality of Care</b></p> <p>Evidence based, accessible, and good quality care. Patient’s ease of access to digitized health records and improved healthcare delivery.</p>

- **Better services** – DHIS equips the care providers to become digital, thereby enabling better healthcare services and more convenience for patients.
- **Reduced waiting time** – By enabling digital transactions the patient’s waiting time gets reduced. Patients will be able to scan a QR code and avail quick OPD registrations.
- **Access of medical records** - They can also securely view, access, and share their health records with the care providers.
- **Reduced burden on patient** - Without the scheme, hospitals are likely to recover the digitisation costs from the patients.

- **Saving money** – Patients are less likely to get same tests done repeatedly due to loss of records, especially in cases of migrant workers and patients travelling from one state to another.
- **Health insurance** – This provides access to better health insurance for older people.

### Quick Facts

- **National Health Authority** – It is the successor of the National Health Agency which was constituted in 2019 and has a full functional autonomy. It is the apex body responsible for implementing AB-PMJAY and National Digital Health Mission.
- **ABHA ID** – It is a unique identity for people just like an Aadhaar ID that allows one to store and share their medical records digitally which includes records such as doctor's prescriptions, diagnostic test results.
- **Public digital solution companies** – It includes companies such as National Informatics Centre (NIC) and Centre for Development of Advanced Computing (C-DAC), which provide eHospital and eSushrut solutions to government hospitals.

## 8.8 Higher Dengue Infections in Europe

### Why in news?


Recent research by EU health agency shows that warmer conditions are helping the *Aedes albopictus* mosquito to transmit dengue, chikungunya and Zika viruses in Europe.

### What is Dengue Fever?

- **Causes** – It is a **viral infection**, and there are four serotypes of the dengue virus - DEN-1, DEN-2, DEN-3 and DEN-4.
- **Infection** – Each virus interacts differently with antibodies in the human body and is capable of manifesting into
  - Dengue fever
  - Dengue hemorrhagic fever
  - Dengue shock syndrome.
- **Spread** – Dengue is found in tropical and sub-tropical climates worldwide, mostly in urban and semi-urban areas.
- **Vector borne disease** – It is spread through the mosquito vector.
- It is the world's fastest-growing vector borne disease.
- **Transmission** – It is transmitted to humans by the *Aedes mosquito species*, which also spreads Chikungunya and Zika virus.
- It is primarily by the *Aedes aegypti* mosquito while other species within the *Aedes* genus are normally secondary to *Aedes aegypti*.
- **Symptoms** – Mostly asymptomatic, but the most common symptoms are high fever, headache, body aches, nausea and rash.
- **Diagnosis** – IgM, IgG antibodies test and NS1 antigen test.
- Both are done through ELISA kits and hence are popularly known as Elisa test.
- **Treatment** – No specific treatment but generally treated with pain medicine.
- **Prevention** - Prevention and control of dengue depend on vector control.
- There is no specific treatment for dengue/severe dengue, and early detection and access to proper medical care greatly lower fatality rates of severe dengue.
- **Vaccine** – Dengvaxia was the first vaccine to receive a nod in 2015, and has been licensed in 20 countries since.
- It is a live attenuated vaccine.

### DO'S TO PREVENT DENGUE

- Keep home, environment and surroundings in hygienic conditions
- Remove all stagnant water, containers, old tyres, air-coolers, etc.
- Keep all drains well maintained
- Observe dry day once
- Repellents, medicated screens, coils and sprays to avoid mosquito bites
- No self-medication. Consult a physician if high fever persists for more than 48 hours



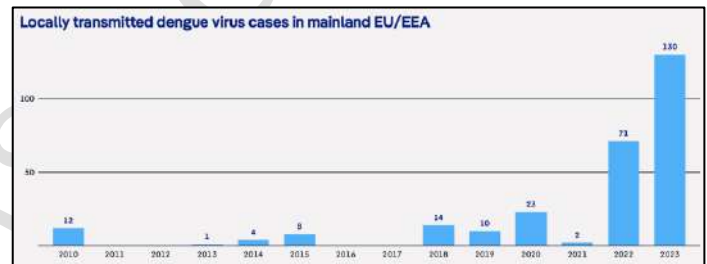
- WHO recommends 'Dengvaxia' for children aged 9 to 16 years.
- **Challenges** – Dengvaxia's *efficacy is limited* to those with confirmed previous infections.
- Dengvaxia is *not licensed in India*.

### Global Burden of Dengue

- *About half of the world's population* is now at risk of dengue with an estimated 100–400 million infections occurring each year.
- The incidence of dengue has grown dramatically around the world in recent decades, about *5.2 million cases in 2019*.
- The *highest number of dengue cases was recorded in 2023*, affecting over 80 countries in all regions of WHO.
- It resulted in a historic high of *over 6.5 million cases* and more than 7300 dengue-related deaths reported.
- **Factors for increasing risk of spread** – The *changing distribution of the vectors* (chiefly *Aedes aegypti* and *Aedes albopictus* mosquitoes), especially in previously dengue naïve countries.
- The consequences of *El Niño phenomena in 2023* and *climate change* leading to increasing temperatures and high rainfall and humidity.
- *Fragile health systems* in the midst of the COVID-19 pandemic.
- The *political and financial instabilities* in countries facing complex humanitarian crises and high population movements.

### Why there is rise in dengue cases in Europe?

- There are different types of *Aedes* mosquito, but the one most widespread in Europe is the *aedes albopictus*.
- **High temperature** – Europe is experiencing *higher heat shocks* in recent times due to climate change.
- Not only during the day but also at night, may contribute to the spread of dengue in southern Europe.
- **High mosquito population** – *Longer stints of high temperatures* offer more time for the mosquitoes to breed, ultimately resulting in more mosquitoes as summers start early and stretch late into fall.
- **Travel-related transmission of the virus** – Because dengue is *not endemic in Europe*, this occurs when a traveler brings the virus from abroad.
- **Expansion of mosquito populations** – The *Aedes albopictus* mosquito was first detected in Europe in the early 2000s.
- It has since spread to many more areas around the Mediterranean and Central Europe and has increased in abundance in areas close to larger population centers.



Temperatures need to be high between 15 and 35 degrees Celsius for the mosquitos to thrive.

### What lies ahead?

- **Awareness campaign** – Doctors across Europe should *increase their awareness of the symptoms* of dengue, because most cases are mild or asymptomatic and therefore hard to spot.
- **Vector control** - Vector control describes measures used to limit or eradicate human contact with the "vector," the thing that transmits a disease in this case the mosquito.

### Measures by India to control Spread of Dengue

- Established *Sentinel Surveillance Hospitals* with laboratory support for augmentation of diagnostic facility for Dengue in endemic States.
- Government is providing *free testing/treatment* of dengue in government hospitals.
- *Rate of Elisa test* to confirm dengue have been *capped* in private hospitals.

- More than 15 lakh houses are been visited by health department for *breeding checking*.
- Genome sequencing involving *analysing the genetic makeup of the virus* and aims to create a comprehensive understanding of dengue.
- Under National Health Mission, *budgetary support* is provided to the States/UTs for Dengue and Chikungunya control activities.

## 8.9 Impact of Air Pollution on Human Health

### Why in news?

Recently, the State of Global Air (SoGA) 2024 was released which offers a stark reminder of the significant impacts air pollution has on human health.

### What is air pollution?

- **Air pollution** – It is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere.
- **Common sources** – Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution.
- The major outdoor pollution sources include residential energy for cooking and heating, vehicles, power generation, agriculture/waste incineration, and industry.
- **Pollutants** - Pollutants of major public health concern include particulate matter, carbon monoxide, ozone, nitrogen dioxide and sulfur dioxide.
- **Impact on climate** – Many of the drivers of air pollution (i.e. combustion of fossil fuels) are also sources of greenhouse gas emissions.
- **Impact on human health** - Outdoor and indoor air pollution cause respiratory and other diseases and are important sources of morbidity and mortality.
- Polluted air is a *big trigger for pneumonia* and other respiratory infections and allergic diseases in children.
- There is a strong connection between long-term exposure to *traffic-related air pollution and early death* due to cardiovascular diseases and lung cancer, asthma onset in children and adults, and acute lower-respiratory-tract infections in children.

*WHO data show that almost all of the global population (99%) breathe air that exceeds WHO guideline limits and contains high levels of pollutants, with low- and middle-income countries suffering from the highest exposures.*

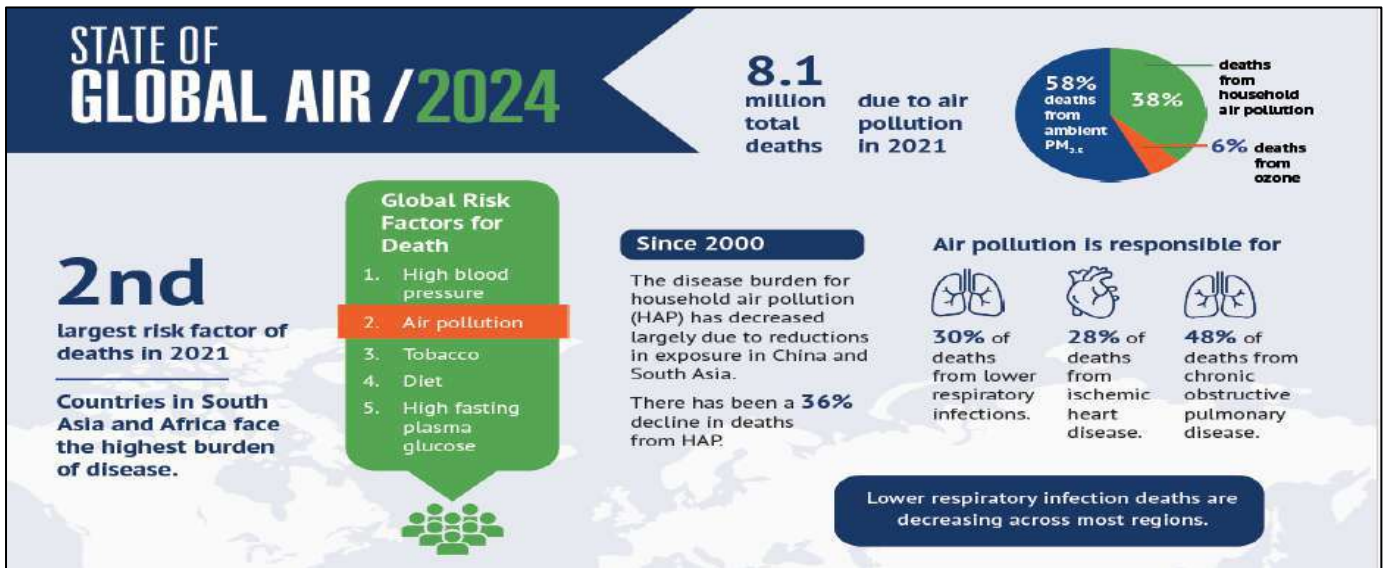
### State of Global Air (SoGA) 2024

- It is an *annual tracker of health impact of air pollution*.
- **Prepared by** – It is a collaborative assessment by the
  - US-based Health Effects Institute (HEI)
  - Institute for Health Metrics and Evaluation's Global Burden of Disease (GBD) project.
- This has been produced for the *first time in partnership with UNICEF*.
- **Data source** – These results are linked to the Global Burden of Disease (GBD) 2021 report which estimated about 200 countries.
- **Assessment** – It usually assess the impact of *Particulate Matter (PM<sub>2.5</sub>) and Ozone* on human health.
- This 2024 report also covers the impact of *nitrogen oxides (NO<sub>2</sub>)*.

### What are the key findings of the report?

- **During the pre-pandemic phase (1990 to 2019)** – The order of the leading global causes of death were ischemic heart disease, stroke, chronic obstructive pulmonary disorder (COPD), and lower respiratory disease.
- **Post pandemic in 2021** – Covid-19 changed the order with age-standardised mortality from COVID ranking second after ischemic heart disease, and stroke and COPD dropping to third and fourth place, respectively.

- **Impacts of air pollution on human** – It became the second largest killer globally after blood pressure, recording a dubious tally of 8.1 million deaths in 2021.



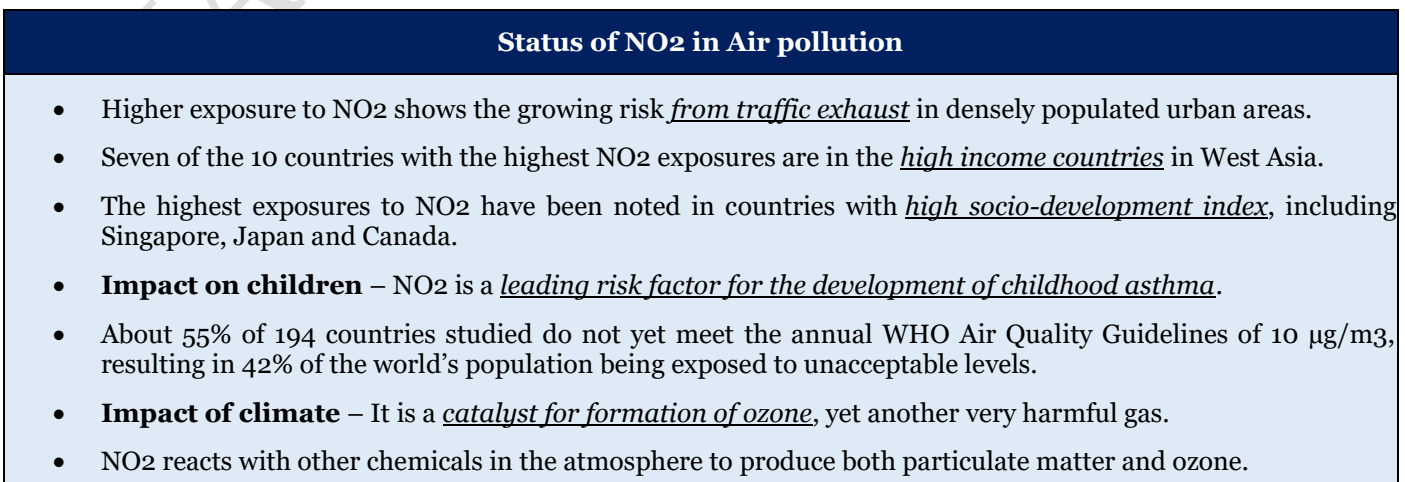
- **Impact on children under five years** - With more than 700,000 deaths, air pollution become the second leading risk factor after malnutrition globally.
- As many as 500,000 of these child deaths are linked to household air pollution from cooking indoors using dirty fuels in Africa and Asia.
- Polluted air is a big trigger for pneumonia and other respiratory infections and allergic diseases in children.



- **Impact of Climate Change** – It can exacerbate the health burden of non-communicable diseases, including heart and lung diseases, during heatwaves.

### What is the status of pollutants causing air pollution?

- Even though PM<sub>2.5</sub> (both ambient and household together) account for more than 90% of the total air pollution disease burden, NO<sub>2</sub> and ozone are the growing risk factors globally.



### Status of Ozone in Air pollution

- Ozone levels have also *increased in South Asia*.
- **Impact of Climate change** – The chemical reactions that form ozone *increase when the air is warmer*, especially during heatwaves.
- Evidence shows that ozone *spikes during heatwaves* in China and Europe.
- **Exposure** – The proportion of population experiencing high ozone exposures is also increasing in India, Nigeria, Pakistan, and Brazil.
- **Impact on vegetation** – It can *reduce crop yields, damage biodiversity*, and undermine food security and nutrition.
- **Impact on humans** – In 2021, ozone was responsible for *56% of all global ozone deaths* reported in South Asia.
- Exposure to ozone is associated with an increased risk of both *acute and chronic respiratory illnesses*.
- **India** – It has recorded about *237,000 ozone related deaths*.
- In 2021, nearly 50% of all ozone-related COPD deaths were in India, followed by China and Bangladesh.

### Status of PM 2.5 in Air pollution

- Evidently, nearly 20% of the global ambient PM<sub>2.5</sub> is attributed to household air pollution.
- **Impact on humans** – India and China have recorded 2.1 million and 2.3 million deaths respectively and together account for nearly 55% the total global disease burden from particulate matter.

#### What lies ahead?

- **Emulate the successful policy decisions** – There has been a 61% reduction in the age-standardised death rate from household air pollution.
- This improvement has been possible due to growing access to clean energy for cooking, grid electricity, cleaner-burning cookstoves, and cleaner fuels.
- **Tackle air pollution** – It can be done by reducing toxic emissions and greenhouse gases, which will improve public health and combat climate change.

## 9. BILATERAL ISSUES

### 9.1 India - Canada ties

#### Why in news?

Recently, a parliamentary committee report in Canada has described India as the second-biggest foreign threat to the country's democracy displacing Russia.

#### What are the major highlights of the report?

- The report added to the *negative state of the bilateral relation* between India-Canada which have been caught in a diplomatic spat since 2023 killing of a ***pro-Khalistan ideologue*** in Surrey, British Columbia.
- Alleged interference by India has slowly increased but at the same time the operation has become expanded.
- Such threat assessment is part of the Canadian government's practices, in recent years the focus has increasingly *shifted to China and India*.
- It described ***China as the topmost foreign threat*** to Canada's democracy.

#### What is the history of India Canada relations?

- **Political relation-** India shared diplomatic relation with Canada in 1947, Canada supported plebiscite in Kashmir in 1948, which reflects the diplomatic relation shared by both countries.
- India-Canada *Track 1.5 Dialogue* was established involving experts, government officials and business leaders from both sides to explore the possibility of future cooperation.

- **Geopolitics-** Both Canada and India are member nations of the Commonwealth association and also part of G20, a group of world's largest economies.
- **Economic relations-** In 2022, India was Canada's 9th-largest merchandise trading partner in the Indo-Pacific region, the 13th-largest merchandise trading partner globally, and the 14th-largest destination for merchandise exports.
- **Trade agreement-** Both nations are working toward a Comprehensive Economic Partnership Agreement and a Foreign Investment Promotion and Protection Agreement (FIPA).
- **Science and Technology:** MoUs were renewed at the 7th India-Canada Joint Science and Technology Cooperation Committee (JSTCC) focussing on quantum computing, artificial intelligence (AI), and cyber-physical systems etc.
- **Agriculture:** Canada has agreed to examine the request for Conformity Verification Body (CVB) status to APEDA (Agricultural and Processed Food Products Export Development Authority) for hassle-free export of Indian organic products.
- **Nuclear cooperation-** Nuclear Cooperation Agreement (NCA) was signed with Canada in 2010.
- **Space relations-** ANTRIX, the Commercial arm of ISRO, has launched several nanosatellites from Canada. ISRO in its 100th Satellite launched in 2018, flew Canadian 1st LEO satellite, from Indian spaceport Sriharikota, Andhra Pradesh.
- **Education-** Shastri Indo-Canadian Institute (SICI) is a unique bi-national organization fostering, since 1968, education and cultural cooperation and collaboration between India and Canada.
- **Indian diaspora-** Canada hosts one of the largest Indian diasporas in the world, numbering 1.6 million (PIOs and NRIs) which account for more than 4% of its total population.
- **Cultural relations-** Canada was the Country of Focus at the 48th International Film Festival of India held in Goa in 2017.
- **IC-IMPACTS** (India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability) is the Centre of Excellence for development of research collaborations between Canada and India

Canada was ranked as the 17th largest foreign investor in India.

## INDIA AND CANADA, IN NUMBERS

**Canada accounts for just 0.56% of the total FDI in India.**



DPIIT data show total FDI equity inflow between April 2000 to June 2023 was

\$645,386.0884 mn, of which only \$3,642.5243 mn came from Canada.

**But Canada is home to 5.26% of overseas Indians**



Of the 3,21,00,340 overseas Indians, 5.26% (16,89,055) are in Canada, including

1,78,410 NRIs and 15,10,645 PIOs, according to MEA data.

**And every 7th Indian student abroad is in Canada**



In 2022, of the estimated 13,24,954 Indian students abroad, 13.83% (1,83,310) were

in Canada, according to Ministry of External Affairs data.

**Canada is 4th largest source of tourists in India (2021)**



Canada accounted for 5.3% (80,437) of Foreign Tourist Arrivals (FTAs) in India in 2021; 72.6% of

Canadian FTAs were members of the Indian diaspora. FTAs from Canada rose to 3,51,859 in the pre-pandemic year 2019 from 88,600 in 2001. Arrivals from Canada fell sharply post pandemic.

**Bilateral trade is tiny; its balance is in India's favour**



India's trade with Canada was \$8,161.02 mn during FY 2022-23, just 0.70% of India's total

trade of \$1,165,000.88 mn. Canada was India's 35th biggest trading partner. The balance of trade is in India's favour; in 2022-23, India's exports to Canada stood at \$4,109.74 mn, and imports at \$4,051.29 mn.

HARIKISHAN SHARMA

## What are the major challenges in India-Canada relations?

- **Nijjar assassination controversy-** The two countries have expelled senior diplomats and issued travel advisories for their citizens. The controversy has damaged the trust and goodwill between the two governments and has inflamed the sentiments of the Sikh community in Canada.
- **Khalistan Issue-** India has accused Canada of being soft on pro-Khalistan groups and individuals, who have allegedly used Canadian soil to carry out anti-India activities.
- **Trade Impasse-** Despite having a bilateral trade agreement since 2011, India and Canada have not been able to finalize a comprehensive free trade agreement (FTA) or an investment protection agreement (IPA).
- **Human rights Concerns:** Canada has expressed concerns over the human rights violations in India, especially in relation to the Kashmir conflict, the Citizenship Amendment Act, the farmers' protests, and the crackdown on dissent.
- **Security dilemmas-** India and Canada have different views and interests on issues such as Afghanistan, Iran, China, Pakistan, and terrorism. India sees Canada as a close ally of the US, which has often been at odds with India on these issues.
- **Diaspora dynamics-** It has also been a source of tension and controversy, as some segments of the diaspora have been involved in political activism, lobbying, fundraising, and propaganda for various causes related to India or their respective communities.
- **Leadership gap-** The personal rapport and chemistry between Prime Minister Narendra Modi and Prime Minister Justin Trudeau have deteriorated over time due to their differences in personality, ideology, and style.

*The Khalistan issue, which refers to the demand for a separate Sikh homeland in India, has been a source of friction between India and Canada for decades.*

## What should be done?

- While the Canada-India dispute is a serious diplomatic matter, the relationship between their people remains robust.
- The need of the hour is quiet diplomacy, which is a diplomatic approach that focuses on negotiations and discussions.
- Canada should show respect for India's interest especially in Khalistan issue, which is a longstanding crisis between two countries.
- India should constructively engage with Canada on the entire gamut of legal processes and practices of both countries so that all grievances can be satisfactorily addressed.

## 9.2 India- Singapore Ties

### Why in news?

With India's new government in place, Singapore's Foreign Minister recently expressed optimism about scheduling the India-Singapore Ministerial Roundtable (ISMR) in the near future.

### What is the history of India-Singapore relations?

- **Historical relations-** India-Singapore links date back more than 700 years when Singapore was part of Hindu-Buddhist kingdoms.
- **Diplomatic relations-** It was established between India and Singapore were established in **1965** as India was one of the first countries to recognize Singapore in 1965.
- **Bilateral relations-** India-Singapore Strategic Partnership (SP) was established in 2015 and updated in 2018 to include FinTech and innovation.
- **Political engagement-** Two key ministerial committees/dialogues are the Foreign Ministers' Joint Ministerial Committee for Bilateral Cooperation and the India-Singapore Defence Ministers' Dialogue.
- **Diplomatic milestones-** The 50th anniversary of diplomatic relations was marked in 2015 with state visits from the both countries.
- **India-Singapore Ministerial Roundtable (ISMR)-** It has been established in 2022 to chart a roadmap to take bilateral relations to a new level, it focuses on emerging areas such as digital connectivity, Fintech, Green Economy, Green Hydrogen etc.,

*Singapore also supported India in its war against Pakistan in 1965 and the Kashmir conflict.*

- **Geopolitics**-Singapore supported India's bid to become a permanent member of the U.N. Security Council and expand its role and influence in the Association of Southeast Asian Nations (ASEAN).
- **Military relations-**

<b>Joint naval exercises</b>	SIMBEX and MILAN
<b>Air force exercise</b>	SINDEX
<b>Army exercise</b>	Bold Kurukshetra

- **Fintech collaboration**- The link between India's UPI and Singapore's PayNow was officially launched in 2023, it will enable users to make instant, low-cost fund transfers directly from one bank account to another between Singapore and India.
- **Regulatory Co-operation Agreement on fintech**- It was signed by India and Singapore in 2019, it has features such as information sharing, potential joint innovation projects etc.,

- **Trade relations**- Singapore is India's sixth largest trade partner, accounting for 2.9% of India's overall trade, while India is Singapore's 12th largest trade partner with a 2.3% share in Singapore's overall trade.

Major exports from India	Major imports to Singapore
<ul style="list-style-type: none"> <li>• Mineral fuels, Mineral oil and products</li> <li>• Bituminous substances</li> <li>• Mineral waxes</li> </ul>	<ul style="list-style-type: none"> <li>• Nuclear reactors,</li> <li>• Boilers</li> <li>• Machinery, and mechanical appliances</li> </ul>

- **Economic relations**- Singapore is the largest sources of External Commercial Borrowings for India and Foreign Portfolio Investment from Singapore has been extremely important for India.
- **Cultural cooperation**- Regular cultural exchanges include performing **arts, theatre, museum exchanges, art, languages, and youth exchanges** happen between India and Singapore.
- **Tamil linkage**- Tamil is one of the four official languages of Singapore, Singapore's only Tamil newspaper **Tamil Murasu** was set up in 1935.
- **Science and Technology Cooperation**- ISRO launched Singapore's first indigenously built micro-satellite in 2011. In 2023, ISRO successfully launched the **PSLV-C55 mission** carrying two Singapore satellites.
- **Tourism**- In 2019, India was the 3<sup>rd</sup> largest source of tourism for Singapore. Post COVID, Indian tourists have become the 2<sup>nd</sup> largest source of visitors to Singapore.
- **Multilateral forum**- Both countries are members of several forums, including the East Asia Summit, G20, Commonwealth, IORA (Indian Ocean Rim Association), and IONS (Indian Ocean Naval Symposium), reflecting their convergence on international issues.
- **Diaspora**-Ethnic Indians constitute about **9.1 % of the resident** population in Singapore. Singapore has the highest concentration of IIT and IIM alumni in any one city outside India.

*Little India is a colorful center of Indian culture in Singapore.*

### What is the Significance of Singapore for India?

- **Good trade relations**- Singapore accounted for over one-fourth of India's trade with Southeast Asia, reflecting the success of the Comprehensive Economic Cooperation Agreement (CECA) between the two countries.
- **Investment destination**- Singapore accounted for 27.3% of India's overall trade with the ASEAN region, making it one of the country's largest trade and investment partners in the region.
- **States collaboration**: Singapore has strong connections with Indian states like West Bengal, Rajasthan, Andhra Pradesh, and Telangana.
- **Investment opportunities**- The top sectors attracting FDI equity inflows from Singapore include services, computer software and hardware, trading, telecommunications, and drugs and pharmaceuticals.
- **UPI-PayNow linkage**- It will enable users of each of the two fast payment systems to make instant, low-cost fund transfers on a reciprocal basis without a need to get onboarded onto the other payment system.
- **Collaborative projects**- Singaporean companies have been taking a leading role in a range of **smart city initiatives** across India, partnering with local governments and private enterprises in various urban planning, logistics, and infrastructure projects.

*Singapore is responsible for the Amaravati capital city project.*

## 10. INTERNATIONAL ISSUES

### 10.1 WTO Arbitration

#### Why in news?

Recently, India has sought arbitration proceedings under the WTO rules against Australia to resolve an issue with regard to services sector as it could impact India's trade in services.

#### World Trade Organization

- WTO is the only international organization that deals with the rules of trade between countries.
- **Establishment**- It was created in 1995 superseding the 1947 General Agreement on Tariffs and Trade (GATT).
- **Marrakesh Agreement**- WTO officially commenced under the Marrakesh Agreement, replacing the General Agreement on Tariffs and Trade (GATT).
- **Creation**- It was created by Uruguay round of negotiations and established in 1995.
- **Members**- The WTO is run by its 164 members representing 98% of world trade.
- **Decision making**- Unlike other organisations, such as the IMF or World Bank, WTO does not delegate power to a board of directors or an organizational chief.
- All decisions are taken through consensus and any member can exercise a veto.
- **General Council**- It is the top day-to-day decision-making body that has representatives from all member governments and also meets, under different rules, as the Dispute Settlement Body.

#### What is the issue?

- **WTO disputes**- It can be resolved through the arbitration process.
- **Disagreement**- It is about changes Australia is making to its promises that might affect India's trade in services.
- The changes Australia made were to its promises under an agreement that is part of the WTO system and aims to lower trade costs around the world.
- The changes include standards for licenses and qualifications that are meant to lessen the effects of trade barriers.
- India as an affected member has stated that Australia's intended modification of its specific commitments does not satisfy certain conditions.
- Thereafter, India and Australia entered negotiations with a view to reaching an agreement.
- Despite extended negotiations India and Australia failed to reach an agreement leading India to request arbitration.

#### What are the recent obligations made under GATS?

- **Abu Dhabi meet**-Recently, Over 70 WTO nations agree to take additional obligations under the General Agreement on Goods in Services (GATS) to ease non-goods trade among themselves and extend similar concessions to all other members of the WTO.
- **Aim**- To reduce trade barriers related to licensing requirements, qualification procedures, and technical standards.
- **Market access**- Reducing trade barriers will benefit Indian professional companies which will now have equal opportunity to access markets in these **70 countries**, if they meet the standards.
- **Global effect**-It will help reduce services trade costs by 10 % for lower-middle income economies and 14% for upper-middle income economies, with overall savings of USD 127 billion.
- **Impact on India**- The main point of disagreement is how these changes are seen to affect Indian service providers, especially their ability to enter Australian markets equally as agreed upon in the agreement.
- **India's stand**- As a WTO member, India wants to make sure that these promises are carried out in a way that benefits all members fairly.

*General Agreement on Trade in Services is a WTO agreement that came into force in 1995, India is a member of GATS.*

## How WTO handles disputes?

- **WTO Dispute Settlement Framework-** The WTO's Understanding on Dispute Settlement provides a legal framework for resolving trade disputes among member countries.
- **Key participants-** For WTO members, the ***United States, the European Union, and China*** are the ones that get into the most disagreements.
- **Dispute Settlement Body-** It handles disputes within the WTO, retaliatory measures can be taken against member countries which don't follow the body's decisions.
- **Procedure-** The process for settling disagreements is meant to be thorough and fair, and it usually takes **15 months** to make a decision.
- **Addressing non-trade concerns-** Even though the WTO's main job is to handle trade problems, many of its disputes also involve non-trade issues like *protecting the environment and people's health*.
- **Complexity-** These cases make the dispute settlement process more difficult because the DSB has to find a **balance between trade rules and the effects on society** as a whole.
- **Arbitration-** It is often used to determine the level of compensation or the scope of retaliatory measures if a member country fails to comply with the rulings of a WTO panel or the Appellate Body.
- **Specific disputes-** Arbitration can also be invoked in specific disputes where the parties have agreed to arbitration as the preferred method of dispute resolution.

Since the WTO started in 1995, more than 500 disputes have been made.

## 10.2 Evaluation of India's Neighborhood Policy

### Why in news?

The presence of leaders from South Asia and the Indian Ocean at the swearing in of Indian PM underlines India's continuing commitment to the 'neighbourhood first' policy.

### What is the India's neighbourhood first policy?

- **Background** – India has historically shared deep cultural, economic and political ties with its neighbours.
- **India's neighbourhood** – Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka.
- **Officially launched in** – 2008.
- **Aim** – To enhance physical, digital and people to people connectivity across the region, as well as augmenting trade and commerce.



- **Act East Policy** – It was upgraded in 2014 from erstwhile India's 'Look East Policy' that was launched in 1992.
- It aims to further strengthen ties with countries of the *Southeast Asian region* and with countries in the *Indo-Pacific region*.
- **Think West Policy** – It is India's outreach to the *Gulf and West Asian countries* which are important for India's energy security and for the welfare of the Indian Diaspora.

- **Connect Central Asia Policy** – It envisages a deep, meaningful and sustained engagement with the *Central Asian region*.
- **SAGAR** – The ‘*Security and Growth for All in the Region*’ (SAGAR) concept was first articulated by the Indian PM in Mauritius in 2015.
- India envisages a free, open, inclusive, peaceful, and *prosperous Indo-Pacific region*.
- **Significance** – It guides India’s approach towards the management of relations with countries in its immediate neighbourhood.

*India has enhanced its engagement in the Southeast Asian region through engagements with ASEAN, East Asia Summit, Indian Ocean Rim Association, Indian Ocean Commission, Indian Ocean Naval Symposium, QUAD, among others.*

To know about India’s bilateral neighborly relations, [click here](#)

### Gujarat Doctrine

- *IK Gujaral* was the only Prime Minister with a foreign policy approach identified with his name.
- Doctrine – It was based on the understanding that India’s size and population by default made it a *major player in South East Asia*.
- Its position and prestige could be cemented by adopting a *non-domineering attitude towards its smaller neighbours*.
- It also emphasised the importance of keeping dialogue going, and avoiding needless provocations by commenting on the internal matters of other countries.

**Evaluate the effectiveness of India’s neighbourhood first policy?**

### Neighbourhood First policy - Succeeded

- **Diplomatic engagements** – It has resulted in increased dialogue and engagement across various platforms.
- Bilateral visits, summit meetings, and joint initiatives have helped in improving ties and addressing mutual concerns.
- **Infrastructure development** – Regional grouping have facilitated infrastructure development projects in neighbouring countries, enhancing connectivity and promoting economic integration.
  - SDF – SAARC Development Fund
  - AIIB – Asian Infrastructure Investment Bank
- **Security cooperation** – Collaboration is done on security issues, including counter-terrorism efforts, border management, and maritime security.
  - IONS – Indian Ocean Naval Symposium
- **Regional initiatives** – India is an active participant in regional groupings like
  - BIMSTEC – Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
  - BBIN grouping – Bangladesh, Bhutan, Nepal, India
  - IORA – Indian Ocean Rim Association (IORA).
- Altogether, these have contributed to regional stability, economic cooperation, and collective security in the Indian Ocean region.
- **Cultural exchanges** – The cultural exchange platforms have helped strengthen people-to-people ties and build neighbourly goodwill in the region.
  - ITEC – Indian Technical and Economic Cooperation

### Neighbourhood First policy – Challenges and failures

- **Unresolved border disputes** – Tensions along the Line of Control (LOC) and the Line of Actual Control (LAC) continue to flare up and impede progress in bilateral relations.
  - LOC – Indo-Pakistan border

○ LAC – Sino-Indian border

- **Geopolitical rivalries** – Growing geopolitical competition, *especially with China*, has complicated India's neighbourhood dynamics and impacted its ability to pursue an independent foreign policy.
- Power struggles and influence games in the region have often overshadowed efforts.
- **Economic gaps** – Big *disparities in economic development* between the neighbouring countries have affected the effectiveness of economic cooperation initiatives.
- Infrastructural deficits, trade barriers, and bureaucratic hurdles have prevented the full potential for regional economic integration from being realised.
- **Internal instability** – *Political instability, ethnic conflicts*, and governance challenges in neighbouring countries have been affecting closer cooperation and regional stability.
- Issues such as *cross-border terrorism and insurgencies* have also strained relations and undermined trust between India and its neighbours.
- **Limited progress in SAARC** – It has been affected by *bilateral tensions and a lack of consensus* on key issues between Pakistan and India.
- This has limited its effectiveness as a platform for regional cooperation and integration.

### What lies ahead?

- India should make the most of its *soft-power assets*, such as Bollywood, yoga, and traditional arts, to enhance its image and influence.
- Initiatives like the *International Solar Alliance* can be leveraged to promote renewable energy adoption and environmental sustainability in the region.
- A *no-strings-attached* Humanitarian Assistance and Disaster Relief (HADR) commitment will go a long way to building a positive and benign image.
- *Economic assistance* to our neighbours should continue unhindered even in the face of provocations as it only enhances our image as a 'friend in need'.
- By implementing these measures, the new government can reinvigorate India's Neighbourhood First policy and realise its vision of a peaceful, prosperous, and interconnected region.

## 10.3 G7 Summit

### Why in news?

Recently, Italy hosts the annual summit of leaders from the Group of Seven (G7) major democracies.

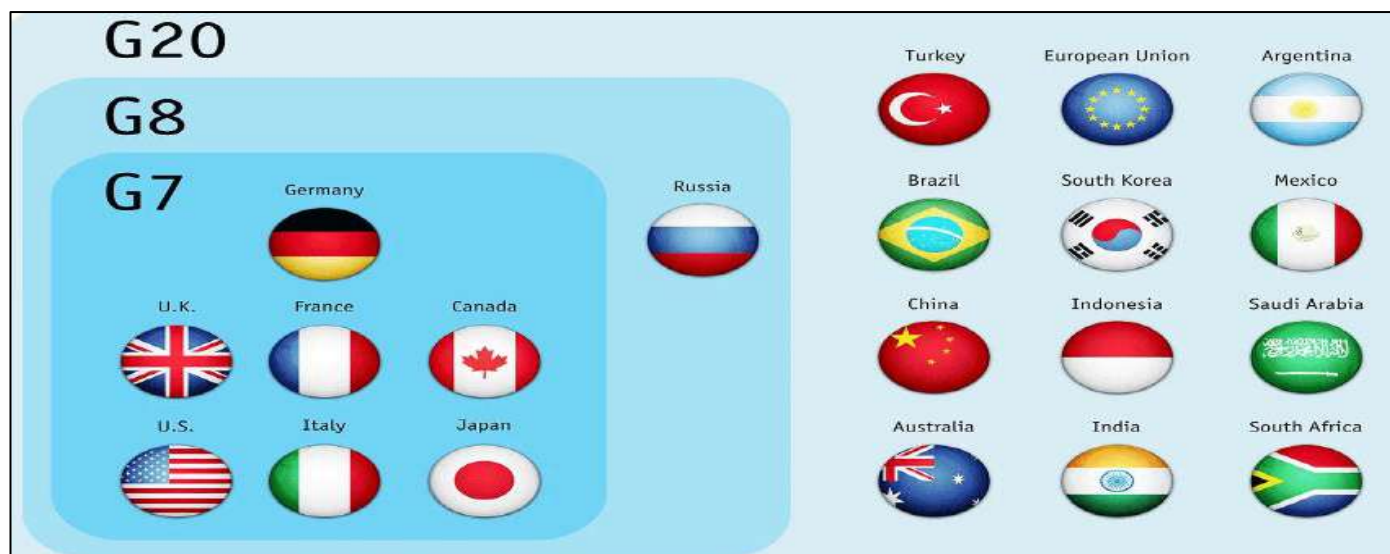
### What is the G7?

- **Background** – It was established in **1975**, as a platform for economic and financial cooperation in *response to the 1973 energy crisis*.
- It is an **informal group** of leading industrialized nations.
- **Membership** – Italy, Canada, France, Germany, Japan, the United Kingdom, and the United States of America.
- Canada is not a founding member, joined only in 1976.
- The *European Union also participates* in the Group and is represented at the summits by the President of the European Council and the President of the European Commission.
- **Administration** – It *lacks a permanent administrative structure*.
- **Presidency** – Each year, starting *from the 1st of January*, one of the Member takes over the leadership of the Group on a *rotating basis* it serves as a *temporary secretariat*.
- The *EU does not hold* the rotating presidency of the G7.

*G7 expanded into the G8 between 1997 and 2013, with the inclusion of Russia. However, Russia's participation was suspended in 2014 following the illegal annexation of Crimea.*

*In 2024, Italy assumed the Presidency for the seventh time in its history, succeeding Japan, and will hand it over to Canada in December 2024.*

- **Significance** – It is a group united by common values and principles, and plays an invaluable role on the international arena in upholding freedom, democracy and human rights.



### What is G7 Summit?

- **Organised by** – The Nation that is holding the Presidency.
- It hosts the Group work and the Leaders’ Summit.
- The Presidency plays a key role in setting the agenda and identifying key priorities.
- **Prepared by** – The Sherpas, who are personal representatives of the Heads of State and Government.
- Sherpas are responsible for overseeing the negotiations and drafting the Group’s final communiqué.
- **Participants** – It is attended by the Heads of State and Government of the seven Member States, representatives of the European Union, as well as States and International Organizations invited by the Presidency.
- **Summit outcome** – It concludes with the *adoption of a communiqué* outlining important political commitments.
- These communiqués have a significant influence on global governance and decision-making processes.

*The first G7 summit was held in 1975 in Rambouillet, France. And so called as Rambouillet summit.*

### Apulia G7 Summit

- It is a *G7 2024 summit*.
- **Location** – It is held in *Borgo Egnazia (Fasano) in Apulia in Italy*.
- **Agenda** – It includes *defending the “rules-based international system”* amid Russia’s aggression towards Ukraine Addressing the Middle East conflict.
- **Outcome** – Supporting Ukraine’s fight for freedom by unlocking *50 billion USD for Ukraine*.
- Calling for comprehensive *deal in Gaza* for release of hostages and for humanitarian assistance.
- Deepening *cooperation with partners in Africa* to contribute to global stability and prosperity.
- Standing with allies and partners in *Indo-Pacific* for increased connectivity between them and European partners.
- Promoting *economic reliance* and economic security.
- *Partnering with developing countries* to invest in their future
- Accelerating the *clean energy transition* to address climate change.
- Promoting health and food insecurity by launching the **Apulia Food Security initiative**.
- Investing in children to support Women’s economic participation.
- Endorsed a three-pronged approach to *address migration* issues.

- Deepening *cooperation with Artificial Intelligence*.

To know about the 2023 G7 Summit, [click here](#)

### Evaluate the effectiveness of G7?

- It is **relevant in the global arena** due to following significance.
- **Global reach** – Over the years, the G7 has evolved from an economic forum to a platform that addresses a range of global challenges such as trade, security and human rights, giving them enormous influence when they act in concert.
- **Shape international policies** – It has been instrumental in coordinating economic policies, promoting free and fair trade practices, shaping global governance issues, and supporting security cooperation and development assistance.
- **Influences world economy** – They are major trading partners, and even if their share of global trade has declined, they account for *about 50% of the world economy*.
- **Address climate change** – The 2015 summit paved the way for the *Paris agreement* to limit global carbon emissions, which was adopted later that year.
- **Enables cultural diplomacy** – They are also a showcase for cultural diplomacy, as each year's host country offers examples of the best of its cuisine.

However, it is under **severe criticism** due to the following

- **Fallen GDP** – The combined share of its members in global GDP has fallen that declined from roughly 50% in the 1970s to around 30% in 2018.
- **Lack of inclusion** – The economic growth of China, India and other emerging economies has led to calls for a more representative global governance structure.
- **Lack of cooperation** – There are also concerns about the G7's ability to achieve cooperation within the group.
  - At the 2019 summit, the then US President was often at odds with other G7 leaders and he skipped a meeting on climate issues.

### What lies ahead?

- *Make an inclusive outlook* and help in building a more comprehensive global consensus on some of the bigger challenges the world faces today.
- **Create G7+** – It would include a common euro-zone representative and make space for *China, India, and Brazil*, thereby better reflecting the current global economic landscape in terms of both GDP and population.

## 10.4 Outcomes of BRICS Foreign Ministers' Meet

### Why in news?

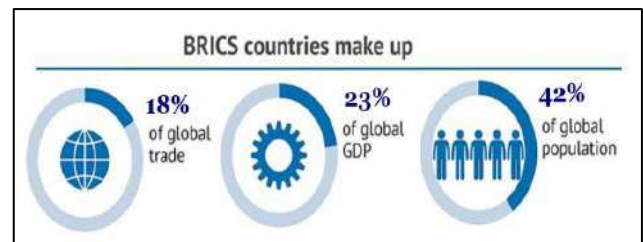
India welcomed the representatives of newly added members of BRICS at the BRICS Foreign Ministers Meeting that held at in Nizhny Novgorod, in western Russia.

### What is BRICS?

- Originally conceived as BRIC by Jim O'Neill, the grouping consisted of Brazil, Russia, India, and China.
- **Launch** – It was launched by a meeting of the Foreign Ministers of Brazil, Russia, India and China in **2006**.
- **Headquarters** – **Shanghai**, China.
- **Members** – As of June 2024, it has **10 members**.



- Brazil, Russia, India, China were the founding members and was called as BRIC, which got turned into **BRICS** **in 2010**, with the entry of South Africa.
  - Egypt, Iran, UAE, Saudi Arabia, and Ethiopia were formally joined as new members of BRICS on Jan 1, 2024.
- **First summit** – It was held in Yekaterinburg in 2009.
- **Presidency** – It is chaired by member countries in *rotational basis*.
- South Africa was the chair for 2023 while 2024 presidency is with Russia.
- **India** – India hosted the BRICS Summit in 2012, 2016 and 2021.



### What are the joint statements issued at BRICS Foreign Minister's meeting in 2024?

- 2024 BRICS Ministers of Foreign Affairs was hosted by Russia.
- The representatives from BRICS member nations have shown their commitment for global and regional welfare.
- **Commitment to strengthen BRICS Strategic partnership** – Under the **three pillars of cooperation** - politics and security, economy and finance, cultural and people-to-people exchanges.
- **Support for UN reforms** – They voiced their support for a comprehensive reform of the United Nations (UN), including its [Security Council \(UNSC\)](#), with a view to making it *more democratic, representative, effective* and efficient.
- **Reaffirmation on the importance of G20** – They assured that G20 as the premier forum for international economic cooperation and welcomed and supported the inclusion of the African Union as a member of the G20.
- **Commitment towards global peace** – They expressed concern over ongoing global conflicts and reiterated their commitment to *peaceful dispute resolution* through diplomacy, inclusive dialogue, and cooperation.
- They supported all efforts towards peaceful crisis settlements.
- **Expression of interests to resolve Israel-Palestine conflict** – They expressed grave concern over the worsening situation in the Occupied Palestinian Territory, especially the unprecedented violence in Gaza due to the Israeli military operation.
- They called for the effective *implementation of the UNSC resolution 2728* for an immediate, durable, and sustained ceasefire.
- **Emphasize on regional stability** – They emphasised the need for an urgent *peaceful settlement in Afghanistan* in order to strengthen regional security and stability.
- **Actions for Counter terrorism** – They reaffirmed that terrorism should not be linked to any religion, nationality, civilization, or ethnic group.
- They emphasized that all individuals involved in terrorist activities and their supporters must be held accountable and *prosecuted under international law*.
- **Global call for addressing climate change** – They also called on all parties to *fully implement* the United Nations Framework Convention on Climate Change (UNFCCC) and its *Paris Agreement*.
- **Strengthen global Supply chain** – They *opposed unilateral protectionist measures*, which deliberately disrupt the global supply and production chains and distort competition.
- **Ensure efficient trading system** – They voiced support for a *fair, inclusive, and rules-based global trading system* centered on the World Trade Organization (WTO).
- They emphasized the importance of special treatment for developing countries, including Least Developed Countries, as a fundamental principle of the WTO.
- **Promote Local currency** – They underscored the importance of the enhanced use of local currencies *in trade and financial transactions* between the BRICS countries.

UNSC Resolution 2728, adopted on in March 2024 demanded an immediate ceasefire for the month of Ramadan leading to a lasting sustainable ceasefire. It also demanded the immediate and unconditional release of all hostages.

- **Showing respect for international laws** – They were committed to *promote multilateralism, upholding international law, and the UN Charter*.
- They emphasized the UN's central role in fostering cooperation among sovereign states to maintain peace, advance sustainable development, and protect democracy, human rights, and fundamental freedoms.

### Elaborate the importance of BRICS?

#### Significance for the world

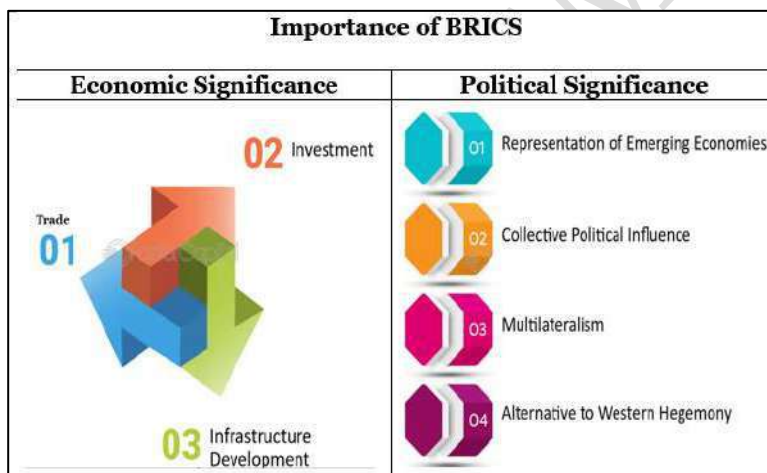
- **New world order** – It aims to assert their position particularly in relation to the United States and the European Union.
- **Multipolar global order** – It promotes *the recognition of a multipolar global order* with economic and political balance.
  - It aims to break away from organisations formed in the post-World War II era, such as the World Bank and the International Monetary Fund.

- **De-dollarization** – BRICS account for 18% of the world trade, supports the *increased use of members' national currencies* for trade and the introduction of a common payment system in the long term.

- **Global South** – It helps in representation from *voices of the 'Global South'*, a term used to refer to countries that have not traditionally been at the centre of international agenda-setting.

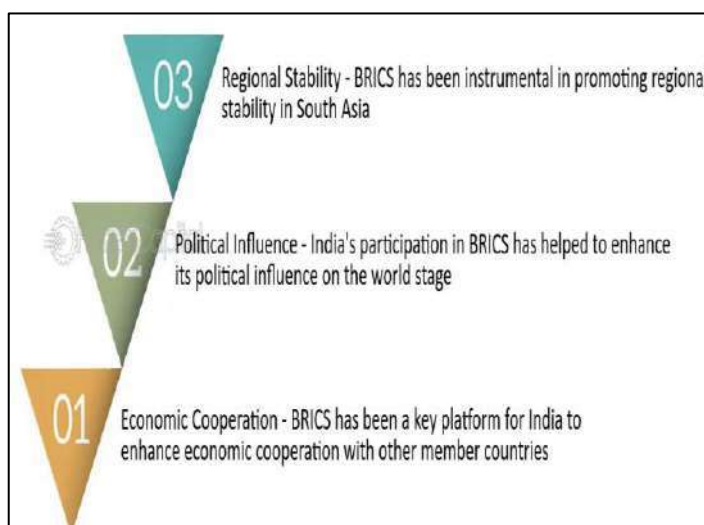
- **Economic rise** – In recent decades, India and China witness economic rise.

- **Financial structure** – *New Development Bank (NDB)*, the Shanghai-headquartered bank has since *invested \$30 billion* in infrastructure development projects.



#### Significance for India

- **Multi-alignment** – It is an issue-based alignment strategy, which aims to simultaneously participate and pursue its interests in multiple strategic and economic coalitions, such as the Quad and BRICS.
- **Reflect multidirectional foreign policy** – It strengthens economic prosperity, technology advancements, research and innovation, norm influencing, and strengthening security.
- **Diplomacy** – It allows India to pursue a *development focused diplomatic engagement* which aims at increasing the membership of BRICS.
- **Broader agenda** – Energy security, combating terrorism and climate change financing
- **Geopolitical force** – BRICS attempts to amplify non-traditional security threats and promote economic security within the forum.
- **Political push** – It would be a political push against unfair coercive practices:
  - European Union's Carbon border tax
  - Economic transaction
  - Unilateral sanction



## G.S PAPER III

## 11. ECONOMY

### 11.1 Women in Corporate roles

#### Why in news?

A recent report highlights that while there has been an increase in women joining the workforce, leadership positions still lack gender parity.

#### What are the key highlights of the report?

- **Title-** Women in Leadership in Corporate India
- **Released by-** LinkedIn and The Quantum Hub
- **Decline in workforce-** There has been an overall increase in the representation of women across the workforce to 26.8% in 2024 from 23.9% in 2016, but there has been a decline of 0.5% points between 2022 and 2024.
- **Senior leadership role-** The % of women in senior leadership roles has dipped to 18.3% in 2024 from 18.7% in 2023, after increasing from 16.6% in 2016, but it may go up by the end of the year.
- There is relatively **strong representation at the entry level at 28.7%** and senior independent contributor levels at 29.53%.
- **Significant drop-** There is a significant drop (18.59%) as women advance to managerial positions, followed by a continuous decline in women's representation in leadership positions, with 20.1% at director roles, 17.4% at vice president roles and 15.3% at C-suite positions.

#### Sector wise assessment

- **Highest representation-** Industries such as education (30%) and government administration (29%) of women in leadership roles.
- This is followed by administrative and support services and hospitals and health care, each 23%.
- **Moderate representation-** Sectors such as technology, information, and media and financial services each have 19% of women in leadership.
- **Lowest representation-** It is found in construction, oil, gas, mining and utilities, each with 11% women leaders, while wholesale and manufacturing have 12%, and accommodation and food services have 15%.
- **Overall improvements-** Some industries have seen overall improvements in the % of women leaders hired, such as consumer services, which experienced a significant increase to 37% in 2024 from 30% in 2016.

#### What are the major challenges faced by women in the workplace?

- **Gender bias-** Preconceived notions about gender roles can affect hiring, promotions, and performance evaluations.
- **Gender pay gap-** As per the International Labour (ILO) Organization, on average, women globally are paid about 20 per cent less than men.
- **Glass ceiling-** An invisible barrier that prevents women from reaching top executive positions.
- **Glass cliff-** Women are more likely to be placed in leadership roles during times of crisis or downturn, making these roles more precarious and high-risk.
- **Lack of flexible work option-** Insufficient support for flexible work arrangements can make it difficult for women to balance career and personal life.
- **Career gap-** Insufficient programs to help women transition back to work after a career break (pregnancy, childbirth, child care etc.,) can hinder their re-entry into the workforce.
- **Sexual harassment-** The MeToo movement brought to notice the horrifying episodes of sexual violence, harassment, and abuse across professional spheres.
- **Imposter syndrome-** It is a self-doubting tendency that leads an individual to feel skeptical and underserving of their accomplishments.

*A 2020 KPMG study revealed that almost 75% of female executives across industries have faced imposter syndrome.*

#### What should be done?

- **Equal pay advocacy-** Organizations and policymakers must prioritize advocating for equal pay, ensuring that women receive remuneration commensurate with their skills and contributions.
- **Strengthening legal enforcement-** While legislative frameworks exist, there's a need to reinforce their implementation to ensure swift and stringent action against perpetrators.
- **Promoting confidence building-** Mentorship programs, leadership training, and networking opportunities can play a crucial role in fostering self-assurance.
- **Boosting women's leadership-** It should be done in Indian businesses which is crucial for better outcomes.
- **Establishing standardized interview protocols-** Implementing standardized interview protocols that strictly prohibit invasive inquiries helps ensure a fair and respectful hiring process for everyone.

## 11.2 Inequality and Growth

### Why in news?

Recently, researchers from the Paris School of Economics have shown inequality in modern India to be greater than colonial times.

### What is the impact of inequality on democratic processes?

- **Disparity-** High levels of inequality reduce growth in relatively poor countries but encourage growth in richer countries.
- **Economic effect-** It can have negative effects on consumption, welfare, and growth. If done properly, wealth taxes and distribution can have positive effects.
- **Monopoly power-** Billionaires draw their wealth from monopoly. Thus, for any given level of money wages, real wages which determine purchasing power are lower in economies with strong monopolies.
- **Lower outputs-** The presence of monopolies can lead to lower real wages and lower levels of output and investment.
- **Greedflation-** A stark example is the cost-of-living crisis in developed economies, where "greedflation"—companies raising prices to boost profit margins amid supply and demand shocks—has exacerbated inflation.
- **High mark-up-** When companies apply higher mark-ups, they increase the final price that consumers pay.
- This can indeed lead to reduced purchasing power for workers, as their real wages (adjusted for inflation) may not keep pace with rising prices.
- **Weak expansion-** An unequal economy will put lesser incomes in the hands of those with a greater propensity to consume, leading to weaker expansion in the economy.
- **Lower job creation-** Redistribution might hurt job creation by lowering incentives for entrepreneurs to invest and create jobs in high-tax environments.

*Mark up refers to the difference between the cost of producing a product or service and its selling price.*

*Kuznets curve describes a U-shaped relationship between inequality and growth, inequality first increases and later decreases in the process of economic development.*

### How can redistribution be harmonized with economic growth?

- **Welfare opportunities-** Inequality is sometimes beneficial, since it acts as an incentive to entrepreneurs to start businesses, thereby increasing employment and welfare for others.
- **Multiplier effect-** When a company builds a new factory, it pays workers, who then spend their wages on goods, boosting sellers incomes. This cycle of spending and earning, known as the 'multiplier' effect, leads to a greater overall increase in income than the initial investment.
- **Unlocking Growth Potential-** Redistribution can boost growth despite reduced billionaire investment. It strengthens the multiplier effect by increasing purchasing power. Lower prices and higher wages from curbing monopolies further drive demand, encouraging business investment.
- **Piketty's Proposal-** Taxing billionaire wealth for basic income might lead to some leaving the economy, but it could foster new entrepreneurs.

### What should be done?

- For poor countries, the escape from poverty is made more difficult because rising per capita income induces more inequality, which retards growth in this range.

- For *rich countries*, rising per capita income tends to reduce inequality, which lowers growth in this range.
- While inequality can incentivize entrepreneurship, excessive inequality, particularly through monopolistic practices, hampers economic welfare and growth.
- Thoughtful redistribution policies, such as wealth taxes and curbing monopolistic powers, can mitigate these negative effects and promote a more equitable and robust economy.

### Quick Facts

#### Greedflation

- **About-** It is the exploitation of inflation by corporates to create excessive profits.
- It simply means (corporate) greed fuelled inflation.
- **Normal inflation-** The corporates go for the wage-price spiral, in Greedflation corporates choose the profit-price spiral.
- **Wage-price spiral** - A cyclical condition where the rise in wages leads to increased prices, resulting in inflation.
- **Profit-price spiral** - Companies exploit the existing inflation by putting up their prices way beyond just covering their increased costs.
- This is used to maximise their profit margins that, in turn, further fuelled inflation.
- **Occurrences-** Greedflation happens in two scenarios.
  - When the price mark-up is far in excess of the increase in inputs.
  - When businesses do not bring down the market prices even when the input prices fall.

### 11.3 Global Public Debt Crisis

#### Why in news?

The recent UN report highlights a historic peak in public debt, reaching \$97 trillion in 2023.

#### What is Public Debt?

- **Public debt** – It is the total amount, including total liabilities, *borrowed by the government of the country* to meet its development budget.
- The countries must pay back the principal and interest on the loans they take out.

#### Public Debt of India

- **In India** – It refers to *overall liabilities of central and state governments*, but the Union government clearly distinguishes its debt liabilities from the states.
- It has to be *paid from the Consolidated Fund of India*.
- **Sources of public debt** – They are dated government securities (G-Secs), treasury bills, external assistance, and short-term borrowings.
- Liabilities of the central government – It is classified into two categories - debt contracted against the Consolidated Fund of India, and public account.
- **Internal debt** – It constitutes *over 93%* of the overall public debt.
- Internal loans that make up for the bulk of public debt are further divided into two broad categories
  - *Marketable and non-marketable debt*.
- **Current status** – The Union government's liabilities account for a little *over 46% of India's GDP*.
- However, if the public debt is calculated as general government liabilities, which also includes the liabilities of states, this goes *up to 68% of the country's GDP*.

- **Borrowing sources** – From private capital markets, international financial institutions and from other countries.

- **Importance** – It can be a powerful *tool for development*, enabling governments to finance critical expenditures and invest in a better future for their people.

**What is status of global debt crisis?**

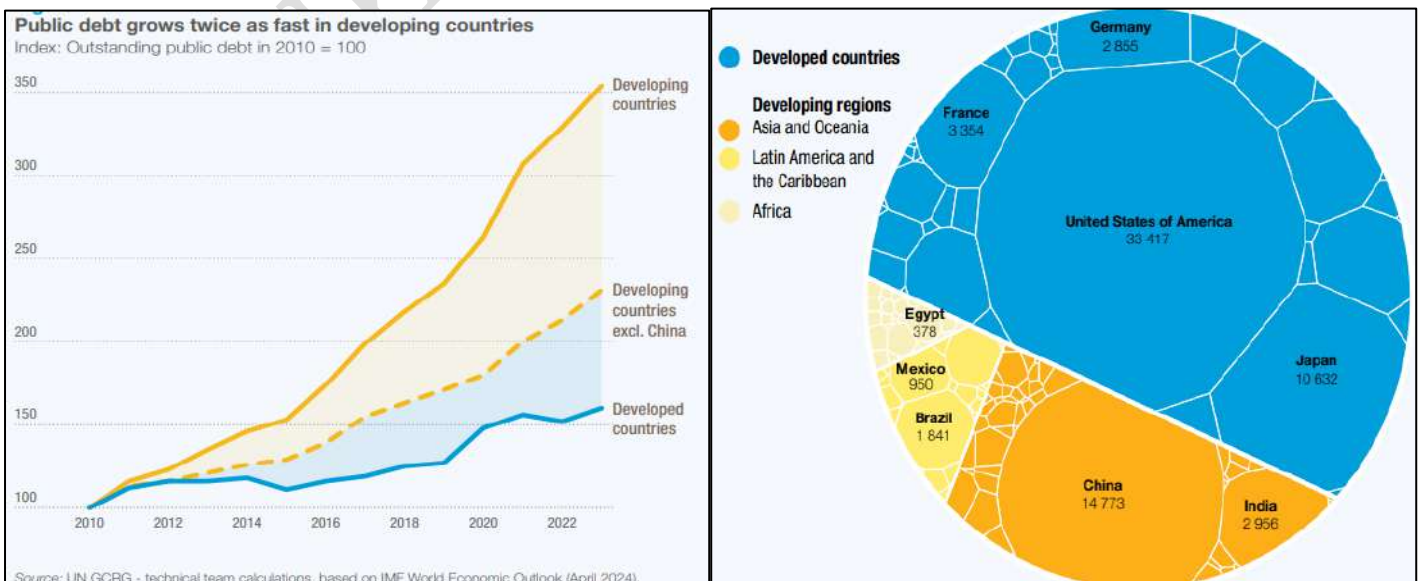
- **Public debt crisis** – When public debt grows excessively or rapidly, it becomes a heavy burden, particularly for developing countries.
- The recent report "**A World of Debt 2024: A Growing Burden to Global Prosperity**" explores the issues related to global public debt crisis.
- It was published *by UN Trade and Development (UNCTAD)*.

*According to the Reserve Bank of India Act, 1934, the RBI is both the banker and public debt manager for the government. It handles all the money, remittances, and foreign exchange and banking transactions. The Union government also deposits its cash balance with the RBI.*

**UN Trade and Development (UNCTAD)**

- It is the UN's leading institution dealing with trade and development.
- It is a part of UN Secretariat.
- **Membership** – *195 countries*, one of the largest in the UN system.
- **Functions** – It *supports developing countries* to access the benefits of a globalized economy more fairly and effectively.
- It provides *economic & trade analysis* and facilitate consensus-building.
- It offers *technical assistance* to help developing countries use trade, investment, finance and technology for inclusive and sustainable development

- **Key findings of the report** – Global public debt continues to increase rapidly, driven by cascading crises as well as the sluggish and uneven performance of the global economy.
- **Rising global debt** - In 2023, public debt, comprising domestic and external general government debt, *reached US\$ 97 trillion*, a US\$ 5.6 trillion increase from 2022.
- Of the total global debt, business debt stands at first followed by public debt and household debt respectively.
- **Status of developing countries** – They share 30% of the total global debt.
- **Higher interest payment** – In 2023, the amount the developing countries spent in interest payment *saw a 21% increase* over 2021 which is up to four times that of the US.
- Among them one out of every three countries spends more on interest payments than on these critical areas for human development.
- **Disparity among developing countries** – *Over three-quarters* of this debt is owed *by countries in Asia and Oceania*.



- Countries that have the least capacity to repay are also the ones serving loans the most.

- The global financial architecture is no longer capable of meeting the needs of the world in the twenty-first century.

### What are the major challenges of rising global debt?

- **Unmanageable level of debt:** While debt, or borrowing, is an established way to fund personal, institutional and national expenditures, it has reached an unmanageable level where borrowers divest much of the revenues to just serve debt, primarily in terms of interests.
- **Higher Individual debt** – It is high which can amount to about \$39,000 if we divide the total global debt by the total population that are about 8.1 billion.
- **Shortage of funding** – Serving loans is a key expenditure for many countries that keeps them away from development funding, like on health and education.
- **Lack of development** – Debt becomes a risk when the respective country doesn't have the capacity to repay.
- Such countries has to divert funds to just serve the debt while slashing budgets for development programmes.
- **Dearth of support** – The support to lessen debt among developing countries in terms of relief and other actions has also trickled from US\$4.1 billion in 2012 to US\$300 million in 2022.
- **Falling aid** – Aid has fallen in the last two years.
- The growing public debt for developing countries could be a direct fall out of the changing profile of development aid.
- Concessional loans are replacing aid thus also adding to developing countries' debt.
- **Non fulfillment of SDG goals** –As the countries are drowning in unprecedented levels of debts, it hinders the progress in achieving the Sustainable Development Goals (SDGs) targets by 2030.

### What lies ahead?

- The UN has outlined a roadmap to fast-track sustainable development in the SDG Stimulus package, focusing on three key areas:
  - Tackling the high cost of debt and rising risks of debt distress.
  - Massively scaling up affordable long-term financing for development.
  - Expanding contingency financing for countries in need.
- The effective participation of developing countries in the governance of global financial systems needs to be improved.

## 11.4 Annual Survey of Unincorporated Sector Enterprises (ASUSE)

### Why in news?

The key results of the Annual Survey of Unincorporated Sector Enterprises (ASUSE) for the reference periods 2021-22 and 2022-23 were released.

### What is ASUSE?

- **Basis** – It has been conceptualized by the National Sample Survey Office (NSSO) to provide data on all aspects of unincorporated non-agricultural enterprises to supplement the corporate sector data.
- **Published by** – National Statistics Office, Ministry of Statistics and Programme Implementation (MoSPI).
- It is an annual survey process since 2019-20 while previously it was conducted once every five years.
- **Objective** – It aims to providing data on economic and operational characteristics of unincorporated nonagricultural enterprises in manufacturing, trade and other services sectors (excluding construction).
- **Geographical coverage** – It covers the rural and urban areas of whole of India (except the villages in Andaman and Nicobar Islands, which are difficult to access).
- **Sector-wise coverage** – It captures unincorporated non-agricultural establishments belonging to three sectors viz., Manufacturing, Trade and Other Services.

An **incorporated entity**, like a limited liability partnership, joint venture, or a wholly owned subsidiary is considered a separate legal entity and has a more structured setup unlike unincorporated enterprises.

- **Ownership-wise coverage** – Unincorporated non-agricultural establishments pertaining to proprietorship, partnership (excluding Limited Liability Partnerships), Self-Help Groups (SHG), co-operatives, societies/trusts etc. have been covered in ASUSE.
- **Data collection** – *ASUSE 2021-22, the first full-fledged survey on ASUSE*, has been conducted in Pen-and-Paper Personal Interview (PAPI) mode.
- The ASUSE 2022-23 has been conducted in Computer Assisted Personal Interview (CAPI) mode.
- **Significance** – The data will help in the compilation of National Accounts Statistics and also to *gauge the demand-side employment scenario* in the sector.
- It will also help in *meeting the requirements of different Ministries*, such as the Ministry of Micro, Small and Medium Enterprises (MSME), Ministry of Textile, Ministry of Labour and Employment, etc.
- Additionally, this data is *essential for policymakers, researchers* and other stakeholders to better understand and support this crucial segment of the economy.

### What are the key highlights from recent ASUSE results?

- The recent results comprises two annual reports
  - ASUSE 2021-22 (survey period of April 2021 to March 2022)
  - ASUSE 2022-23 (survey period of October 2022 to September 2023).

Indicator	ASUSE 2021-22 (April, 2021 – March, 2022)	ASUSE 2022-23 (October, 2022 – September, 2023)
(1)	(2)	(3)
Number of Establishments (in '00)	5,97,027	6,50,484
Number of Workers (in '00)	9,78,879	10,96,260
Gross Value Added (Rs. Crore)*	13,40,046	15,42,409
Gross Value of Output (GVO)* (Rs.) per Establishment	3,98,304	4,63,389
GVA (Rs.) per establishment*(Rs.)	2,25,362	2,38,168
GVA per worker* (Rs.)	1,38,207	1,41,769

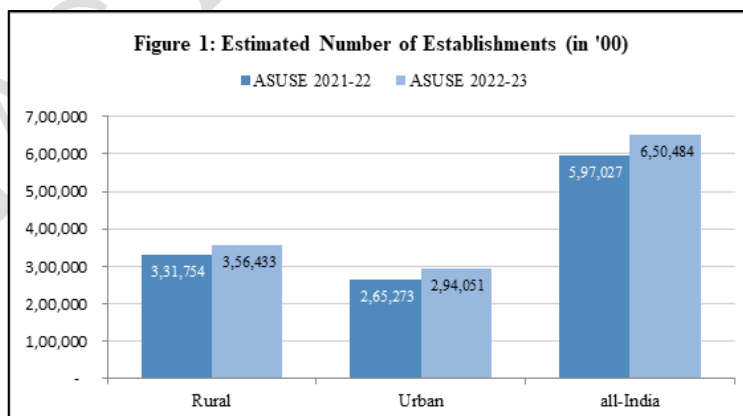
\*pertaining to market establishments<sup>3</sup>

- **Resilient growth of unincorporated sector** – The total number of establishments increased representing a *5.88% annual growth* from 2021-22 to 2022-23.

- The number of establishments in the *other services sector and manufacturing establishments increased*.

- While growth of other service sector implies a *robust sectoral expansion*, the growth of manufacturing establishments reflects a *gradual opening up* of the sector after the pandemic period.

- During the same period, the *Gross Value Added (GVA)* witnessed an *annual growth of 9.83%*, which is a key indicator of economic performance

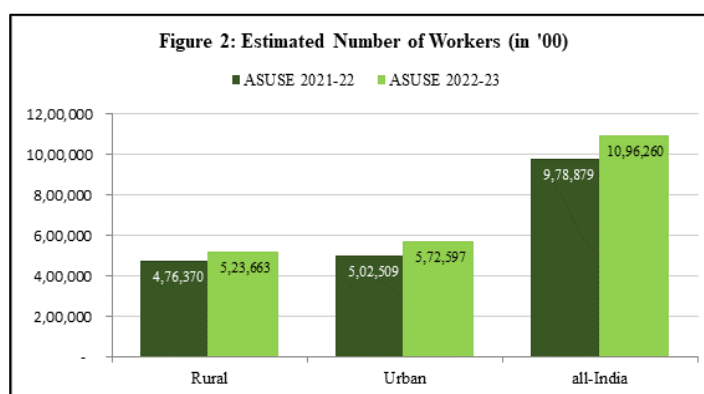


- The major contributors to this GVA growth may be attributed to *manufacturing and other service sectors*.

- **Expanding Labour Market** – The sector employed *about 11 crore workers in 2022-23*, up from 9.8 crore in 2021-22, showing a healthy labour market growth.

- This *7.84% annual growth* demonstrates the sector's capacity to generate employment.

- The maximum annual growth in employment during the period was observed in other services sector (13.42%) followed by the manufacturing sector (6.34%).



- Majority of the workers in the non-agricultural unincorporated sector are informal workers.

- The survey also shows that the *average annual earnings for informal workers rose*, reflecting an improved wage conditions in the informal sector.

- **Improved Productivity** – For the time period from 2021-22 to 2022-23, there is an increase in Gross Value Added (GVA) per worker and in the Gross Value of Output (GVO) per establishment.
- This indicates an increased productivity with more efficient use of resources including labour, which is critical for sustained economic growth and competitiveness.

*Gross Value Added (GVA) per worker is a measure of labour productivity of the sector.*

### What are the challenges associated with the published results?

- **Illogical context** – Financial year 2021 is not a normal year as it was hit by second wave of pandemic leading to shutdown of establishments and job losses.
- Comparing it with 2022-23 gives an exaggerated picture of growth because a large of establishments and workers had resumed business after pandemic.
- **Lack of real data** - Comparing ASUSE 2022-23 with ASUSE of 2015-16 shows the following observations
  - There is rise in the number of establishments by 2 million
  - There is fall of jobs by 1 million
  - There is fall of GVA share by 2.9%

Particulars	NSS 67th round (2010-11)	NSS 73rd Round (2015-16)	ASUSE (2021-22)	ASUSE (2022-23)
Number of establishments (million)	57.7	63.4	59.7	65.4
Number of workers (million)	108	111.3	97.9	109.6
% of hired workers establishments	15.4	15.8	14	15

- **Failure to capture the impacts of three shocks** – The Indian unincorporated sector was devastated by triple shocks
  - Demonetisation in November 2016
  - Unplanned GST implementation in July 2017
  - Strictest COVID-19 lockdowns announced at barely four hours' notice in March, 2020.
- These shocks clearly affected India's annual GDP growth rate – 8.3% in 2016, 6.8% in 2017, 6.5% in 2018 and 3.9% in 2019.
- This shows that India's GDP already slowed before COVID-19 even began, i.e. before the first wave of 2020.
- **Not an elaborate survey** – ASUSE 2021-22 and ASUSE 2022-23 does not give various elements as covered in 2015-16 survey like the
  - Distribution of establishments and workers as state-wise and gender-wise.
  - Availability of skilled manpower, waste management and toilets in each establishment.
  - Original investments in plant and machinery, enabling classification of those establishments as MSMEs and others.
- **Breach of data release regulation** – There is a clear practice by the government that any survey data will not be published during an election year or just before elections.
- But ASUSE 2021-22 and ASUSE 2022-23 were released just after the election results.
- Even data for the earlier two ASUSE rounds has not been released without explanation.
- **Increase of own account enterprises (OAEs)** - The increased number of establishments in 2022-23 did not result in increased number of workers, which possibly occurred due to increasing number of Own Account Enterprises (OAEs) in the sector.
- This predominance of OAEs is the underlying symptom of, and a reason for, widespread poverty and a distressed job market condition.

- Establishments which always have some hired workers have higher productivity than OAEs which also have restricted access to finance and more vulnerability to economic shocks.
- **The rural-urban divide** – 8% of the informal sector establishments in rural areas hiring at least one worker compared with 23% in urban areas.

### What lies ahead?

- There is a need for supportive policies to transform OAEs into more scalable and sustainable enterprises.
- The government should ensure in following standard protocols while releasing the public data.

## 12.AGRICULTURE

### 12.1 Direct Seeding of Rice

#### Why in news?

Recently, the Punjab government has been actively promoting the direct seeding of rice (DSR).

#### What is direct seeding of rice (DSR)?

- **Definition** – It is a planting method that involves *directly sowing of seeds* in the field.
- It requires *no nursery preparation or transplantation*.
- **Need of DSR** – The conventional transplanting method require intense labour, continuous flooding of water and takes higher time and labour resources.
- **Requirements** – Soil suitability is crucial for the successful implementation of DSR.
- **Soil texture** – DSR should be *avoided in light-textured soils* as they do not retain water well.
- It is more *suitable for heavy or medium-to-heavy-textured soils* which contains more clay and less sand, whereas light-textured soils have less clay and more sand.
- **Iron content** – Soil with severe iron deficiency, and weed problems must not be cultivated using this technique.
- Even medium-textured soils are unsuitable simply due to their lack of iron.
- In case iron supplements are being used, farmers should *apply ferric iron*, which is green-coloured and not oxidised, rather than oxidised iron, which is brown in colour.
- Lack of iron content can severely impact yields and lead to major financial losses for farmers.

#### Transplanting Method of Rice

- It is a planting method that involves the *planting of seedlings or whole plants in the field or garden*.
- **Requirement** – seed germination may occur inside the greenhouse.
- **Advantages** – Weed management is easier and it requires less amount of seeds.
- **Disadvantages** – *Slower maturation* of crops.
- It is *expensive* in comparing to DSR.
- It require *more usage of water* and thereby affecting the ground water table.

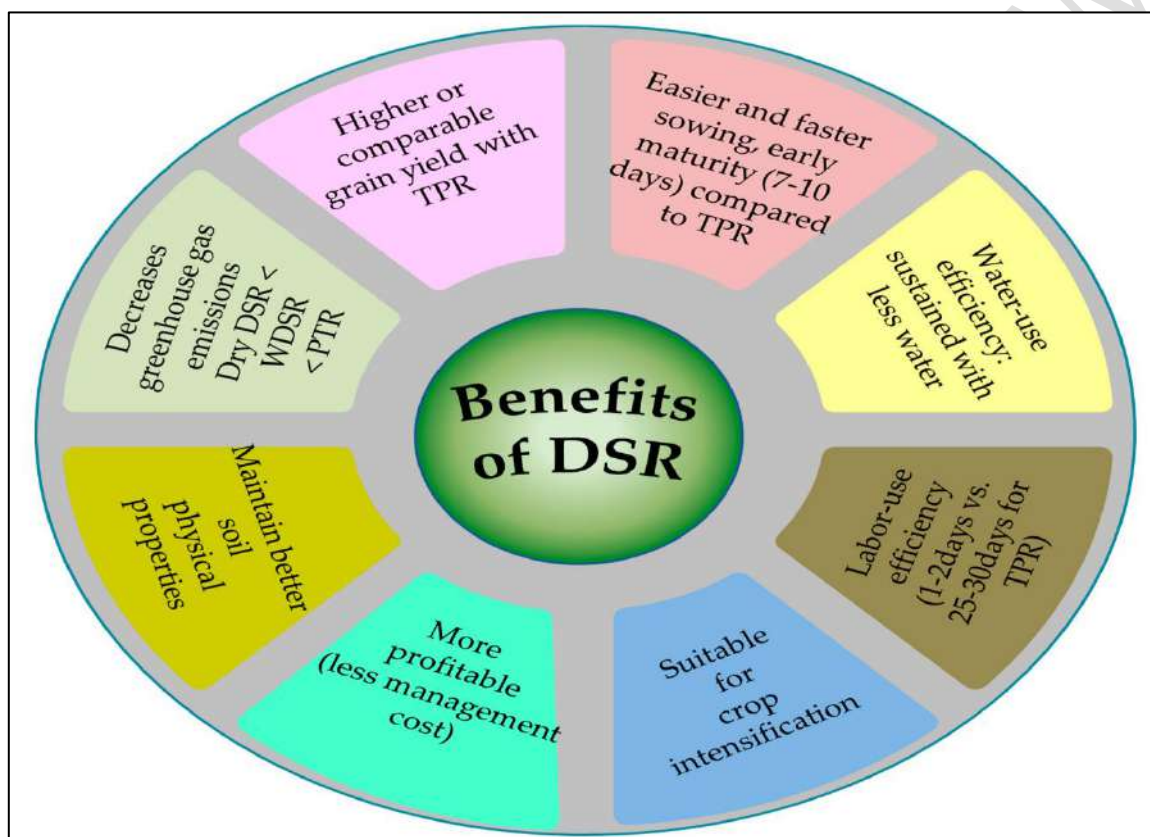
#### What is tar-wattar technique?

- **Sowing of seeds** – The paddy seeds are directly sown, roughly 20-30 days prior to when they would have been transplanted.
- **Soil levelling** – The field is irrigated and laser leveled prior to the seeding process which is carried out using a seed drill or lucky seeder.
- **Seed treatment** – The seeds soaked in a fungicide solution for eight hours, then dried for half a day before sowing.
- **Irrigation** – The first round of irrigation is carried out *21 days after sowing*, followed by 14-17 more rounds at 7-10 day intervals, depending on soil type and the quality of the monsoon.
- The final irrigation takes place 10 days before harvest.

- The *traditional method* requires 25-27 irrigations in total.

### What are benefits of DSR?

- **Saves water** - This can *reduce water use by 15% to 20%* (the traditional puddling method requires 3,600 to 4,125 litres of water to grow a single kilo of rice).
- **Saves labour** – DSR requires *less labour and matures 7 to 10 days faster*.
- **Ground water recharge** – DSR offers avenues for ground water recharge as it *prevent the development of hard crust* just beneath the plough layer due to puddled transplanting.
- **Straw management** – It *matures 7-10 days earlier* than puddle transplanted crop, therefore giving *more time for management of paddy straw*.
- **Higher yield** – Research results have also indicated that yield, after DSR, are *one to two quintals per acre higher* than puddled transplanted rice.



- **Environment benefits** – It leads to *lower GHG emissions*.
- **Labour welfare** – Mechanized DSR provides *employment opportunities* for youth through service provision business model
- *It increases total income* by reducing cost of cultivation.

### What are the major challenges associated with DSR?

- **Irrational use** – In the race to avail the government incentives, some farmers *use DSR in unsuitable soils*, leading to the need for irrigation every second or third day.
- This completely *counteracts the water-saving benefits* of DSR, and in fact, ends up guzzling down more water.
- **Less soil availability** – Only 20% of Punjab's soil is *light-textured*.
- **Lack of iron content** – It should not be cultivated in sandy and loamy sand as these soils suffer from severe iron deficiency, and there is higher weed problem in it.
- **Higher seed rates** – *Seed monopoly* automatically the price of seeds thereby reducing the income prospects for farmers.
- **Seeds exposed to birds and pests** – Direct seeding *increases the vulnerability of seed* to get targeted by the pests and birds.

- **Weed management** – There is higher growth of unsuitable plants in the DSR fields which compete the paddy crops and thereby reduce the yield.
- **Herbicide intolerance** – While herbicide needs to be sprayed to control the weeds, irrational use make the [crops intolerant to herbicide](#).

#### What lies ahead?

- **Awareness drive** – A basic lack of awareness and understanding is holding DSR back.
- Thus, awareness should be created for rational use of DSR.
- **Educating farmers** – Extensive training and a ready helpline be provided, to handhold the farmers through the whole process, from pre-sowing to harvesting.
- This can instill confidence among farmers regarding DSR's efficacy.

## 13. ENVIRONMENT

### 13.1 Green Energy in India

#### Why in news?

India's energy landscape needs to address the challenges posed by China's dominance in green energy materials is essential.

#### What is green energy?

- **About**- It is the energy that can be produced using a method, and from a source, that causes no harm to the natural environment.
- **Solar energy**- It is typically produced using photovoltaic cells, which capture sunlight and turn it into electricity.
- **Wind power**- The air flow on the earth's surface can be used to push turbines, with stronger winds producing more energy.
- **Hydropower**- It is generated by the Earth's water cycle, including evaporation, rainfall, tides and the force of water running through a dam.
- **Geothermal energy**- It uses thermal energy that has been stored just under the earth's crust.
- **Biofuel**- They are liquid fuels produced from *renewable* biological sources, including plants and algae.
- **Bioenergy**- It is produced from organic material, known as biomass, which contains carbon absorbed by plants through photosynthesis.

#### What are the steps taken by India to promote green energy?

- **National Green Hydrogen Mission**- It focuses on direct and indirect employment, import substitution, and R&D for higher efficiency in renewable energy technologies.
- **PM KUSUM scheme**-It is aimed at ensuring *energy security* for farmers in India, along with honouring India's commitment to increase the share of installed capacity of electric power from non-fossil-fuel sources to 40% by 2030 as part of Intended Nationally Determined Contributions (INDCs).
- **Investment**- India allows up to 100% Foreign Direct Investment under the *automatic route* for renewable energy generation and distribution project.
- **Production Linked Incentive (PLI)** - Scheme for high efficiency solar aims to enhance India's manufacturing capabilities and exports in the solar sector.
- **Green Energy Corridors**- It is established to create *intra-state transmission* system for renewable energy projects.
- **International Solar Alliance**- It is a joint effort by India and France to mobilize efforts against climate change through deployment of solar energy solutions with an aim of *One Sun, One World, One Grid*.
- **Green carbon credits**-It is proposed by India to create *carbon sinks* through people's participation.
- **Pradhan Mantri Suryodaya Yojana**- It was launched in 2024 to equip **1 crore** poor to middle-class households with rooftop solar panels in a bid to provide electricity from solar energy.

### How can India ensure energy security?

- **Integrate hydrocarbon PSEs-** Hydrocarbon Public Sector Enterprises like ONGC and Indian Oil are venturing into renewable energy sectors, this would prevent redundancy, optimize resource utilization and streamline efforts
- **Secure critical minerals-** Heavy reliance on China for critical technologies poses threat to national security hence India should ensure a stable and secure supply of essential minerals.
- **Balance clean energy competitiveness-** While prioritizing national security is essential, India must also consider the competitiveness of clean energy vis-a-vis fossil fuels.
- **Competitiveness of clean energy-** India should enhance domestic manufacturing capabilities and reduce dependency on imports.
- **Extend PLI scheme-** The Production Linked Incentive scheme needs to be extended to cover more segments of the renewable energy sector.
- **Protect domestic industries-** Implement tariffs and anti-dumping duties to protect domestic industries from unfair competition.
- **Promote local manufacturers-** Encourage public-private partnerships to build a robust local manufacturing ecosystem.
- **Foster private investment-** Mobilize private capital for sustainable energy projects and increase government funding for flagship renewable energy projects demonstrate feasibility and profitability.
- **Balance green transition-** Green transition needs to be balanced with economic growth and stability to ensure a smooth and balanced transition without adversely impacting the economy.
- **Form Inter-Ministerial Task Force-** This should be formed to oversee the implementation of the energy strategy, ensuring coordinated efforts across various government departments and agencies.
- **Periodic review-** Establish periodic review processes involving stakeholders from industry, academia, and civil society to assess progress and make necessary adjustments.
- **Holistic approach-** Engage the public and private sectors through awareness programs highlighting the benefits and opportunities of the green transition.

### 13.2 Nitrous Oxide (N<sub>2</sub>O) Emission

#### Why in news?

Recently, scientists have noted that N<sub>2</sub>O has higher potential to trap heat compared with CO<sub>2</sub>.

#### What do you understand by Nitrous oxide (N<sub>2</sub>O)?

- **Properties** – At room temperature, it is a colorless non-flammable gas, and has a slightly sweet scent and taste.
- **Applications** – It has significant medical uses, in surgery and dentistry, for its anesthetic and pain-reducing effects.
- It is used as a propellant, and has a variety of applications from rocketry to making whipped cream.
- **Emissions** – Agriculture is one of the main sources of N<sub>2</sub>O emissions.
- It is produced in the process of nitrification, consisting of the microbial conversion of ammonia to nitrate.
- The amount of N<sub>2</sub>O produced from the soil through the combined processes of nitrification and denitrification is profoundly influenced by temperature, moisture, carbon, nitrogen and oxygen contents.

*Nitrous oxide is also called as laughing gas due to the euphoric effects upon inhaling it, a property that has led to its recreational use as a dissociative anaesthetic.*

*Nitrification is a microbial process by which reduced nitrogen compounds (primarily ammonia) are sequentially oxidized to nitrite and nitrate.*

*Denitrification is the process that converts nitrate to nitrogen gas, thus removing bioavailable nitrogen and returning it to the atmosphere.*

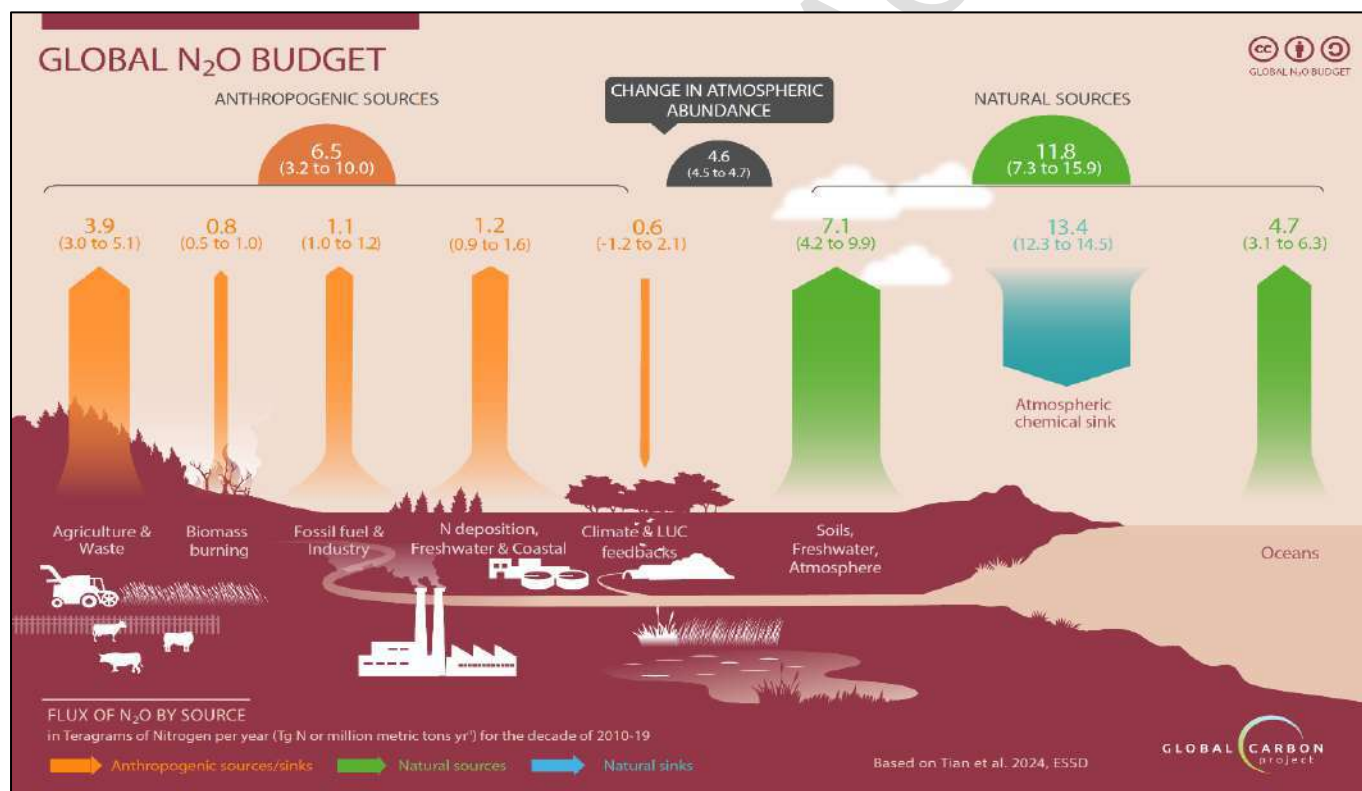
#### What is the current trend of N<sub>2</sub>O emissions?

- **Higher concentration** – Its concentration in the atmosphere reached 336 parts per billion in 2022 (25% above pre-industrial levels).

- **Accelerated emission** – Accumulation in the atmosphere has *accelerated in the last four decades*, with growth rates over the past three years (2020-2022) higher than any previous observed year since 1980.
- A total 10 million tonnes of N<sub>2</sub>O were released into the atmosphere between 1980 and 2020.
- **Rise in anthropogenic emission** – Global anthropogenic emissions increased *by 40% from 1980 to 2020*.
- **Major sources** – *Agricultural production contributed 74%* of the total anthropogenic N<sub>2</sub>O emissions in the last decade.
- *Soil N<sub>2</sub>O emissions are increasing* due to interactions between nitrogen inputs and global warming, constituting an emerging positive N<sub>2</sub>O-climate feedback.
- **Region-wise assessment** – In the *1980s, Europe made the largest contribution* to global anthropogenic N<sub>2</sub>O emissions followed by China and South Asia and the USA.
- From the 1980s to the 2010s, *Europe and Russia had the largest decline* in the share of anthropogenic N<sub>2</sub>O emissions, while *China and South Asia had the largest increase*.

**What are the major factors contributing to N<sub>2</sub>O emissions?**

Natural Sources	Anthropogenic Sources
<ul style="list-style-type: none"> <li>• Soils</li> <li>• Freshwater</li> <li>• Atmosphere</li> <li>• Oceans</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture and waste</li> <li>• Nitrogen deposition in freshwater and coastal areas.</li> <li>• Fossil fuels and industry</li> <li>• Biomass burning</li> </ul>



- **Soil pH** – *Alkaline pH* enhances the rates of both Nitrification and De-nitrification processes.
- In general, soil pH influences the *microbial population* and activity, which *directly impact N<sub>2</sub>O emission*.
- **Soil moisture** – *Moist soils enhance* N<sub>2</sub>O emission over long periods.
- **Temperature** – Bacterial populations increase with increasing temperature up to a certain range.
- **Soil Micro-Organisms** – The amount of soil organic carbon positively influences N<sub>2</sub>O production and emission.

*pH is a measure of how acidic/basic water is. The range goes from 0 - 14, with 7 being neutral. pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base.*

- Even *microbes in the oceans* releases N<sub>2</sub>O.
- **Other sources** – They are also naturally released from tropical rainforests and permafrost melting in the Arctic
- **Farming** – Increase in farming practices like fertilizer usages increase N<sub>2</sub>O emissions.
- Tillage disturbs the soil and increases CO<sub>2</sub> emission which release the organic carbon that favors microbial activities responsible for GHG emission.
- **Application of crop residues** – It provides a source of easily available Carbon and Nitrogen, henceforth, a potential source of N<sub>2</sub>O emission.
- **Nitrogen fertilizers** – After their application, they enter the soil, undergo diverse reactions resulting in leaching, immobilization and volatilization.
- **Non-agricultural human sources** – It includes industry processes, biomass and fossil fuel burning, and sewage (waste management).

#### What are the major challenges associated with N<sub>2</sub>O?

- **Higher lifespan** – Its lifetime is over 120 years, much longer than 12 year lifetime of methane, another gas 80 times more harmful than CO<sub>2</sub>.
- **Global warming potential** – N<sub>2</sub>O is the *third most important GHG* contributing to human-induced global warming, after carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>).
- It has *higher potential to trap heat* compared with CO<sub>2</sub> and its global warming potential is 300 times more than CO<sub>2</sub>.

**Greenhouse gases** (also known as GHGs) are gases in the earth's atmosphere that trap heat.

- **Human health** – Excess nitrogen leads to *soil, water and air pollution*, in turn affecting human health and wellbeing.
- **Ozone layer depletion** – Nitrous oxide has also been implicated in thinning the ozone layer.

#### What lies ahead?

- **Crop Residue Management** – The return of Crop Residue can serve as a source of carbon for microbial growth, stimulating the Nitrogen assimilation by micro-organisms.
- **Fertilizer management** – The containment of Nitrogen doses at the lowest non-limiting levels decreases the soil N availability and, consequently, the N<sub>2</sub>O emission.
- **Biochar Application** – It increases soil pH and drives N<sub>2</sub>O complete reduction to N<sub>2</sub>, thus curbing N<sub>2</sub>O emission.
  - *Biochar is a charcoal-like substance that's made by burning organic material from agricultural and forestry wastes.*
- **Applications of Lime** - It modifies soil pH to reduce the alkalinity of the soil.
- N<sub>2</sub>O emission decreases linearly with increased pH in a pH range of 4–7, irrespective of soil type.
- **Enable Nitrogen sink** – An improved inventory of sources and sinks will be required if progress is going to be made toward the objectives of the Paris Agreement.

### 13.3 Eco-Sensitive Zones of Western Ghats

#### Why in news?

Karnataka, Maharashtra and Goa seek shrinking of eco-sensitive areas in Western Ghats.

#### What are Eco-Sensitive Zones?

- **Conception** – The concept of ESZ was conceived during the XXI meeting of the Indian Board for Wildlife held in 2002, when the *Wildlife Conservation Strategy, 2002* was adopted.
- The *National Wildlife Action Plan (NWAP) (2002-2016)* indicated that 'Areas outside the protected area network are often vital ecological corridor links and must be protected to prevent isolation of fragments of biodiversity which will not survive in the long run.
- *National Environment Policy (2006) has defined* the ESZ.

- **Definition** – An areas/zones with *identified environmental resources* having incomparable values *which require special attention* for their conservation” because of its landscape, wildlife, biodiversity, historical and natural values.
- **Declaration** – They are *declared by the Ministry of Environment, Forest and Climate Change (MoEFCC)* as per the Environment (Protection) Act, 1986.
- **Coverage** – The lands falling **within 10kms of the boundaries** of national parks and sanctuaries should be notified as eco-fragile zones under the Environment (Protection) Act, 1986.
- While the 10-km rule is implemented as a general principle, the extent of its application can vary.
- Areas *beyond 10-km can also be notified* by the Union government as ESZs, if they hold larger ecologically important *“sensitive corridors.”*
- **Purpose** – *Protect environment* and *avoid its degradation* due to anthropogenic activities.
- Create some kind of barrier/ *shock absorber for the specialized ecosystem* (PAs).
- Act as *transition zone* from areas of higher protection to areas involving lesser protection.
- **Objective** – To maintain the response level of an ecosystem within the permissible limits w.r.t environmental parameters.
- To notify the area as an Eco- sensitive zone and to *regulate the developmental activities* in a sustainable manner taking into consideration the needs and aspiration of the local people.
- **Salient features of ESZ** – The ESZ Notification captures the following features:
  - Brief on the Protected Area
  - Area of ESZ and Extent of ESZ (Minimum and Maximum)
  - Available Flora, Fauna [Including Endemic, Rare, Endangered and Threaten (RET) species]
  - Boundary Description of ESZ
  - Maps of the ESZ
  - Geo-coordinates of prominent locations of PA and ESZ along with Shape/ KML files
  - List of villages along with Geo-co-ordinates
  - General guideline on Zonal Master Plan
  - Measures to be taken by the State Government

**A TO Z OF THE ESZ**  
The laws and guidelines that govern Ecologically Sensitive Zones (ESZs)

**ESZs** are notified around protected areas by the Centre on the basis of surveys done by states, to provide a buffer against development activities

**106** National Parks | **567** Wildlife Sanctuaries

The Wildlife Conservation Strategy, 2002, provides for a **10-km-wide ESZ**, but the actual extent varies, depending on local factors

**THE 2011 GUIDELINES**  
Three types of activities

**PERMITTED** (like farming) | **PROHIBITED** (like mining)

**REGULATED** (like construction of hotels and road-widening)

**June 3, 2022**  
The Supreme Court mandates a **minimum 1-km ESZ** around all protected areas; imposes construction freeze

**April 26, 2023:** The SC exempts **659 ESZs** for which the Centre has issued notifications or received proposals. But ban on mining up to 1 km stays even if the ESZ is marked at the zero line

- Prohibited and Regulated Activities along with Promoted Activities
- Details of Monitoring Committee
- It does **not involve displacement and evacuation** of farmers/people living in the villages.

### What are the Prohibited, Regulated and Permitted activities in ESZs?

### Prohibited activities

- Commercial mining, but it will not prohibit the digging of earth for construction for repair of houses and for manufacture of country tiles or bricks for personal consumption.
- Setting of saw mills
- Setting of industries causing pollution (water, air, soil, noise etc)
- Commercial use of firewood
- Establishment of major hydroelectric projects
- Use or production of any hazardous substances
- Undertaking activities related to tourism like over-flying the National Park area by any aircraft, hot-air balloons
- Discharge of effluent and solid waste in natural water bodies or terrestrial area.

### Regulated activities

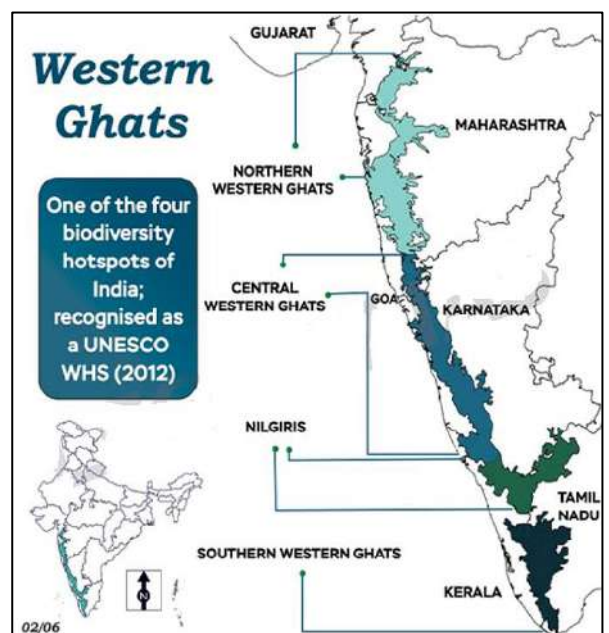
- Felling of trees
- Establishment of hotels
- Drastic change of agriculture systems
- Commercial use of natural water resources including ground water harvesting
- Erection of electrical cables be regulated while underground cabling should be promoted
- Fencing of premises of hotels and lodges
- Use of polythene bags by shopkeepers
- Widening of roads should be done with proper EIA and mitigation measures
- Movement of vehicular traffic at night for commercial purpose
- Introduction of exotic species
- Protection of hill slopes and river banks
- Air and vehicular pollution
- Sign boards & hoardings.

### Permitted activities

- Ongoing agriculture and horticulture practices by local communities.
- However, excessive expansion of some of these activities should be regulated as per the master plan.
- Rain water harvesting
- Organic farming
- Use of renewable energy sources
- Adoption of green technology

### Why Western Ghats is important?

- **Western Ghats** – They are mountain ranges that runs parallel to the western coast of the Indian peninsula, located entirely in India.
- **Coverage** – It extends along six states of India.
- They are Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
- **Biodiversity** – It has over 7,402 species of flowering plants, 1,814 species of non-flowering plants, 139 mammal species, 508 bird species, 179 amphibian species, 6,000 insects species and 290 freshwater fish species.



- **Measures** – Gadgil and Kasturirangan committee were appointed to identify the areas that needed to be kept out from such activities.
- **The Kasturirangan panel** – It had identified **37% of the Western Ghats as ecologically sensitive** and recommended prohibition or regulation of certain activities.
- **Gadgil Commission** - The Western Ghats Ecology Expert Panel (WGEEP) also known as the Gadgil Commission has designated the **entire hill range as an ESA.**
- **Recognition** – It is a **UNESCO World Heritage Site** and is one of the eight "**hot-spots**" of biological diversity in the world.

#### What are the major concerns in declaring ESZs?

- **Development Restrictions** – Limits on construction, infrastructure projects, and industrial activities can hinder economic growth and development in the region.
- **Livelihood Impact** – Restrictions can affect local communities, particularly those dependent on land and natural resources for their livelihoods, such as agriculture, forestry, and mining.
- **Property Rights** – Landowners may face limitations on how they can use or develop their property, potentially leading to conflicts and disputes.
- **Economic Loss** – Potential loss of revenue for state and local governments due to reduced industrial and commercial activities.
- **Implementation Challenges** – Ensuring effective enforcement of ESA regulations can be difficult, requiring substantial resources and coordination among various government agencies.
- **Balancing Conservation and Development** – Finding a middle ground that protects the environment while allowing for necessary development is often challenging.

#### What lies ahead?

- **Implement a zoning system** – Designates specific areas for conservation, sustainable agriculture, limited development, and urbanization.
- This helps in managing human activities while protecting critical ecosystems.
- **Involve community participation** – They should be allowed to participate in conservation planning and decision-making.
- Empower them with knowledge and resources to manage natural resources sustainably.
- **Promote economic diversification** – This will reduce dependency on activities of local communities that harm the environment.
- Develop alternative livelihood opportunities, such as eco-tourism, agroforestry, and handicrafts.
- **Strengthen the legal and policy framework** – Enforce existing environmental laws and regulations, and update them to address emerging challenges.

## 14. SCIENCE & TECHNOLOGY

### 14.1 Nuclear Techniques in Global Food Standards

#### Why in news?

Recently in International Symposium on Food Safety and Control the Director-General of FAO underscores the importance of nuclear technologies for measuring, managing and controlling food safety.

#### International Symposium on Food Safety and Control 2024

- **Host-** IAEA headquarters at Vienna in Austria.
- **Organized by-** Food and Agriculture Organization and the International Atomic Energy Agency (IAEA) through the Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture.

- **Purpose-** To bring together experts and stakeholders in food safety and food control systems to consider the protection of the integrity of the food supply chain and measures to improve its resilience to food security challenge.
- **Forum-** The event will provide a forum for networking, facilitate a broad understanding of food safety and food control systems, and promote the peaceful use of nuclear technologies.

### What is Food control system?

- **About-** It underpins food safety and quality, which are vital components of food security and are both necessary to safeguard international trade in food commodities.
- **Need-** It plays a critical role in protecting public health, ensuring fair trade practices, and fostering consumer confidence in the food supply.
- **Disruptive effects-** They are under increasing pressure due to pandemics, food-borne diseases, and conflicts affecting food production, distribution, and supply chains.
- **Climate change-** It alters the weather pattern and creates condition that promote the growth of microbes and pests, this leads to increased food contamination, illness, wastage and losses.

### What is nuclear technique?

- Nuclear technologies are very important tools for **measuring, managing, and controlling food safety.**

Stable isotope	What can be determined?	What food fraud can be identified?	What products can be affected?
Carbon	Photosynthesis (C3, C4 and CAM pathways)	Adulteration (e.g. sweetening with cheap sugar)	 Honey  Liquor  Wine  Olive oil  Butter
Hydrogen	Local-regional rainfall and geographical area	Watering of beverages; origin of product	 Coffee  Liquor  Wine  Water  Sugar  Meat
Nitrogen	Fertilizer assimilation by plants	Mislabelling (Organic and non-organic)	 Vegetables  Meat
Oxygen	Local-regional rainfall and geographical area	Watering of beverages; origin of product	 Coffee  Liquor  Wine  Water  Sugar  Meat
Sulfur	Local soil conditions; proximity to shoreline	Origin of product	 Vegetables  Meat  Honey

- It plays an important role in **analytical laboratory services** as many of the separation, identification, and quantification methods rely on a nuclear related phenomenon.

Nuclear techniques	Benefits
Isotope analysis	To characterize the origin of food
Nuclear spin	It is used in nuclear magnetic resonance.
Ionization	Mass spectrometry
Mass spectrometric separation	It is based on the mass differences of nuclei.

### What is the significance of nuclear technique in global food standard?

- **Food safety**- Nuclear techniques are often used in conjunction with complementary, non-nuclear methods to provide powerful solutions to food safety and control problems.
- **Useful in food processing techniques**- Pre-packaged fresh produce is exposed to controlled ionizing radiation to prevent pests, ensure quality, prevent illness, reduce losses, and extend shelf life.
- **One Health approach**- This method can also help contribute in the framework of global initiatives such as 'One Health'. (Holistic approaches to human, animal and environmental health.)
- **Antimicrobial resistance**- It has a role in helping address issues such as antimicrobial resistance and mitigation of the effects of climate change on the food supply.
- **Food authenticity**- Field-deployable methods to check food authenticity at the point of contact and promotion of food authenticity for food safety and to improve nutrition.
- **Food and phytosanitary irradiation**- Food irradiation to maintain and extend food quality, minimize pathogens in food and food packaging.
- **Detect chemical residues**- It helps in detection and control of chemical residues and contaminants in food and feed to protect human and animal health.
- **Emergency responses**- They are used to speed up the natural process of plant mutation to develop crops that better withstand diseases and climatic shifts.
- **Combat hunger**- It offers competitive and unique solutions to combat hunger, reduce malnutrition, enhancing environmental sustainability.
- **Tracing pathogens**- It can assess nutrient use and water use in soil, diagnose and characterize disease pathogens in animals, trace sources of contamination in water and study various forms of malnutrition.

#### What lies ahead?

- **Awareness generation**- Integrating nuclear techniques into food control systems requires promoting their benefits, fostering dialogue, and ensuring good communication among research centers, academia, regulatory bodies, and industry.
- **Safety concerns**- There is a need to address food safety and quality requirements for market access.
- **Four betters**- We must strive to help all member countries achieve the "four betters" – better production, better nutrition, a better environment and a better life for all.
- **Atoms4Food initiative**- It was launched by the IAEA and FAO to support countries in using innovative nuclear techniques in enhancing agricultural productivity, reducing food losses, ensuring food safety, improving nutrition and adapting to the challenges of climate change.

#### Quick facts

##### Food and Agricultural Organization (FAO)

- **About**- It is a **specialized agency of the United Nations** that leads international efforts to **defeat hunger**.
- **Established year**- 1945.
- **Headquarters**- Rome, Italy
- **Goal**- To achieve food security for all and make sure that people have regular access to enough high-quality food to lead active, healthy lives.
- **Membership**- **195 members** including the European Union
- **India**- It is one of the founding member of FAO.
- **Codex Alimentarius Commission**- It is created by WHO and FAO in 1961 to develop food standards, guidelines and texts such as codes of practice under the Joint FAO/WHO Food Standards Programme.
- **Publications**- The State of Food and Agriculture, The State of Food Security and Nutrition in the World, The State of World's Forests, The State of Fisheries and Aquaculture etc.,

#### 14.2 Global Principles for Information Integrity

##### Why in news?

The United Nations Secretary-General recently unveiled the Global Principles for Information Integrity.

### What is information integrity?

- **Information integrity** – It entails a pluralistic information space that champions human rights, peaceful societies and a sustainable future.
- It holds within it the promise of a digital age that fosters trust, knowledge and individual choice for all.
- **Importance** – It empowers people to exercise their right to seek, receive and impart information and ideas of all kinds and to hold opinions without interference.
- In an increasingly complex digital information environment, this means enabling individuals to navigate information spaces safely with privacy and freedom.
- **Impact of technology** – It have in many ways raised ambitions for the integrity of the information ecosystem.
- It ensures that freedom of expression is fully enjoyed by providing accurate, reliable information, free from discrimination and hate.
- **Threats** – While these advances have enabled the mass dissemination of information, they have also facilitated the spread of misinformation, disinformation and hate speech risking the integrity of the information ecosystem.
- The erosion of information integrity can undermine people's ability to exercise human rights and can hamper efforts to achieve peace, prosperity and a livable future on our planet.
- It can worsen the progress in achieving the Sustainable Development Goals (SDGs), in particular for countries in the global South.
- Groups in situations of vulnerability and marginalization are disproportionately affected.
- Efforts to exploit the information space to undermine climate action further highlight the urgency of the challenge.
- Public figures like activists, scientists and broadcasters have become targets of hate speech, threats and harassment.

### What are the challenges in tackling Hate speech/ Misinformation?

- **Volume and Speed** – The rapid spread of information online means that harmful content can go viral before it is identified and removed.
- **Anonymity and pseudonymity** – Users can easily create anonymous or pseudonymous accounts, making it challenging to hold individuals accountable for spreading hate speech or misinformation.
- **Legal and Regulatory Gaps** – The need to balance free speech with the regulation of harmful content poses legal and ethical dilemmas.
- **Technological Limitations** – The constant evolution of technology and tactics used by malicious actors requires continuous updates and improvements to monitoring tools.
- **Diverse Linguistic and Cultural Contexts** - India's linguistic and cultural diversity makes it difficult to develop and implement a one-size-fits-all approach to detecting and combating hate speech and misinformation.
- **Resource Constraints** – Law enforcement and regulatory agencies may lack the necessary resources, training, and expertise to effectively tackle online hate speech and misinformation.
- **International Dimensions** – Misinformation and hate speech can originate from outside India's borders, complicating efforts to address these issues solely at the national level.
- **Privacy Concerns** – Measures to track and monitor online content can raise privacy concerns, leading to debates about the appropriate balance between security and individual privacy rights.

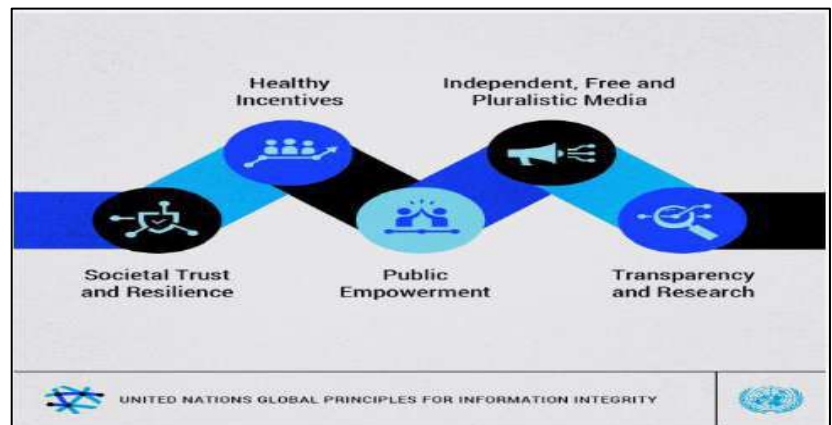
### What is UN's Global Principles for Information Integrity?

- **Background** – It was initiated in the 2021 UN report Our Common Agenda, which envisioned future global cooperation and multilateral action.
- **Guidelines** – It offers a holistic framework to guide multi-stakeholder action for a healthier information ecosystem.
- **Objectives** – To address the escalating threats posed by misinformation, disinformation, and hate speech in the digital realm.

- To *create healthier and safer information environments* that uphold human rights and promote peaceful societies and a sustainable future.

- **Framework** – It consists of **five principles** for strengthening information integrity, each of which include recommendations for key stakeholder groups.

- Societal Trust and Resilience
- Healthy Incentives
- Public empowerment
- Independent, free and pluralistic media
- Transparency and Research



### What are its key recommendations?

- **Combating disinformation and hate speech** – All stakeholders, including governments, tech companies, advertisers, and media, should *avoid using, supporting, or amplifying disinformation and hate speech* for any purpose.
- **Promoting media freedom** – Governments should ensure timely access to information, maintain a free, viable, independent, and plural media landscape, and *provide strong protections for journalists, researchers, and civil society*.
- **Enhancing Tech Company responsibilities** – Technology companies *should incorporate safety and privacy* by design in all products, apply policies consistently across countries and languages and to protect groups often targeted online.
- Additionally, they should *prioritise crisis response* and support information integrity during elections.
- **Ethical AI development** – AI developers need to ensure AI applications are designed, deployed, and used ethically and safely, *upholding human rights*.
- **Reforming business models** – Implement business models that do not rely on programmatic advertising and prioritise human rights, privacy, and safety.
- *Users should have greater control* over their online experiences and personal data.
- **Transparency in advertising** – This will ensure their budgets do not inadvertently fund disinformation or hate and do not undermine human rights.
- **Data transparency and accountability** – Tech companies and AI developers should ensure meaningful transparency allowing access to data while respecting user privacy, commission independent audits, and co-develop accountability frameworks.
- **Protecting children** – Special measures should be taken to protect and empower children, with governments providing resources for parents, guardians, and educators.

### Measures by India in tackling Hate Speech/ Misinformation

- **Information Technology (IT) Act, 2000** – *Sections 66A and 69A* deal with offensive messages and blocking of websites in the interest of national security and public order.
- **Indian Penal Code (IPC)** – *Sections 153A, 153B, 295A, and 505* address various forms of hate speech, promoting enmity between different groups, and incitement to violence.
- **POCSO Act** – It addresses the spread of child sexual abuse material, which is often linked with misinformation and hate speech.
- **Guidelines for Intermediaries and Digital Media Ethics Code, 2021** – These guidelines require social media platforms and digital news publishers to follow certain regulations to curb the spread of misinformation and hate speech.
- **Fact-Checking Units** – The Press Information Bureau (PIB) and other government agencies have established fact-checking units to verify and counter false information.

- **Collaboration with Social Media Platforms** - The government collaborates with social media companies to flag and remove harmful content.
- Platforms are required to appoint grievance officers to address complaints about hate speech and misinformation.
- **Public Awareness Campaigns** – Initiatives like the “#ThinkBeforeYouShare” campaign aim to promote responsible online behavior.
- **Technological Interventions** - Use of artificial intelligence and machine learning by various agencies to detect and remove hate speech and misinformation online.
- **Law Enforcement Actions** – Establishment of cybercrime units within police departments to track and act against online hate speech and misinformation.
- **International Cooperation** – Collaboration with international organizations and other countries to tackle cross-border hate speech and misinformation.
- **Judicial Interventions** – It has taken a proactive role in cases involving hate speech and misinformation, issuing directives to the government and tech companies to take stringent action.

## 15. INTERNAL SECURITY

### 15.1 National Security Doctrine

#### Why in news?

Recently, the Chief of Defence Staff (CDS) made a comment about the formulation of a National Security Strategy (NSS).

#### What is a National Security Strategy?

- **NSS** – National Security Strategy is a document that ***outlines the country’s security objectives***, and the ways of adopting them.
- Updated periodically, it *defines traditional, non-traditional threats and opportunities*.
- It also *introduces accountability of agencies* tasked with the implementation of such responsibilities.
- **National level doctrines** – These are formulated and approved at the highest echelons of government.
  - For example: The Nuclear Doctrine
- **Lower doctrines** - These are formulated at the military-strategic, operational, and tactical levels for different levels of war-fighting (in the military) or tackling internal disorder (for police/ paramilitary forces).

Doctrine	Strategy
Doctrine is a set of established or agreed principles that guide actions.	Strategy is a plan of action that emanates from doctrine.
Normally it <i>precedes a strategy</i> .	Normally, it is devised after a doctrine.
They are <i>more permanent</i> .	Relativeky less permanent in nature.
They must be reviewed periodically	With every update in doctrine, the strategy must be reviewed.

#### Why do India need NSS?

- **Worrying status of defence planning** – The *new formats* of the Integrated Capability Plan (10 years) and Defence Capability Acquisition Plan (5 years) *are yet to stabilise*.
- The present system of *reviews* by the Parliamentary Standing Committee and Auditor General *are sub-optimal*.
- There is *lack of operational clarity* and ease of *decision making*.

- While theatre responses during the Doklam crisis were commendable, *strategic guidance was vague and unclear*.
- The system suffers from *over-centralisation*.
- There is also a larger issue of the role of the multiple institutions that are dealing with national defence.
  - National Security Council
  - Chief of Defence Staff
  - Chiefs of Staff Committee
- **Recommendations for NSS** – Various committees have had recommended security strategies on similar lines.
- **Subrahmanyam Committee Report (1979)** – It emphasized the need for credible minimum deterrence and an integrated approach to national security.
- **Kargil Review Committee Report (2000)** – It recommended comprehensive national security reforms post-Kargil conflict.
- **Naresh Chandra Task Force (2012)** – It highlighted the need for a formal NSS to guide security reforms.
- **Steps taken by India** – An apex-level *Defence Planning Committee* chaired by the National Security Advisor was set up in *2018 to formulate the NSS* and National Defence Strategy.
- The Cabinet Committee on Security (CCS) would accord final approval.
- However, the *status and progress of the much-publicised exercise are not known*.

#### What are the importance of developing NSS?

- **Comprehensive threat assessment** – An NSS would provide a systematic approach to identifying and addressing internal and external threats, ranging from terrorism and cyber-attacks to border conflicts and climate change.
- **Policy coherence** – It would ensure that various *security policies and actions are aligned*, avoiding duplication and ensuring that all arms of government work towards common objectives.
- **Efficient resource allocation** – An NSS would help *prioritize and allocate resources efficiently*, ensuring that the most critical security needs are addressed with adequate funding and attention.
- **Clear strategies and priorities** – It would offer clear guidance and objectives for India's defense and security agencies, fostering a *unified direction in safeguarding national interests*.
- **International Credibility** – Having a documented strategy enhances India's credibility on the global stage, demonstrating a *proactive and organized approach* to national and regional security.
- **Increases public awareness and support** – An NSS can increase public understanding and support for national security measures, fostering a sense of shared responsibility and resilience.
- **Enhance inter-Governmental Coordination** – It would enhance coordination between different government departments and agencies, ensuring a holistic approach to security issues.
- **Promote national growth** – A well-crafted NSS would foster a *“whole of nation” approach* and build synergy for *harnessing comprehensive national power* (CNP).
- It would also enable the setting of milestones for capability-building for *modernisation, infrastructure and the Atma Nirbhar mission*.

*The US, the UK and Russia have published national security strategies. India's neighbor's like China and Pakistan have also released such strategy documents.*

#### What are the major challenges in formulating a NSS?

- **Diverse Security Threats** – India contends with a wide range of security threats, including border conflicts, terrorism, cyber threats, internal insurgencies, and natural disasters, making it *difficult to prioritize and address all effectively*.
- **Lack of inter-agency coordination** – Coordinating among numerous security and intelligence agencies, each with its mandate and priorities, is challenging and can *lead to inefficiencies and gaps in the strategy*.
- **Lack of political consensus** – It is difficult in a diverse and democratic country like India, where different political parties have varying perspectives on security issues.

- **Challenges in resource allocation** – It is challenging, especially in the face of competing priorities such as economic development and social welfare.
- **Conflicting geopolitical environment** – India’s strategic environment is influenced by complex relationships with neighboring countries and major powers, which can complicate the formulation of a coherent and effective NSS.
- **Balancing civil liberties and security** – Ensuring that security measures do not infringe on civil liberties and democratic values is a delicate balance that must be maintained.
- **Regional Variations** – Addressing the unique security concerns of different regions within India, such as the northeastern states, Jammu and Kashmir, and Naxalite-affected areas, adds to the complexity of creating a unified NSS.

#### What lies ahead?

- **Foster political consensus and bipartisan support** – It can be done by involving all major political parties in its formulation and ensuring transparency in the process.
- **Address regional issues** – Customize the NSS to address the specific security concerns of different regions within India, ensuring a localized approach while maintaining a cohesive national strategy.
- **Differentiate civilian and military document** – The NSS would contain several features that may not be appropriate for public release.
- There will thus be a need for two versions, one for the public and one strictly for a classified readership.
- **Regular review and audit** – Establish a process for regular review and audit of the NSS to ensure its effectiveness and make necessary adjustments based on feedback and changing circumstances.

## 16. DISASTER MANAGEMENT

### 16.1 Heatwave Crisis

#### Why in news?

The recent heatwave in North and Central India has led to severe consequences, with multiple fatalities reported due to sunstroke and heatstroke.

#### Status of heatwave in North India

- Bihar’s Aurangabad city and Odisha’s Rourkela region have witnessed deaths attributed to extreme heat.
- Delhi- It recorded an unprecedented high temperature of 52.9°Celsius, though this reading is under scrutiny due to potential sensor errors.
- According to the India Meteorological Department (IMD), temperatures in northwestern and central India are expected to decrease gradually by 2-3° Celsius over the next 3 days.
- Delhi, Haryana, Chandigarh, Rajasthan, and parts of Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, and Odisha, ranged between 45-48°Celsius.
- Other regions like western Madhya Pradesh, Chhattisgarh, and coastal Andhra Pradesh recorded temperatures between 42-45°Celsius.

#### What is heatwave?

- **About-** According to IMD, heatwave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the summer season in the North-Western parts of India.
- **Occurrence-** Heatwaves typically occur between March and June, and in some rare cases even extend till July.
- **Impact-** The extreme temperatures and resultant atmospheric conditions adversely affect people living in these regions as they cause physiological stress, sometimes resulting in death.
- **Qualitatively-** Heat wave is a condition of air temperature which becomes fatal to human body when exposed.
- **Quantitatively-** Heatwave is defined based on the temperature thresholds over a region in terms of actual temperature or its departure from normal.
- **Heatwave-** If the prevalent temperature is 4.5°C to 6.4°C more than normal, it is classified as a heatwave.

- **Severe heatwave**-A rise of more than 6.4°C is considered a severe heatwave. May is the peak month for heatwaves in India.

### What causes heatwave in North India?

- **Influence of El Nino**- During El Nino trade winds weaken and surface temperature rise, this disrupts Indian monsoon reducing moisture flow from the Indian Ocean to the subcontinent.
- **Continentality**- As an inland city, Delhi is less influenced by the moderating effects of nearby oceans, thus the city experiences intensified heat due to the movement of hot, dry air masses from arid regions like the Thar Desert.
- **Urbanization**- A recent study has revealed that urbanization alone has led to a 60% enhancement in warming in Indian cities.
- **Urban heat island effect**- Urban areas experience higher temperatures than rural surroundings due to the replacement of natural landscapes with buildings, roads, and other infrastructure which increases the temperature.
- **Reduced green spaces**- The decrease in vegetation and tree cover reduces natural cooling through shade and evapotranspiration.
- **Heat absorbing materials**- Urban materials such as concrete, asphalt, and bricks have high thermal inertia, meaning they absorb and retain heat longer than natural surfaces.
- **Energy consumption**- Increased energy usage for cooling in urban areas leads to higher emissions of greenhouse gases, further warming the environment.
- **Global warming**-The Urban Heat Island contributes to global warming, as cities grow and demand more energy, greenhouse gas production increases.
- **Night time impact**- A report by Centre for Science and Environment suggests that cities are not cooling down at nights as they used to be, denying people a chance to recover from daytime heat.
- **Loss of evapotranspiration**- Due to deforestation and changing land use pattern there is loss of trees and vegetation, it leads to less cooling through evapotranspiration, leading to higher local temperatures.
- **Policy concerns**- Delhi has a Heat Action Plan (HAP) for 2024-2025, but it needs further development and implementation to be effective, experts suggest that the plan requires proper financing, legal backing, and a focus on vulnerable populations.

*El Niño refers to the warming of sea surface temperatures in the Central and Equatorial Pacific.*

### What are the impacts of heatwave?

- **Heat exhaustion**- It is characterized by heavy sweating, weakness, dizziness, nausea, and fainting which occurs when the body loses excessive amounts of water and salt.
- **Heat stroke**- A severe, life-threatening condition where the body fails to regulate its temperature, leading to dry, warm skin, confusion, unconsciousness, and potential organ failure. Immediate medical intervention is critical.]
- **Health impact**- Heatwaves increase the incidence of heat-related illness such as heatstroke, dehydration, heat exhaustion and heat cramps.
- **Drought**- Prolonged heatwaves can exacerbate drought conditions by increasing evaporation rates and reducing soil moisture.
- **Water scarcity**- Reduced water availability affects both human populations and natural ecosystems.
- **Ecosystem stress**- Wildfires can destroy habitats, reduce biodiversity, and disrupt ecological balances.
- **Economic impact**-Farmers and the food industry face significant economic losses due to reduced productivity and increased costs for irrigation and livestock care.
- **Food security**- Reduced agricultural output can lead to food shortages and increased food prices, affecting food security for populations.
- **Infrastructural damages**-Prolonged heat can damage infrastructure such as roads, railways, and power lines, further compounding the challenges during heatwave.

### What lies ahead?

- The ongoing heatwave in India underscores the urgent need for effective climate adaptation strategies and robust urban planning to mitigate the adverse effects of rising temperatures.

- Addressing the heatwave requires a multifaceted approach, including climate adaptation strategies, improved urban planning, and measures to enhance green cover and reduce heat absorption in cities.

### Quick facts

#### Delhi Heat Action Plan

- **Developed by-** Delhi Disaster Management Authority as per National Disaster Management Authority (NDMA) guidelines.
- **Aim-** To provide a framework for the implementation, coordination, and evaluation of extreme heat response activities in Delhi that reduce the negative health impacts of extreme heat.
- **Objective-** To alert those populations most at risk of heat-related illness that extreme heat conditions either exist or are imminent, and to take appropriate precautions.
- **Role-**
  - Facilitate stakeholders in preparing a Heat Management plan.
  - Provide insight into heat-related illnesses.
  - Outline necessary mitigative and response actions during extreme heat events.

### Strategy

- Vulnerable populations and the health risks specific to each group
- General heat-health risks.
- Effective strategies, agency coordination, and response planning
- Process of activating heat alerts and the plan implementation.
- Evaluate and update the Heat Action Plan based on new learning

## 16.2 Non-Inclusion of Heatwaves in Notified Disasters

### Why in news?

The current severe heatwave across the country has revived talks about officially recognizing heatwaves as a disaster under the Disaster Management Act, 2005.

### How India manages a disaster?

- There is *no mention of disaster in the Constitution* of India.
- **Disaster management in India** – In the wake of the 1999 Odisha super-cyclone and the 2004 tsunami, *Disaster Management Act (DMA)* was enacted in 2005.
- The **National Disaster Management Act (NDMA)** is the key piece of legislation governing the roles of the Centre and States in responding to a natural disaster.
- The *Ministry of Home Affairs* is the nodal body that governs the execution of this Act.
- **Disaster** – NDMA defines a disaster as a “*catastrophe, mishap, calamity or grave occurrence*” arising from “*natural or man-made causes*” that results in substantial loss of life, destruction of property, or damage to the environment.
- It must also be of such nature which is “*beyond the coping capacity*” of the community.
- **Notified Disaster** – They are disasters which are notified in the *Guidelines on Constitution and Administration* of the State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF).
- Such disaster are called as notified disasters.
- **Categories of Notified disasters** – Currently, there are **12 categories of disasters** which are notified under this Act.
- These are cyclones, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, and frost and *cold waves*.

### What are the benefits of notifying a disaster?

- Several disaster management authorities draw their powers from NDMA and they define which natural calamities qualify for **state-backed compensation**.

- Thus a notified disaster in India is eligible for financial assistance in times of such calamities.
- **Financial assistance** – In case of occurrences of a notified disaster, the states are allowed to draw money from the two funds that were established under NDMA.
- **At National level** – The funds can be drawn from the National Disaster Response Fund (NDRF).
- The *entire money* of the NDRF comes from the *central government*.
- **At State level** – The funds can be drawn from the State Disaster Response Fund (SDRF).
- *States contribute 25%* of the money in the SDRF (10% in case of special category states), the rest comes from the Centre.

### Why heatwaves were not included as notified disasters?

- **Need** – If included, states could use disaster response funds for compensation, relief, and managing heatwave impacts.
- Currently, states must use their own funds for these activities.

### Heatwave

- **Heat wave** – It is described when maximum temperatures reach over 40 degrees Celsius in plains and over 30 degrees Celsius in hilly regions.
- It occurs when temperatures are 4.5 to 6.4 degrees Celsius above normal for two consecutive days at two stations.

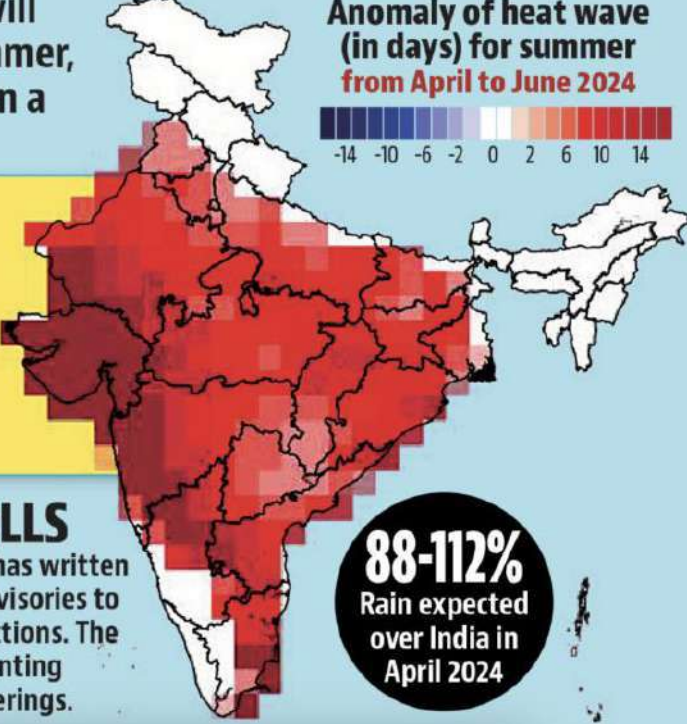
## ‘Extreme heat’ likely across India

IMD has said most parts of India will get ‘extreme heat’ during the summer, which overlaps with the time when a billion people will be voting

**Across India, swathes of red expected**  
Most parts of India are likely to experience heatwave, especially regions over southern, central, eastern and northwestern India

**STATES WARNED OVER POLLS**  
The National Disaster Management Authority has written to the Election Commission of India to issue advisories to all states to prevent heat stress during the elections. The health ministry too has written to ECI on preventing exigencies during rallies or large political gatherings.

**88-112% Rain expected over India in April 2024**



To know about Heatwave crisis in India, click [here](#)

- **Common Summer Events** – Heatwaves weren't classified as disasters in the 2005 Disaster Management Act because they were typical summer events.
- They are common in northern, eastern, and central India, cause illnesses and deaths.
- **Varying definitions of a heatwave** – While temperatures above 45 degrees Celsius are considered to have heatwave-like conditions, it can also mean temperatures that are 4.5 degrees or more above what's normal for any place.

- **Finance Commission Reluctance** – The issue of inclusion of more calamities in the existing notified list of calamities/ disasters, was considered by the 15th Finance Commission.
- It reported that it did not find any merit in the states request of inclusion of heatwave in notified disaster list.
- The Centre resists national classification, citing the Finance Commission's stance.

**15th Commission** has allowed the state government to use up to 10% of the annual fund allocation of the SDRF for providing immediate relief to the victims of natural disasters, other than the aforesaid 12 disasters, that they consider to be 'disasters' within local context in the State.

- **Financial burden on the government** – The government has to provide *monetary compensation of Rs 4 lakh for every life lost* because of a disaster that is in the notified list.
- **Problem in attributing deaths to heatwaves** - In most cases, *heat itself does not claim lives*.
- Most people die due to other pre-existing conditions, made worse by the impact of extreme heat.

Haryana, Uttar Pradesh, Odisha, and Kerala have utilized this provision to provide relief for heatwave related relief measures.

#### What lies ahead?

- **National Classification** – Recognize heatwaves as disasters to ensure a coordinated national response.
- **Early Warning Systems** – Enhance and expand early warning systems to provide timely alerts to vulnerable populations.
- **Public Awareness Campaigns** – Increase awareness about heatwave risks and preventive measures.
- **Urban Planning** – Implement urban planning strategies to reduce heat island effects, such as increasing green spaces and using heat-reflective building materials.
- **Creating Heat Action Plans** – Develop and enforce local heat action plans, focusing on high-risk areas.
- **Healthcare Preparedness** – Strengthen healthcare infrastructure to handle heatwave-related illnesses.
- **Water Management** – Improve water management systems to ensure adequate water supply during heatwaves.
- **Climate-Resilient Infrastructure** – Invest in climate-resilient infrastructure to mitigate heatwave impacts.

#### Heat Action Plans (HAPs)

- HAPs provide a snapshot of a *region's heat profile*, including information on
  - The number of *past heatwave events*
  - The *yearly trends* in the summer maximum temperature
  - The *land surface temperature*, and so on.
- It is followed by a *vulnerability assessment* which maps out regions that require immediate attention and a response plan.
- **India** - With the frequency of heatwaves rising, State, district, and cities have prepared heat action plans (HAPs).
- The *NDMA and the India Meteorological Department* are working with *23 States* to develop HAPs.

### 16.3 Forest Fires in Himachal Pradesh

#### Why in news?

Recently, Himachal Pradesh (H.P.) is witnessing widespread forest fires across the region.

#### What is the status of forest fires in Himachal Pradesh?

- **Geography** – The state's total geographical area is 55,673 sq km, out of which 15,443 sq km is **forest cover, which is 27.72% of the total area**.
- Chir Pine, Deodar, Oak, Kail, Fir and Spruce are some of the common trees found here.
- **Transformation of forests** – A crucial watershed moment in Indian forestry began with the construction of railways in the 1850s.

- From 1853 to 1910, the construction of around 80,000 kms of railway track led to an *assault on forests* and the *extinction of the customary rights of the people*.
- Between 1869 and 1885, 6.5 million sleepers were made of Deodar, and the *area for Chir pines was expanded* for timber and resin.
- Total trees from which resin was tapped between 1910 and 1920 increased from 2,60,000 to 21,35,000.
- **Forest fire** – It is an *uncontrolled fire in an area* of combustible vegetation that occurs in the countryside or rural area.
- **Higher incidence of forest fires** – According to the Himachal Pradesh Forest department, there have been a **total of 1,684 forest fires since April 2024**.
- **Impact** – These fires have *damaged a total of 17,471 hectares of forest land*, resulting in significant loss to wildlife.
- From 2001 to 2023, H.P. has *lost 957 hectares of tree cover* from fires and 4.37 thousand hectares from all other drivers of loss.

*Uttarakhand and Himachal, two of India's Himalayan states, ranked first and second among states where most fire alerts had been sounded in 2023-2024.*

To know more about Forest Fires in India, Click [here](#)

### What are the cause for forest fires in the state?

Natural Causes	Man-made Causes
<ul style="list-style-type: none"> <li>• Lightening</li> <li>• Rubbing of Bamboo with each other</li> <li>• Depletion of snowmelt water in pre-monsoon summer</li> <li>• Less moisture content</li> <li>• Dry leaf litter on the surface</li> </ul>	<ul style="list-style-type: none"> <li>• Conversion of Banj oak with Chir pine for timber</li> <li>• Unattended campfires</li> <li>• Discarded cigarettes</li> <li>• Slash and Burn cultivation</li> <li>• Deforestation for developmental activities</li> </ul>

- **Natural causes** – It relates to *lightning* or *rubbing of dry bamboos* with each other can sometimes result in fires.
- **Depletion of snow** – Fires in the Himalayas occur during the pre-monsoon summer period of *moisture stress*, due to the resultant *depletion of snowmelt water*.
- **Less moisture content** – The less moisture there is, the *greater the impact of the fires*.
- **Dry leaf litter** – Fallen tree leaves, dry grass, weeds, low brushwood, deadwood on the forest floor, logs and stumps etc *form the surface fuels*.
- **Climate Changes** – There is higher incidence of heatwaves and droughts in recent times that are favoring forest fires.
- **Faulty Human practices** – The primary causes of these forest fires are faulty forestry practices, and *treating forests from a utilitarian perspective*, excluding people's participation.
- **Irrational human activities** – Activities like *unattended campfires, discarded cigarettes* etc., are also some of the common causes for forest fires.
- **Slash and Burn practices** – When people burn their fields to clear them of stubble, dry grass or undergrowth, the *fire sometimes spreads to the adjoining forest*.
- **Replacement of the Banj oak with Chir pine** – [Chir pine](#) forests are very vulnerable to forest fires.
- Ecologically, *Banj forests absorb a high content of rainwater*, leading to better moisture retention and water springs in the mountains.

### What are the impacts of forest fires?

- **Environment degradation** – These fires are also a major source of pollutants, including black carbon.
- It can significantly contribute to glacier melt in the Himalayas and negatively influences the regional climate.

- **Low Productivity** – Forests help maintain aquifers and continuous flow of streams and springs, and provide firewood, fodder and non-timber produce to the local communities all these capacities may get adversely affected in case of a fire.
- **Invasion by exotic species** – Moisture-loving trees such as *Oaks and Deodars* may give way to other species and exotic weeds.
- **Erosion** – Forest fires may destroy organic matter in the soil and expose the top layer to erosion.
- **Danger to wildlife** – Fires may also impact the wildlife by burning eggs, killing young animals and driving the adult animals away from their safe haven.
- **Affect human settlements** – Sometimes, a forest fire may get out of control and extend to human settlements, thus posing danger to human life and property.

### What lies ahead?



- **Democratise forests** – It is essential to ensure that people and communities who have lived in and around forests are made part of the forest management process.
- **Restore community rights** – The rights of the local community have been periodically curtailed, and as a result, when forest fires start, first responders are nowhere to be found.
- The traditional forest rights of Himalayan dwellers included the right to extract wood for fuel, timber, fodder, and other activities.
- **Promote peoples participation** – There is a need for involving local communities in decision making of development based projects in the state.
- Create environmental services at the village level.
- **Increase biodiversity** – Build mixed forestry and remove pine trees.
- **Enhance knowledge convergence** – There is a need to ensure that both scientific and community knowledge converge and forest management is conducted in a participatory manner.
- **Build infrastructural solutions** – We need to implement check dams and other methods to revive water springs.
- **Seek disaster management funds** – We need to articulate their case with the ongoing *16th Finance Commission*, seeking help apart from disaster mitigation funds.

## 16.4 Ecological Disasters in Sikkim

### Why in News?

Recently, the state of Sikkim in Northeast India was hit by a major landslide caused by heavy rainfall, wreaking havoc among the population.

### Write a note on Sikkim?

## Sikkim

- It is a *landlocked Indian state* nestled in the Himalayas.
- It is one of the 8 north-eastern states in India.
- **Borders** – It borders *Nepal* to the west, *Tibet* to the north and east, and *Bhutan* to the southeast.
- The *state of West Bengal* borders Sikkim to its south.
- **Size** – It is the *second-smallest state* after Goa in total area.
- **Population** – With just slightly over 600,000 permanent residents, Sikkim is the *least populous state* in India.
- **Physiography** – The entire state is *mountainous*, with altitudes ranging from 300 to 8,586 meters from sea level, therefore despite its small area, it is geographically diverse.
- *Kanchenjunga*, the world's third-highest peak, is located on Sikkim's border with Nepal.
- About a third of the land is heavily forested.
- Sikkim's hot springs are known for medicinal and therapeutic values.
- **Climate** – The climate ranges from subtropical to high alpine and a rich diversity in flora and fauna thrives in the state.
- **River Teesta** – It is described as the "lifeline of Sikkim", flows through the state from north to south.
- **Geo-strategic importance** – Sharing international borders with three countries it lies in a geopolitically strategic location.
- Historical clashes between India and China at the Sikkim frontiers, including the *1967 war*, the *2017 Doklam standoff*, and the *2021 border skirmish*, underscore the strategic importance of the region.



### Why Sikkim is prone to ecological disasters?

- **Incessant rainfall** – It records one of the highest annual rainfalls in the country.
- **Landslides** – With a steep altitude variation over a span of longer areas, it has always remained vulnerable to landslides.
- It ranges from from 231 meters above sea level in the south to 8,500 meters in the northwest, over a span of just 114 kilometers.
  - There has been a noticeable increase in the frequency of landslides since 1995, with another significant increase starting in 2007.
- **Earthquake** – It lies in the *high seismic zones IV and V* in earthquake prone Himalayas.
  - In 2011, the region experienced one of the most fatal earthquakes in its history.
- **GLOF** – A Glacial Lake Outburst Flood in 2023 affected about 88,400 people.
- **Higher population pressure** – From just one urban town in 1981, the number of towns increased to eight by 2001.
- The population living in urban areas rose from 2% percent in 1951 to 11% in 2011.
  - The introduction of the *North East Industrial and Investment Promotion Policy* in 2007 saw a push for rapid urbanization and industrialization.
- **Rampant construction of dams** – Large-scale developmental activity in Sikkim began with the West Bengal government's damming of the Teesta River in 1975.

**A Glacial Lake Outburst Flood (GLOF)** are sudden and often catastrophic events that occur when water contained within or underneath a glacier or a moraine-dammed glacial lake is released rapidly.

- As of 2019, there were *more than 40 hydropower projects* in different stages of development in Sikkim.
- **Security-Development projects** – A significant construction activity has been undertaken to build a *railway line connecting Sevoke in West Bengal to Rangpo in Sikkim*, with the ultimate aim of extending it to the Nathu La Pass bordering China.
- The railway line construction, meanwhile, involved blasting 14 tunnels in an already precarious landscape.

#### What are the impacts of disasters in Sikkim?

- **Destruction of ecosystem** – Disasters destroys the natural landscape of Sikkim and alters it making it non-conducive for living both for humans and wildlife.
- **Damage to property** – It causes severe damage to roads, bridges, and homes.
- The 2023 GLOF occurred in South Lhonak Lake in northern Sikkim, rupturing one of the region's highest dams on the Teesta River, the Chungthang or Teesta III dam.
- **Loss of life** – 2023 GLOF have engulfed everything in its downstream areas including the life of 23 Indian Army soldiers.
- **Affect tourism** – About 1,500 tourists, including international visitors, were stranded in northern Sikkim and later rescued.
- **Disconnect the state** – Roads connecting Sikkim and north Bengal to the plains of India were cut off for a long time.

#### What lies ahead?

- **Strengthening the regulation** – Regulating, monitoring and planning of land use, land-use change and forestry in the Himalaya is needed.
- **Granting rights** – The local communities be given constitutional, land and forest governance rights.
- **Efficient implementation** - Constitutional provisions and laws that support decentralised governance and decision-making should be efficiently implemented.
- **Following best practices** – Encourage transparency, knowledge sharing and exchange so that indigenous knowledge and local communities can also be part of governance.
- **Building resilient societies** – Making the locals as equitable and sustainable can ensure the proper implementation of SC/ST Sub plans in mountain states
- **Better disaster management** – Have a strong disaster response system ready, including time-bound and full union government support whenever extreme events occur.

\*\*\*\*\*