

**THIRD WEEK APRIL 2023**

**CURRENT AFFAIRS**



## Third Week April 2023 Affairs

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## General Studies I: Modern Indian History

# MAHAD SATYAGRAHA

### 1. Context

Babasaheb's most significant contribution lay in galvanising the movement for Dalit emancipation. He is credited with awakening the Dalit consciousness, which powered the community's bid for political power. It all started with the Mahad Satyagraha of 1927, which was the first major collective protest of the so-called "untouchables" under the stewardship of Ambedkar

As a grateful nation celebrates the 132nd **birth anniversary** of the father of India's Constitution, here is a recall of the Mahad Satyagraha, one of the earlier and among the most significant of milestones in a great life

### 2. Situations led to Satyagraha

- The events that led to the **Mahad Satyagraha** began to unfold in August 1923.
- The Bombay Legislative Council passed a resolution moved by the social reformer Rao Bahadur S K Bole, which said "the Untouchable classes be allowed to use all public water sources, wells and dharmashalas which are built and maintained out of public funds or administered by bodies appointed by the Government or created by statute, as well as public schools, courts, offices and dispensaries."
- Albeit with reluctance, the Bombay government adopted the resolution in the following month, and issued directions for its implementation
- The situation on the ground, however, remained unchanged upper caste Hindus would not allow the lower castes to access public water sources
- At that point, Ramchandra Babaji More, a Mahad-based Dalit political leader, approached Ambedkar to preside "over a conference of the Untouchables in Konkan"
- Ambedkar at the time was helping Dalits fight against the social evil of untouchability through the Bahishkrit Hitkarini Sabha, the institution that he had founded in 1924

- Ambedkar agreed to More's proposition, and involved himself in overseeing the preparations for the conference, which was to take place in Mahad town in the Konkan (now in Maharashtra's Raigad district) on March 19 and 20, 1927
- He conducted meetings with local Dalit leaders, stressed on creating "a wave of awakening" among the lower caste people of Konkan, and directed other organisers to conduct meetings to propagate news of the conference
- The volunteers collected Rs 3 from each of the 40 villages and also collected rice and wheat to feed the participants at Mahad. It took nearly two months of preparations to hold the Conference
- Workers and leaders personally met depressed class people and explained to them the importance of the Conference
- Soon after the conference came to an end, a priest of a local temple went around the town claiming that Dalits were planning to enter the temple, and asked people to help thwart them.
- This resulted in a clash in which "20 people were seriously injured and 60-70 people, including 3 to 4 women were wounded", Teltumbde wrote.
- Some upper caste Hindus filed a case in court against Ambedkar and his followers on December 12, claiming that the tank was private property
- Two days later, the court issued a temporary injunction, prohibiting Babasaheb and other Dalits from going to the tank or taking water from it until further orders.

### 3. Significance of Satyagraha

- The Mahad Satyagraha is considered to be the "foundational event" of the Dalit movement. This was the first time that the community collectively displayed its resolve to reject the caste system and assert their human rights.
- Although anti-caste protests had taken place before the Mahad Satyagraha, they were mostly localised and sporadic
- The difference between (the) Mahad (Satyagraha) and them mainly lay in the organisation and leadership; they lacked in elements of organisation and the charismatic leadership of Dr Ambedkar
- The Mahad Satyagraha was to become the blueprint for organising future movements against the caste system and its practices.

- It marked an important point in Ambedkar’s political journey, catapulting him to the leadership of the downtrodden and oppressed classes in the country

## General Studies I: Medieval Indian History

# UTTARMERUR INSCRIPTION

### 1. Context

Prime Minister Narendra Modi on Thursday (April 14 2023 ) referred to the Uttaramerur inscription in Kanchipuram, Tamil Nadu, while discussing India’s democratic history

“The inscription found there is like a local constitution for the gram sabha. It tells how the assembly should be run, the qualification of members, the process to elect the members, and how a member would be disqualified.”- PM Modi

### 2. About Uttaramerur

- Uttaramerur has multiple inscriptions spanning centuries, the most famous one. And it is from the reign of Parantaka I (907-953 AD)
- These provide a detailed description about the village’s self-governance and have been cited by historians and political leaders alike as evidence of India’s history of democratic functioning
- Uttaramerur lies in present-day Kanchipuram district, approximately 90 km southeast of Chennai.
- Today, it is a small town and had a population of roughly 25,000 in the census of 2011. It is known for its historic temples built during Pallava and Chola rule
- The famous inscription from Parantaka I’s reign is found on the walls of the Vaikunda Perumal Temple

### 3. Details of Inscription

The inscription gives details of the functioning of the local *sabha*, i.e. the village assembly

A *sabha* was an assembly exclusively of *brahmins* and had specialised committees tasked with different things

The Uttaramerur inscription details how members were selected, the required qualifications, their roles and responsibilities, and even the circumstances in which they could be removed

#### 4. About Sabhas and their appointments

- Describing how the *sabha* shall be constituted, the inscription says, “There will be 30 wards
- Everyone living in these 30 wards would assemble and select one representative for the village assembly.”
- It then goes on to describe what the qualifications for such a representative must be
- These include ownership of a certain amount of land, having a house, being between the age of 35 and 70 and “knowing *mantras* and *Brahmanas*” (from the Vedic corpus)
- An exception can be made on land ownership if the person has learnt at least “one *Veda* and four *Bhashyas*”. One must also be “well-versed in business” and “virtuous”
- The inscription then lists a number of factors which disqualify someone and their family (all the relations are systematically listed) from consideration
- These include, “not having submitted accounts” while previously serving in a committee, committing any of the first four of the five ‘great sins’ (killing a brahmin, drinking alcohol, theft and adultery), being associated with outcasts, and eating ‘forbidden’ dishes.
- All those eligible and willing would write their names on palm leaf tickets following which, the representative would be chosen on the basis of an elaborate draw of lots, conducted by priests in the inner hall of the building where the assembly meets

#### 5. Responsibilities

- The inscription describes a number of important committees within the *sabha* with their own distinct functions

- These include, the garden committee, the tank committee, the annual committee (an executive committee which required prior experience and knowledge to be a part of), the committee for supervision of justice (for supervising appointments and wrong doing), the gold committee (in charge of all the gold in the village temple) and the five-fold committee (its role is unclear in the inscription)
- These committee assignments would last for 360 days after which the members would have to retire
- Anyone in the committee who was implicated in any wrongdoing, such as forgery or having ridden an donkey (i.e. being punished for a crime), was removed instantly
- Iso, the inscription emphasises upon the keeping of accounts – any discrepancy can also disqualify members of the *sabha*

## 6.Example of real Democracy

- While the Uttaramerur inscription gives details of local self-governance, on closer inspection, it is far from a truly democratic system
- Not only does it restrict *sabha* membership to a tiny subsection of land-owning *brahmins*, it also does not have true elections
- Rather, it chooses members from the eligible pool of candidates through a draw of lots
- That being said, this does not mean that this inscription should not be cited as a precedent for democratic functioning
- The idea of a democracy, as understood today, is a fairly recent phenomenon
- The United States, often hailed as the epitome of a liberal democracy, only gave universal adult franchise to its population in 1965
- What the Uttaramerur inscription details is a system of local self-government, outside the direct authority of the king
- Furthermore, for all intents and purposes, the inscription is like a constitution – it describes both the responsibilities of members of the *sabha* as well as the limitations to the authority of these members
- If the rule of law (rather than rule by personal diktat) is an essential component of a democracy, the Uttaramerur inscription describes a system of government which follows just that

# EMPIRES BUILDERS OF MEDIEVAL INDIA

## 1.Context

Within hours of the National Council of Educational Research and Training's (NCERT) decision to remove a chapter on the Mughals from the history textbooks for Class 12 students, noted historians of the country issued a statement, denouncing the deletions

“Kings and Chronicles: The Mughal Courts” has been deleted... In medieval times, the Mughal empire and the Vijayanagara Empire were two of the most important empires... In the revised version, while the chapter on the Mughals has been deleted, the chapter on the Vijayanagara Empire has been retained.”



## 2.Background

- It's hard to understand the history of modern India without the contribution of the Mughals, who, including Akbar, Jahangir, Shah Jahan and Aurangzeb,

were all born in undivided India; and were buried here. None of them ever left the country, not even to go on a pilgrimage to Mecca

- It all started with Babur when he defeated Ibrahim Lodi in the First Battle of Panipat in 1526, and went on to capture all of North India in his brief reign of four years
- Babur's victory was to usher in a prolonged period of political stability for the next nearly 200 years
- His grandson Akbar ruled for almost 50 years, as did Akbar's great-grandson Aurangzeb, while his son Jahangir and Shah Jahan ruled for over 20 years each, making sure there was consistency in state policy and the development of the empire was unimpeded
- Their influence gradually reduced from 1707 onwards, and the last Mughal, Bahadur Shah Zafar, was only a symbolic leader of the Revolt of 1857
- However, in this symbolism lay a message; common Indians, as evidenced by the sipahis' uprising, considered Mughals to be their kings; hence the leadership role to Zafar
- This was a throwback to the golden era of the Great Mughals; the latter Mughals, post-1707, had done nothing to earn that kind of trust
- Aurangzeb's prolonged battles in the Deccan had enfeebled the state's finances, and his successors were unable to replenish the treasury
- To augment resources, Aurangzeb had imposed jizyah, a tax solely on non-Muslims, which proved detrimental in the long run
- Once Aurangzeb passed away in 1707, his successors proved incapable of ruling over a huge, unwieldy empire

### 3. Beginning

- A descendant of Timur and Genghis Khan, Babur, who knew Turkish and Persian, started the practice of chronicling the events and noting down his impressions of the landscape and the artists he met
- He thus authored a unique document Baburnama, originally in Turkish which was later translated into Persian
- Not just Baburnama, the Ramayana, the Mahabharata and the Upanishads were also translated during the Mughal era

- The first translations of texts like the Ramayana and Mahabharata in any language from Sanskrit was done under the Mughals. Dara Shukoh translated 25 Upanishads into Persian. He also translated Yogavashishta
- Incidentally, Shukoh, the man who never became the king, was way ahead of the times. Eldest son of Shah Jahan, he was a Sunni Muslim who associated closely with Hindu philosophers and Christian priests
- Shukoh clearly inherited all this from Jalaluddin Akbar, the Emperor who built Ibadat Khana where scholarly debates were held between Brahmins, Christians, Jain, Buddhist and Islamic scholars
- It was a move way ahead of the time when one thinks until then the religion of the Emperor was supposed to be religion of the kingdom
- The modern Ganga-Jamuni tehzeeb stems from that shared feeling, a synthesis of different cultures
- The philosophical discussions during the time of Akbar and his son Jahangir led to intermingling among commoners
- In Mughal India, Hindus and Muslims lived cheek by jowl in the same locality. The respect extended to places of worship
- Often land grants for temples were made by the Mughal emperors; even the much maligned Aurangzeb, who demolished temples, issued grants

#### 4. Empire

- By the end of the reign of Akbar, the population of the Mughal kingdom exceeded that of entire Europe, and the Mughal wealth was unmatched
- Shah Jahan was the first Indian ruler after Ashoka to reach Balkh and Badakshan. There was no mightier empire in the world
- The richness was owed substantially to the Rajputs, who were sharers of power from the time of Akbar, who defeated Rana Pratap in the Battle of Haldighati, and co-opted them in his empire through matrimonial alliances
- Most Mughal rulers after Jahangir were born to Rajput women. As a result, within the family, Hindavi was often the language of communication. Aurangzeb, incidentally, conversed in Hindi and composed in Braj bhasha
- It's important to remember that during the time of the Mughals, Raskhan wrote of Krishna in Hindi and Balkrishan Brahman in Persian

## General Studies I: Modern Indian History

# JALLIANWALA BAGH MASSACRE

### 1. Context

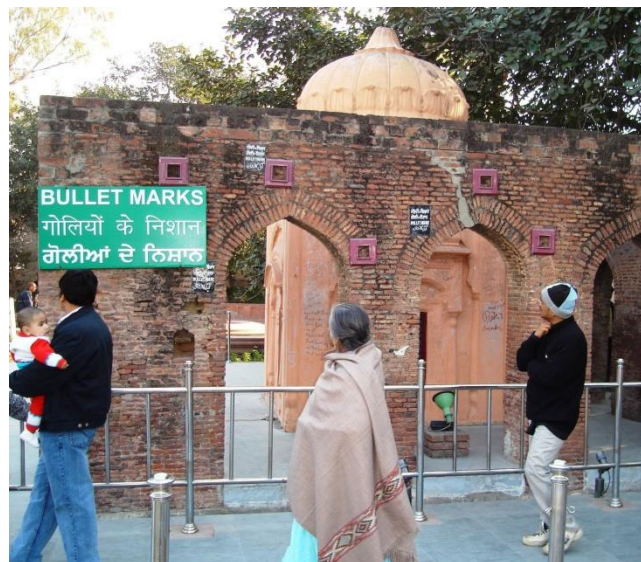
On April 13, 1919, what was planned as a protest gathering of Indians in a compound called Jallianwala Bagh in Amritsar, Punjab, in the British-ruled India, witnessed violence that would become one of the most lasting memories of the barbarity of colonial rule.



### 2. Background

- A British Colonel named Reginald Edward Harry Dyer ordered troops to surround the compound, situated between houses and narrow lanes, and launched indiscriminate firing on the assembled men, women and children who lacked the means to escape. Some of them jumped into a well located within the premises to escape the bullets

- According to the British, around 400 people were killed in the firing, the youngest of whom was nine-years-old and the oldest was 80. Indian historians peg the toll at 1,000
- While British rule in India led to numerous atrocities before and after Jallianwala Bagh, the nature of the violence that unfolded on unarmed civilians led to widespread condemnation later, including from British authorities
- Wartime British Prime Minister Winston Churchill went on to describe the day as “monstrous” and an inquiry was set up to probe Dyer’s orders



### 3. What happened at Jallianwala bagh

- April 13 saw celebrations for the Sikh festival of Baisakhi, which marks the onset of Spring and the harvest of winter crops
- Simultaneously, the movement for independence from British rule had been steadily gaining ground in recent years, and an event was held at Jallianwala Bagh to defy colonial orders and protest against the recently passed Rowlatt Bills
- These Bills curtailed the civil liberties of Indians and let colonial forces arrest people without any warrant or trial
- One of the Acts was pushed through the Legislative Council ignoring objections of elected Indian representatives, leading to resentment among Indians

- Some violent protests had been witnessed in cities of Delhi, Bombay (now Mumbai) and Lahore as well, even as MK Gandhi called for the launch of a non-violent peaceful protest at the time
- Sir Michael O'Dwyer imposed martial rule in Lahore and Amritsar on April 11, but the order reached Amritsar only on April 14
- He also sent Colonel Dyer, who was then holding the temporary rank of Brigadier General, from the Jalandhar cantonment to Amritsar
- On April 13, a Sunday, Col Dyer's troops marched through the town to warn against the assembly of more than four people
- But the announcement did not reach most people, and devotees headed towards the Golden Temple
- By 4 pm, many gathered for a public meeting against the arrest of Dr Satyapal and Dr Saifuddin Kitchlew for opposing the Rowlatt Act
- Dyer saw the assembly as a violation of government orders. "They had come to fight if they defied me and I was going to give them a lesson.....I was going to punish them
- "My idea from the military point of view was to make a wide impression," Dyer said to the Hunter Committee of 1920

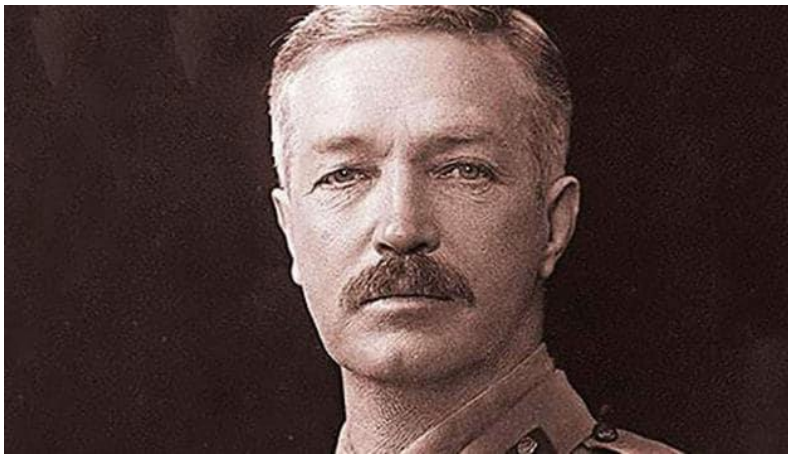
Hunter Committee of 1920 that was setup to investigate the disturbances across cities. It had a specific section discussing Dyer's actions

With his troops, Dyer entered the Bagh through a narrow alley, the only entry and exit path

- The 1920 report noted that Dyer entered Jallianwala Bagh with 25 Gorkha soldiers and 25 Baluchis armed with rifles, 40 Gorkhas armed with only Khukris and two armoured cars. A crowd of around 10 to 12,000 was gathered there at the time
- According to the report "Without giving the crowd any warning to disperse, which he considered unnecessary as they were in breach of his proclamation, he ordered his troops to fire and the firing continued for about ten minutes,"
- It noted that no one in the crowd was carrying firearms though some may have been carrying sticks
- In all, the soldiers fired 1,650 rounds. A later investigation brought the number of killed up to 379

- No figure was given for the wounded and it was thought that it may have been three times the dead
- Indian leaders expressed their anger and protested in response to the killings. Notably, Nobel laureate poet Rabindranath Tagore gave up his knighthood

#### 4. About General Dyer



- Dyer was born in Murree in 1854, in present-day Pakistan, and was commissioned in the West Surrey Regiment in 1885 and then transferred to the Indian Army
- The Jallianwala Bagh incident led to focus on his actions in particular
- After the incident too, Dyer was known to engage in barbarity against Indians in at least one other incident
- On April 10, 1919 Marcella Sherwood, a missionary, was cycling down the street in Amritsar when she was allegedly attacked. Some locals intervened and saved her
- Six days after the Jallianwala Bagh massacre, Dyer was informed of how Sherwood was attacked and he issued an order that **no one would walk through the street** where Sherwood was attacked
- Those who needed to pass through it, were told to crawl. Those disobeying these orders were to be flogged
- As part of the Hunter Committee report, statements from Dyer given to it show that he did not show particular regret for his action on April 13, believing them to be justified to quell the crowd

- He is quoted as saying in the report, “I had made up my mind. I was only wondering whether I should do it or not....The situation was very, very serious. I had made up my mind that I would shoot all men to death if they were going to continue the meeting.”

## 5. After things of Massacre

- The Hunter Committee condemned the incident but did not impose any punishment on Dyer
- Ultimately, the Commander-in-Chief of the Army directed Brig Gen Dyer to resign his appointment as Brigade Commander and informed him that he will receive no further employment in India
- However, Dyer remained a divisive figure at the time. Imperialists at home lauded Dyer for his actions against what they termed as unrest in India
- Conservative newspapers and organisations in the UK later arranged for a fund for Dyer and collected a significant amount
- Dyer would go on to retire and live in Britain. Incidentally, Michael O’Dwyer, the officer to order martial law, was later assassinated in 1940 in his retirement by **Sardar Udham Singh**, an Indian man who was present at Jallianwala Bagh and escaped the atrocities

## General Studies I: Great Personality, Social reformer

# AMBEDKAR JAYANTHI

### 1. Context

On the occasion of Ambedkar Jayanti (April 14), we look at Dr. Ambedkar's early life and his contribution to Indian society and the issue of separate electorates, Dr. Ambedkar’s position, the opposition to it from Gandhi, and how it was eventually rejected in favor of reservations.

## 2. About Dr. B.R. Ambedkar

- Dr. Bhimrao Ramji Ambedkar, popularly known as Babasaheb Ambedkar, is widely revered as one of the architects of the Indian Constitution.
- A man of immense stature and many facets, he was also a renowned political leader, eminent jurist, Buddhist activist, philosopher, anthropologist, historian, orator, writer, economist, scholar, and editor.
- Dr. Ambedkar fought to eradicate social evils like untouchability and for the rights of the Dalits and other socially backward classes throughout his life.
- Dr. Ambedkar was appointed as India's first Law Minister in the Cabinet of Jawaharlal Nehru. He was posthumously awarded the Bharat Ratna, India's highest civilian honor in 1990. The birthday of this great individual is celebrated as Ambedkar Jayanti.
- He was born on April 14, 1891, at Mhow near Indore in the then Central Province, now Madhya Pradesh.
- For the first time, activist Janardan Sadashiv Ranapisay celebrated Ambedkar's birthday publicly on 14 April 1928 in Pune.
- Since then, this day is celebrated as Ambedkar Jayanti or Bhim Jayanti. From a humble origin, Dr. Ambedkar went on to become one of the foremost legal minds in the country.

On March 31, 2021, the Government of India decided to declare April 14 as a public holiday on account of the birthday of Dr. BR Ambedkar.

## 3. Dr. B.R. Ambedkar: Emancipator of Dalits

- After returning to India from his studies abroad, Bhimrao Ambedkar observed that caste discrimination was almost fragmenting the Nation. He favored the concept of providing reservations for Dalits and other religious communities.
- With the aim of reaching out to people and making them understand the drawbacks of the prevailing social evils, he launched a newspaper called "Mooknayaka" (leader of the silent).
- In 1923, he set up the 'Bahishkrit Hitkarini Sabha (Outcastes Welfare Association), for spreading education and culture amongst the downtrodden,

improve their economic status and raise matters concerning their problems in the proper forums to focus attention on them and find solutions to the same.

- In 1927, he led the Mahad March at the Chowdar Tank. This marked the beginning of the anti-caste and anti-priest movement.
- The temple entry movement launched by Dr. Ambedkar in 1930 at Kalaram temple, Nasik is another landmark in the struggle for human rights and social justice.
- Following the British Government's announcement of the 'Communal Award' granting the 'depressed classes' the right to separate electorates, in September 1932, Dr. Ambedkar and Gandhiji reached an understanding, which became the famous Poona Pact.
- According to this Pact, the provision for separate electorates was dispensed with, and reservations were provided for untouchables in Government jobs and legislative assemblies.
- The Pact carved out a clear and definite position for the downtrodden on the political scene of the country.
- It opened up opportunities for education and government service for them and also gave them the right to vote.
- Dr. Ambedkar attended all three Round Table Conferences in London and each, time emphatically projected his views in the interests of the 'untouchable'.
- He exhorted the downtrodden sections to raise their living standards and acquire as much political power as possible.

#### **4. Dr. B.R. Ambedkar as a National Builder**

- Babasaheb underlined the importance of creating not just a political democracy, but also a social and economic one.
- His doctoral thesis inspired the setting up of the Finance Commission of India and his works acted as a beacon in framing guidelines for the RBI Act, of 1934.
- He was one of the founders of Employment Exchanges in our country.
- He played a vital role in the establishment of the National Power Grid System, Central Water Irrigation, Navigation Commission, Damodar Valley Project, Hirakud Dam Project, and Son River Project.

## 5. Established the Finance Commission of India

- In 1951, Ambedkar established the Finance Commission of India.
- He opposed income tax for low-income groups. He contributed to Land Revenue Tax and excise duty policies to stabilize the economy.
- He played an important role in land reform and the state's economic development. He emphasized equal rights for women for economic development.
- He laid the foundation of industrial relations after Indian independence.

### **The Reserve Bank of India (RBI), was based on the ideas that Dr. B.R. Ambedkar presented to the Hilton Young Commission**

Dr. B.R. Ambedkar was trained as an economist and was a professional economist until 1921 when he became a political leader. He wrote three scholarly books on economics:

- Administration and Finance of the East India Company
- The Evolution of Provincial Finance in British India
- The Problem of the Rupee: Its Origin and Its Solution.

## 6. Dr. B. R. Ambedkar as an Architect of the Indian Constitution

- Dr. B.R. Ambedkar was elected as the Chairman of the drafting committee of the Constitution. His statesmanship is visible in every article of the Indian Constitution.
- At the beginning of 1948, Dr. Ambedkar completed the draft of the Constitution and presented it to the Constituent Assembly.
- In November 1949, this draft was adopted with very few amendments.
- Many provisions have been made in the constitution to ensure social justice for scheduled castes, Scheduled tribes, and backward classes.
- Dr. Ambedkar thought that traditional religious values should be given up and new ideas adopted. He laid special emphasis on dignity, unity, freedom, and rights for all citizens as enshrined in the Constitution.

## **First Law Minister of Independent India**

In 1947, when India became independent, he became the first Law Minister of Independent India.

## **7. Contribution to the Upliftment of Women**

- Dr. Ambedkar stressed the importance of economic and social justice for women.
- His ideas are crystallized in his article titled "Castes in India- Their Mechanism, Genesis and Development" in which he argues that both child marriage and Sati had roots in an ancient practice of endogamy or marriage in the same caste.
- The article is one of the earliest feminist works in India.
- He strongly advocated for family planning measures for women in the Bombay Legislative Assembly.
- Dr. Ambedkar created awareness among poor, illiterate women and inspired them to fight against unjust and social practices like child marriage and the devadasi system.
- He dedicated his efforts to the adequate inclusion of women's rights in the political vocabulary and constitution of India.

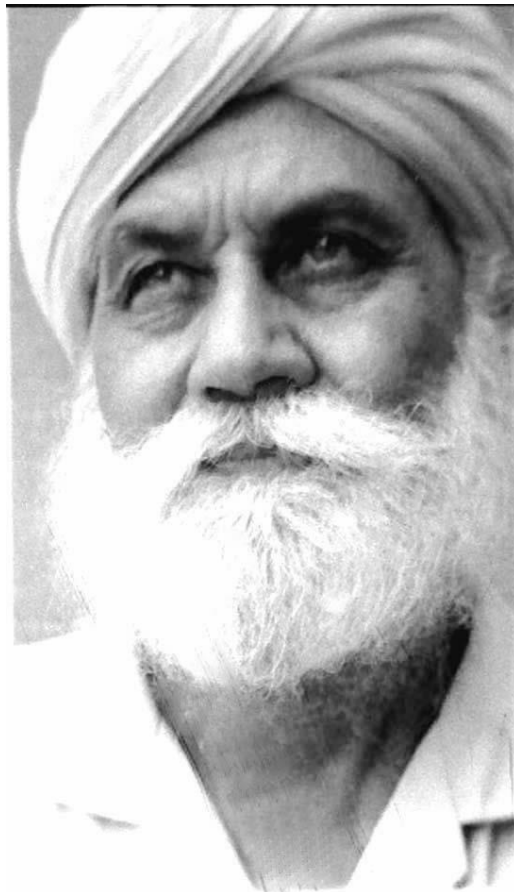
## **8. Dr. B.R. Ambedkar and his relationship with Buddhism**

- Dr. B.R. Ambedkar converted to Buddhism after attending a convention of Buddhist scholars in Sri Lanka.
- On 24 May 1956, on the occasion of Buddha Jayanti, he declared in Bombay, that he would adopt Buddhism in October.
- On October 14, 1956, he embraced Buddhism along with many of his followers.
- Dr. B.R. Ambedkar founded the Bharatiya Bauddha Mahasabha (Buddhist Society of India) in 1955 and completed his final work 'The Buddha and His Dhamma' in 1956. The book was however published posthumously.

**TEJA SINGH SUTANTAR**

## 1. Context

Punjab CM Bhagwant Mann unveiled a statue of Teja Singh Sutantar, former Sangrur MP and revolutionary leader, on April 12, at Nihalgarh village in Sangrur district. This date marks the 50th death anniversary of the CPI leader, who not only fought against colonial rule, but waged a struggle to secure the rights of the Punjab peasantry from feudal lords



## 2. About Teja Singh Sutantar

- Born in 1901 as Samund Singh in Aluna village of Gurdaspur district, Teja Singh completed his schooling and joined Khalsa College in Amritsar
- After the 1919 Jallianwala Bagh massacre, which had stirred patriotic sentiments in Punjabi youth, he joined the Akali Dal to participate in the movement of liberating gurdwaras from degenerate mahants

- However, in September 1921 , he formed his own squad called ‘sutantar jatha’ also called as *swatantar* meaning free/independent
- In its maiden attempt, the jatha successfully liberated the gurdwara in a village called Teja, in Gurdaspur district, from the mahants
- This success earned him the moniker of Teja Singh Sutantar from his supporters

### 3. Way to Revolutionary

- In early 1923 , Teja Singh went to Kabul as a Sikh missionary. There he came in contact with a few leaders of the Ghadar Party, who, at the time, were preparing for their second attempt to overthrow the British government
- The Ghadar Movement was an early 20th century international political movement founded by expatriate Indians to overthrow British rule in India
- While it would never see the success it set out for, it would be an inspiration for many freedom fighters opposed to Gandhian ideals of non-violence
- The Ghadhar leaders persuaded Teja Singh to undergo military training – thus, in 1925, he joined the Turkish military academy under the pseudonym Azad Beg
- He was eventually be granted Turkish citizenship and be commissioned into the Turkish army
- However, Teja Singh later moved to Berlin and then to Canada and the United States, where he addressed congregations of Indians, mainly Punjabi Sikh immigrants. Those who heard him described him as a fiery speaker
- After visiting several countries and briefly joining a university in Moscow in December 1934 , Teja Singh returned to India and became a prominent leader of communist party (CPI)
- He contributed revolutionary articles to the party journal, the Kirti, frequently writing about issues that plagued peasants
- On January 16 ,1936 he was arrested along with other communist leaders for his “seditious” activities
- During his confinement, he cleared examinations to obtain a BA degree from the Panjab University, Lahore

### 4. Peasant Agitations

- Due to his popularity, Teja Singh was elected unopposed to the Punjab Legislative Assembly in May 1937 as a nominee of Indian National Congress, while he was still in prison
- He continued to remain the member of Punjab Legislative Assembly till 1945. He was also secretary of Communist Party ( Punjab) from 1944- 1947
- Post-independence, Teja Singh, who a prominent leader of the Kisan Sabha, led a number of peasant agitations against the government and landlords
- He was a key leader in the PEPSU Muzara movement, which started in the 1930s and went on till 1952
- The movement was started by landless peasants (muzaras) in PEPSU (Patiala and East Punjab States Union, which included the districts of Mansa, Sangrur, Barnala, and parts of Bathinda, apart from Patiala) to obtain ownership rights of the land they had been tilling for generations
- On March 19, 1949, four farmers in the Kishangarh village in Mansa were killed by security forces of the Maharajah of Patiala. The farmers would finally receive land rights in 1952

## 5. Post Independence Politics

- After independence, Teja Singh formed his Lal (Red) Party with the Kirti group of the Punjab Communist Party as its nucleus
- The Lal Party was an active constituent of the Punjab Riyasat Praja Mandal which campaigned for the merger of the princely states into Punjab and against the tenancy law prevalent in those territories
- Due to arrest warrants issued against him for his role in the Muzara movement, he went underground for a few years while reappearing in public only in 1963, once the arrest warrants were withdrawn
- He would go on to become a member of the Punjab Legislative Council from 1964-1969
- He edited Lal Jhanda, a monthly magazine in Urdu, Lal Savera, a Punjabi weekly and contributed to various newspapers
- In 1971, he was elected to the Lok Sabha from Sangrur parliamentary constituency. He had fought on a CPI ticket. However on April 12, 1973 he died of a heart attack in the central hall of the Parliament

# GURU TEGH BAHADUR

## 1. Context

The ninth Sikh Guru, Guru Tegh Bahadur's 401st birth anniversary was celebrated across the country on April 11th, 2023.

## 2. The Early life

- The Guru was born in Amritsar in 1621 to Mata Nanki and Guru Hargobind, the sixth Sikh Guru, who raised an army against the Mughals and introduced the concept of warrior saints.
- As a boy, Tegh Bahadur was called Tyag Mal because of his ascetic nature.
- He spent his early childhood in Amritsar under the tutelage of Bhai Gurdas, who taught him Gurmukhi, Hindi, Sanskrit and Indian religious philosophy, while Baba Budha trained him in swordsmanship, archery and horse riding.
- At the age of 13, Tegh Bahadur distinguished himself in a battle against a Mughal chieftain.
- His bravery and heroic swordsmanship in the battle earned him the name of Tegh Bahadur. (Tegh is a "**sword**" in Punjabi).
- He was married to Mata Gujri at Kartarpur in 1632 and he subsequently left for Bakala near Amritsar.

## 3. Selection as the ninth Sikh Guru

- After Guru Ram Das, the fourth Sikh guru, the guruship became hereditary.
- Guru Ram Das was succeeded by his son Guru Arjan.
- After Guru Arjan was executed by the Mughal emperor Jahangir, the Guru's young son, Guru Hargobind, became the sixth Guru of the Sikhs.
- After Guru Hargobind's eldest son, Baba Gurditta, died young, the Guruship went to Gurditta's 14- year-old son, Guru Har Rai, in 1644.
- Guru Har Rai remained in the seat until his death at the age of 31 in 1661.
- Guru Har Rai was succeeded by his five-year-old son, Guru Har Krishan.
- The eighth Guru has the shortest tenure among all the Sikh Gurus and passed away in Delhi in 1664 before he could reach the age of eight.
- It is said that when asked about his successor, Guru Har Krishan only said "**Baba Bakala**".

#### 4. Significance in Sikh History

- At that time, Tegh Bahadur, who was the younger brother of Baba Gurditta (and the granduncle of Guru Har Kishan), was living in Bakala.
- He had built a "**bhora**" (basement) in his house, where he spent most of his time in meditation.
- In the ancient Indian tradition, "bhoras" were considered ideal for meditation as they were soundproof and had an even temperature.
- But since Guru Har Krishan had not directly named Guru Tegh Bahadur, many claimants cropped up.
- According to lore, Makhan Shah, a wealthy trader whose ship was caught in a storm at sea, had prayed that if it was saved he would give 500 gold mohurs (coins) to the reigning guru.
- But when he reached Delhi, he learnt that Har Krishan had passed away and there was a line of claimants at Bakala.
- It is said that he decided that whoever was the real guru would ask him for the exact sum he had promised in his prayers.
- He had exhausted his options when he was told about Tegh Bahadur meditating in the "**bhora**".
- Tegh Bahadur took look at Makhan Shah and told him that he had promised 500 coins.
- It's not wise to test your guru, An ecstatic Makhan Shah is said to have run to the rooftop and shouted "**Guru ladho re! (I have found the guru!)**".
- Soon afterwards, Tegh Bahadur moved to Kiratpur Sahib. In 1665, on the invitation of Raja Bhim Chand of Kahlur who was his devotee, he bought land at Makhawal village and renamed it Chak Nanki (now Anandpur Sahib) after his mother.

#### 5. The Times of Guru Tegh Bahadur

- Aurangzeb was the ruling Mughal emperor at the time. There were conversions either through a government order or coercion.
- When people were charged with some crime or misdemeanour, they would be pardoned if they converted.

- Guru Tegh Bahadur who started travelling extensively through Malwa and Majha, first came into conflict with the authorities when he started questioning the tradition of worshipping at the graves of pirs and faqirs.
- He preached against this practice and urged his followers to be "**nirbhau**" (fearless) and nirvair (without envy).
- His sermons delivered in a mix of Sadukhri and Braj languages were widely understood from Sindh to Bengal.
- The metaphors he used resonated with people across North India.
- Guru Tegh Bahadur often alluded to Panchali (Draupadi) and Ganika in his preachings declaring that Hindustan could regain its piety if it took refuge in one God.

## 6. The Guru and the Raja of Amer

- As his message began to spread, a local chieftain at Dhamtan near Jind in present-day Haryana picked him up on fabricated charges of collecting revenue from villagers and took him to Delhi.
- But Raja Ram Singh of Amer, whose family was a long-time follower of the Gurus intervened and kept him in his house for about two months until he convinced Aurangzeb that the Guru was a holy man with no political ambitions.
- Earlier, Raja Jai Singh of Amer had donated land for a dharamshala where the Gurus could rest while visiting Delhi. The Present-day Bangla Sahib Gurdwara is built on this site.

## 7. Guru's travels beyond Punjab

- A little more than a year after setting up his headquarters in present-day Anandpur Sahib in 1665, the Guru spent four-odd years travelling up to Dhaka in the east and going up to Puri in Odisha.
- He also visited Mathura, Agra, Benares, Allahabad and Patna, where he left his wife and her brother in the care of the local devotees. Guru Gobind Singh was born in Patna in 1666.
- While the Guru was on the way back from Dhaka, Raja Ram Singh sought his help to broker a truce with the Ahom King.

- Gurdwara Dhubri Sahib on the banks of the Brahmaputra commemorates this peace accord. The Guru was also honoured at Guwahati's Kamakhya temple.
- According to historians, the Guru rushed back to Punjab on learning about the increasing atrocities by the Mughals.

## 8. The Martyrdom of the Guru

- Back in Anandpur Sahib, the Guru was approached by **Kirpa Das**, a Kashmiri Brahmin who sought his protection with a group from the Valley.
- Kirpa Das told Guru Tegh Bahadur that local chieftains had told him to convert or face retribution.
- The Guru assured Kirpa Das and his group of his protection and told them to tell the Mughals that they should first try to convert the Guru.
- Aurangzeb considered this an open challenge to his authority.
- According to the "Sri Gur Bilas Patshahi Dasmi", a biography of Guru Gobind Singh by Kavi Sukha Singh written in 1797, the Guru himself went to Delhi where he revealed his identity and was arrested by the Mughals.
- The Aurangzeb ordered the public execution of the Guru on November 11, 1675, after the Guru refused to embrace Islam.
- He was tortured to death and beheaded at Chandni Chowk along with his three companions, Bhai Mati Das, who was torn apart, Bhai Sati Das, who was burnt alive and Bhai Dyala ji, who was put in boiling water.
- Till the very end, they were asked to change their minds, but they remained resolute. Gurdwara Sis Ganj was built on the site on which they were executed in 1783.
- There is some confusion regarding the date of Guru Tegh Bahadur's martyrdom.
- Until a decade or so ago, it used to be observed on November 11.
- However, some scholars have since sought to introduce the Nanakshahi calendar to fix dates of important events in Sikh history, the Guru's martyrdom has since been observed on November 24.
- The Islamic Hijri calendar was in force when Guru Ji was beheaded.

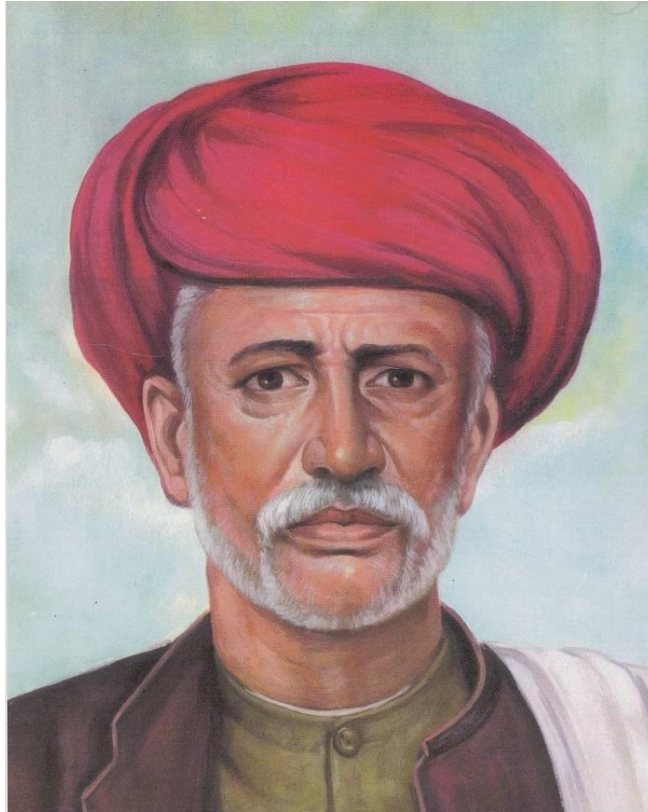
- Later, Sikh historians started relying on the lunisolar Bikrami Samvat Calender traditionally used in the Indian Subcontinent. And then the British introduced the Gregorian calendar. This led to some confusion.
- A few years ago, some Sikh scholars sought to introduce the Nankshahi calendar to fix the dates of important historical events in Sikh history but there was no unanimity on it.
- Describing his father in Vichitra Natak, Guru Gobind Singh, the Tenth Guru who founded the Khalsa wrote: "**Dharam het Saka jin kiya, sees diya par sir nahin diya (He sacrificed his life for dharma, he gave up his head but not his honour)**".

## JYOTI RAO PHULE

### 1. Context

The nation is remembering renowned social reformer, thinker, writer and anti-caste activist Mahatma Jyotiba Phule on his 196th birth anniversary. Jyotiba Phule, who played a significant role in eradicating untouchability and promoting girl education, was born on April 11, 1827

He was India's foremost social reformer, educator, and thinker. Born in Maharashtra, Mahatma Jyotiba Phule was an anti-caste social reformer who played a crucial role in eradicating untouchability and empowering society. He also made organised efforts for the rights of farmers and labourers



## 2. Childhood & Early Life

- Jyotirao Govindrao Phule was born in the Satara district of Maharashtra in 1827. His father, Govindrao was a vegetable vendor at Poona
- Jyotirao's family belonged to the 'mali' caste and their original title was 'Gorhay'. Malis was considered an inferior caste by the Brahmins and was shunned socially. Jyotirao's father and uncles served as florists, so the family came to be known as 'Phule'. Jyotirao's mother passed away when he was just nine months old
- In 1841, Jyotirao got admission in the Scottish Mission's High School, Poona, and completed his education in 1847. There, he met Sadashiv Ballal Govande, a Brahmin, who remained his close friend throughout his life. At the age of just thirteen years, Jyotirao was married to Savitribai



### 3. Social Movements

- In 1848, an incident sparked off Jyotiba's quest against the social injustice of caste discrimination and incited a social revolution in the Indian society
- Jyotirao was invited to attend the wedding of one of his friends who belonged to an upper-caste Brahmin family. But at the wedding, the relatives of the bridegroom insulted and abused Jyotiba when they came to know about his origins
- Jyotirao left the ceremony and made up his mind to challenge the prevailing caste system and social restrictions
- He believed that the enlightenment of the women and lower caste people was the only solution to combat the social evils

### 4. Efforts towards Women Education

- Jyotiba's quest for providing women and girls with right to education was supported by his wife Savitribai Phule. One of the few literate women of the time, Savitribai was taught to read and write by her husband Jyotirao
- In 1851, Jyotiba established a girls' school and asked his wife to teach the girls in the school. Later, he opened two more schools for girls and an indigenous school for the lower castes, especially for the Mahars and Mangs

- Jyotiba realised the pathetic conditions of widows and established an ashram for young widows and eventually became an advocate of the idea of Widow Remarriage
- Female infanticide was a common occurrence and so was child marriage, with children sometimes being married to men much older
- These women often became widows before they even hit puberty and were left without any family support. Jyotiba was pained by their plight and established an orphanage in 1854 to shelter these unfortunate souls from perishing at society's cruel hands

### **5. Efforts towards Elimination and Caste Discrimination**

- Jyotirao attacked the orthodox Brahmins and other upper castes and termed them as "hypocrites". He campaigned against the authoritarianism of the upper caste people and urged the "peasants" and "proletariat" to defy the restrictions imposed upon them
- He opened his home to people from all castes and backgrounds. He was a believer in gender equality and he exemplified his beliefs by involving his wife in all his social reform activities
- He believed that religious icons like Rama are implemented by the Brahmin as a means for subjugating the lower caste
- The orthodox Brahmins of the society were furious at the activities of Jyotirao. They blamed him for vitiating the norms and regulations of the society
- Many accused him of acting on behalf of the Christian Missionaries. But Jyotirao was firm and decided to continue the movement. Interestingly, Jyotirao was supported by some Brahmin friends who extended their support to make the movement successful

### **6. Satya Sodhak Samaj**

- In 1873, Jyotiba Phule formed the Satya Shodhak Samaj (Society of Seekers of Truth)
- He undertook a systematic deconstruction of existing beliefs and history, only to reconstruct an equality promoting version. Jyotirao vehemently condemned the Vedas, the ancient holy scriptures of the Hindus

- He traced the history of Brahmanism through several other ancient texts and held the Brahmins responsible for framing the exploitative and inhuman laws in order to maintain their social superiority by suppressing the "shudras" and "atishudras" in the society
- The purpose of the Satya Shodhak Samaj was to decontaminate the society from caste discrimination and liberate the oppressed lower-caste people from the stigmas inflicted by the Brahmins
- Jyotirao Phule was the first person to coin the term 'Dalits' to apply to all people considered lower caste and untouchables by the Brahmins
- Membership to the Samaj was open to all irrespective of caste and class. Some written records suggest that they even welcomed participation of Jews as members of the Samaj and by 1876 the 'Satya Shodhak Samaj' boasted of 316 members
- In 1868, Jyotirao decided to construct a common bathing tank outside his house to exhibit his embracing attitude towards all human beings and wished to dine with everyone, regardless of their caste

### 7. Literary Works

Jyotiba had penned a number of literary articles and books in his lifetime and most were based on his ideology of social reforms like the '**Shetkarayacha Aasud**'. He also penned some stories like '**Tritiya Ratna**', '**Brahmananche Kasab**', '**Ishara**'

He wrote dramas like '**Satsar**' Ank 1 and 2, which were enacted under his directives to spread awareness against social injustice

He also wrote books for the Satyashodhak Samaj that dealt with history of Brahminism and outlined Puja protocols that the lower caste people were not allowed to learn

### General Studies I: World Geography

## POPULATION BOMB

## 1. Context

On March 27, 2023, Beniamino Callegari, associate professor at Kristiania University College, Oslo, and a member of the Earth4All modeling team, and Per Espen Stoknes, Earth4All project lead and director of the Centre for Sustainability at the BI Norwegian Business School, published their predictions about the world's human population in the form of a report by the Earth4All Initiative.

## 2. Background

- This comes five decades after reports in which some economists blamed, among other things, the planet's expanding human population for its many problems.
- The two researchers have revisited them and revised the original population predictions.
- The effort is notable for how women's reproductive rights and population control have emerged in contemporary political discourse, as well as the useful contradictions they strike with more recent reports pertaining to development policy.

## 3. What does the new report find?

- In the new Earth4All Initiative report, the researchers set aside population-modelling approaches adopted by the UN, the Wittgenstein Centre (sponsored by the European Union), The Lancet, and integrated assessment models.
- Instead, they modelled birth rates explicitly and causally as a function of GDP per person, which shows “a negative correlation between income and fertility rate”.
- In this context, the per-capita GDP is a “proxy” for female education and socio-economic mobility, among other factors.
- Based on such modelling, the researchers advanced two scenarios.
- The first, called “Too Little, Too Late”, predicted that if economic development continues as it has in the last five decades, the world's population would peak at 8.6 billion in 2050, roughly 25 years from now, and decline to 7 billion by 2100.

- In the second scenario, called “The Giant Leap”, the researchers concluded that the population will peak at 8.5 billion by 2040-a decade sooner than 2050- but then rapidly decline to around 6 billion by 2100.
- This, they said, will be due to our investments in poverty alleviation, gender equity, education and health, ameliorating inequality, and food and energy security.

#### 4. To quote from the Report

- The policies supporting the Giant Leap scenario represent a pathway towards fully returning human pressures on the planetary systems to the safe zone in civilisation’s long-term view, hopefully, before irreversible planetary declines are triggered.
- However, recovery is most plausible only for some of the planetary boundaries, such as nutrient overloading, ozone depletion, ocean acidification, and air pollution.
- Even in the Giant Leap scenario, although mitigation happens across the board, many of Earth’s life-supporting systems cannot be fully returned to a safe operating space by even 2100.
- The report clarified that these population predictions are more optimistic than the kind of historic fear-mongering and regressive development policies engendered by the ‘population bomb’ metaphor.
- It also stated that population alone was never the problem for sustainability, nor will it be for the climate crisis.

#### 5. What do the findings mean?

- Essentially, the findings proposed that the better and more equitable policies we make today, the lower the earth’s human population will be later this century.
- However, the researchers have been cautious to warn that a declining population alone won’t address the issues surrounding the climate crisis.

## 6. The Earth4All report

- The Earth4All report is entitled ‘People and Planet, 21st Century Sustainable Population Scenarios and Possible Living Standards Within Planetary Boundaries’.
- Aside from its predictions, it is notable because it revisits the premise of the 1968 book (The Population Bomb by Anne and Paul Ehrlich) and a 1972 report, and a later book (The Limits to Growth), in which the authors made population a focus of global development policy.
- But Dr Callegari and Dr Stoknes have been clear that humankind’s impact on the environment is not driven by population numbers but instead by the luxurious consumption of the richest people.
- The duo also wrote that the equitable distribution of resources (as currently available) globally can alleviate extreme poverty, even exceeding the United Nations’ minimum levels.

## 7. How does it compare to other reports?

- As it happens, the report also contradicted the UN's World Populations Prospects 2022 report. which predicted that the global population would steadily rise to 10.4 billion in 2080 and then stabilise around that number in 2100.
- The UN report also said that India would surpass China as the most populous country in 2023.
- This, alongside our own National Family Health Survey, which most recently estimated India's total fertility rate to be 2.1 (Lower in urban centres).
- These scenarios present India with a unique challenge on the one hand, it will have a very large 'young population (18-35 years old) that is also un or under-employed, but on the other, it is dealing with rapidly declining fertility and a skewed women-to-men demographic ratio.
- Population predictions and the kind of politics, scholarship, and policies they engender are wearing thin.
- Population size, especially in post-colonial nations, has become a locus for international aid agencies as well as for local elite narratives of “small families, happy families” leading to “modern nations”.

- These narratives essentially blame the poor for the conditions of their everyday lives and further disenfranchise them from the polity.
- The local and global focus on population and fertility control through various (sometimes draconian) measures has been a reality for women in India for generations, including the nasbandi ka waqt (time for sterilisation), various State-level rules preventing people from holding public office if they have ‘too many’ children, and the recent, but now withdrawn, population control Bills.
- The ‘population bomb’ narratives mobilised many policies and behaviours that shaped the reproductive lives of generations of Indian women but that bomb never was.
- Instead, the spectre of the bomb haunts Indian women’s collective memories of reproductive justice (or lack thereof).

## 8. Contradictions between UN Report and Earth4All Report

- The contradictions between the UN report and the Earth4All 2023 report are helpful because they allow us to imagine and address the conditions proposed by different studies.
- They also inform scholarship, activism, and policies that safeguard women’s health and well-being in all possible scenarios.
- The differing global projections, in light of India’s local reality, should finally enable us to draft policies that are future-facing, help tap into our ‘demographic dividend’, and plan for a cultural change wherein women can make decisions about their reproductive lives in safe, healthy, and nourishing environments.
- In fact, three reports in the last two years the UN report, India’s latest National Family Health Survey, and the Earth4All report can be productive and generative grounds for Indian policymakers as we consider some vital questions about our collective futures.

## EL NINO IN 2023

## 1.Context

India has had four consecutive years of good monsoons and overall rainfall from 2019 to 2022. In these four years, the country as a whole received an average area-weighted rainfall of 1,268 millimetres (mm) annually and 933.1 mm over the four-month southwest monsoon season (June-September)

## 2.Background

- By contrast, the preceding five years from 2014 to 2018 registered an average annual rainfall of just 1,072.1 mm and 812.4 mm during the southwest monsoon
- The surplus precipitation – more than the “**normal**” or historical long period annual average of 1,160.1 mm and 868.6 mm for the monsoon season – during the last four years has helped deliver higher agricultural growth, relative to the previous period that recorded poor rain in three (2014, 2015 and 2018) out of the five years
- According to the national accounts data, the farm sector has grown by an average of 4.3% per year during 2019-20 to 2022-23 (the Modi government’s second term), as against 3.2% during 2014-15 to 2018-19

## 3. La Nina Bounty rain

- The bountiful rainfall during 2019-22 has been significantly attributed to La Niña – an atmospheric wind and sea surface temperature (SST) variability phenomenon occurring over the equatorial Pacific, but causing worldwide weather disruptions
- La Niña basically refers to an abnormal cooling of the central and eastern Pacific Ocean waters off the coasts of Ecuador and Peru
- Such cooling (SSTs falling 0.5 degrees Celsius or more below a 30-year average for at least five successive three-month periods) is a result of strong trade winds blowing west along the equator, taking warm water from South America towards Asia

- The warming of the western equatorial Pacific, then, leads to increased evaporation and concentrated cloud-formation activity around that region, whose effects may percolate to India as well
- The latest La Niña event was one of the longest ever, lasting from July-September 2020 to December-February 2022-23
- And it brought copious rains to India – just as two previous “strong” La Niñas in 2007-08 and 2010-11, followed by one “moderate” episode in 2011-12, had done
- The most recent Oceanic Niño Index or ONI value a three-month running-average SST deviation from the normal in the east-central equatorial Pacific **was minus 0.4 degrees Celsius for January-March 2023**
- Since La Niña is characterised by a negative ONI exceeding or equal to minus 0.5 degrees, it means that the so-called ENSO (El Niño-Southern Oscillation) cycle has entered a “neutral” phase

#### 4. Threats by El Nino

- While La Niña is associated with good rainfall in India, this isn't the case with El Niño – the opposite “warm” phase of ENSO
- During El Niño, the trade winds weaken or even reverse: Instead of blowing from east (South America) to west (Indonesia), they could turn into westerlies
- As the winds blow from the west to east, they cause the masses of warm water to move into the central and eastern equatorial Pacific Ocean
- The rise in SSTs there, thus, produces increased rainfall along western Latin America, the Caribbean and US Gulf Coast, while depriving Southeast Asia, Australia and India of convective currents
- The ENSO cycle, as already pointed out, is currently in the “neutral” state
- According to the US National Oceanic and Atmospheric Administration's most recent **update**, ENSO-neutral conditions are likely to “persist through the Northern Hemisphere early summer 2023”
- However, “a transition to El Niño is favoured by July-September 2023”, with its chances “increasing through the fall (September-November)”
- The Australian Bureau of Meteorology, too, has forecast “a 50% chance that an El Niño may develop later in 2023”

- This is “about twice the normal likelihood”, the agency has said in its **report**, adding that “warmer than average SSTs have already emerged in parts of the eastern tropical Pacific in recent weeks”
- The India Meteorological Department is scheduled to issue its first long-range forecast of rainfall for the 2023 southwest monsoon in the coming week

## 5. Implications

- Most global models are seeing the transition from ENSO-neutral to El Niño happening this year
- But that would probably affect the monsoon only in the second half (August-September) of the season
- It shows that practically all drought years in India since Independence – marked by large declines in foodgrain production or monsoon failures – have witnessed El Niño events of varying intensity
- The sole exception was 1966-67, although the year before had recorded a “strong” El Niño (To elaborate, mean SSTs have to be at least 0.5 degrees Celsius higher than the average for a minimum of five overlapping three-month periods to qualify as an El Niño event)
- The positive ONI values or SST deviations have to be 1.5-1.9 degrees for categorisation as “strong”, above 2 degrees for “very strong”, 1-1.4 degrees for “moderate” and 0.5-0.9 degrees for “weak”)
- While all drought years have invariably been El Niño years, the reverse doesn’t hold true though. Another table below gives a list of all the El Niño years that weren’t bad agriculture years
- The best examples are 1982-83 and 1997-98. Foodgrain output fell only marginally in these two “very strong” El Niño years
- Agricultural GDP growth was similarly positive in 1951-52, 1963-64, 1968-69 and 1994-95; all of them saw “moderate” El Niño events
- To sum up, 2023 could well end the run of good rainfall years since 2019. The statistical probability of that is high, whether or not there is an El Niño. Moreover, El Niño itself can turn out to be “weak”

## General Studies II: Governance

# VIBRANT VILLAGES PROGRAMME

### 1. Context

Recently, Union Home Minister Amit Shah was in Arunachal Pradesh for the launch of the Vibrant Villages Programme (VVP) in the border village of **Kibithoo**.

The constant threat along the country's border amid the ongoing standoff with China has led to a concerted push to upgrade infrastructure in the border areas.

To this end, the Union Cabinet on February 15 approved the allocation of Rs 4, 800 crores for the Centre's Vibrant Villages Programme.

### 2. Importance of Kibithoo village

- The Strategically key Kibithu military garrison on the banks of Lohit Valley along the Line of Actual Control and a Key road in this mountain hamlet.
- The military garrison looks after the Line of Actual Control (LAC) in the sensitive sector.
- Chinese People's Liberation Army's Rima Post is just opposite the Indian garrison.
- Nestled in the mountainous and arduous terrain of the **Lohit Valley**, Kibithu is located near the LAC and is the easternmost military garrison of India.
- The small hamlet is inhabited by **Meyor and Jarkin Tribes**. Recently It was named after **India's first Chief of Defence Staff Gen Bipin Rawat**.
- Lack of surface connectivity with the nearest road head at Meshai precluded movement to Kibithu which was air maintained till as late as 1997.
- A foot suspension bridge (FSB 17) was the sole link to the eastern bank of the **Lohit River**.

- The garrison is considered very important for its strategic location.
- Kibithu was first occupied by 2 Assam Rifles in December 1950 with one platoon. In 1959, the post was further strengthened with an additional Platoon.
- Kibithu endured the initial onslaught of Chinese aggression during the 1962 **Sino-India War**.

### 3.. About Vibrant Villages Programme

- This village development scheme was first announced in the 2022 Budget.
- The programme's targets are to provide comprehensive development of villages on the border with China and improvement in the quality of life of people living in identified border villages.
- The development in these villages will help prevent migration and thus also boost security.
- The Parliamentary Standing Committee in 2018 pointed towards backwardness, illiteracy and lack of basic facilities and infrastructure in our border areas. The VVP aims to address all these issues.

### 3. States come under VVP

- Under this centrally sponsored scheme, 2, 967 villages in 46 blocks of 19 districts have been identified for comprehensive development.
- These villages border the states of Arunachal Pradesh, Sikkim, Uttarakhand and Himachal Pradesh and the Union Territory of Ladakh.
- In the first phase, around 662 villages have been identified for priority coverage.

### 4. Funds allocated for the programme

- According to Shah, a population of about 1.42 lakh people will be covered in the first phase.
- Under the programme, the government has allocated Rs 4, 800 crores for infrastructure development and to provide livelihood opportunities in the border areas.
- Out of the total outlay, Rs 2, 500 crores will be spent exclusively on the creation of road infrastructure.
- The total outlay is for financial years 2022-23 to 2025-26.
- There is a conscious effort to not overlap VVP with the Border Area Development Programme.

## 5. Objectives of the scheme

- The scheme aims to identify and develop the economic drivers based on local, natural, human and other resources of the border villages as per a press release by the Ministry of Home Affairs on February 15, 2023.
- Development of growth centres on the "**Hub and Spoke Model**" through the promotion of social entrepreneurship and empowerment of youth and women through skill development is also one of the objectives of VVP.
- Moreover, the programme also intends to leverage tourism potential through the promotion of local, cultural and traditional knowledge and heritage in the border areas, thus increasing the employment opportunities of the people and as a result, stemming migration.
- Development of sustainable eco-agribusinesses on the concept of "**one village-one product**" through community-based organisations, cooperatives, SHGs, NGOs etc are also aimed.
- The district administration will prepare action plans with the help of Gram Panchayats for the identified villages to ensure 100 per cent saturation of Central and State schemes.
- The scheme envisages that drinking water, 24×7 electricity, connectivity with all-weather roads, cooking gas and mobile and internet connectivity be made available in the border areas.
- Special attention will be given to solar and wind energy, tourist centres, multi-purpose centres and health infrastructure and wellness centres.
- Under this programme, the development work of villages will be done at 3 levels.

- The Government of India will take care of the facilities of every person living in the villages and the benefits of various schemes will be delivered to the people.
- There will not be a single house in the border villages which does not have basic amenities.

## MATERNITY BENEFIT TO ADOPTIVE MOTHERS

### 1. Context

The Supreme Court Wednesday agreed to hear a petition challenging the constitutional validity of Section 5(4) of the Maternity Benefit Act, 1961, which states that a woman who legally adopts a child below three months old will be entitled to 12 weeks of maternity leave

The petition challenges Section 5(4) of the Act on grounds of being “discriminatory” and “arbitrary” towards adoptive mothers and orphaned children over three months

### 2. About this 'Provision'

- The original 1961 legislation did not have specific provisions for mothers who adopt, and these were inserted with the 2017 amendment to the Maternity Benefit Act
- According to Section 5(4) of the amended Act, “A woman who legally adopts a child below the age of three months or a commissioning mother shall be entitled to maternity benefit for a period of twelve weeks from the date the child is handed over to the adopting mother or the commissioning mother, as the case may be.”
- The term “commissioning mother” refers to a surrogate mother and has been defined as “a biological mother who uses her egg to create an embryo implanted in any other woman.”
- A woman adopting a child older than three months gets no benefits
- The PIL challenges this provision on grounds of being “discriminatory” and “arbitrary” towards adoptive mothers

- “Section 5(4) apart from being discriminatory and arbitrary towards the adoptive mothers, also arbitrarily discriminates against orphaned, abandoned or surrendered children above the age of three months, which is completely incompatible to the object of the Maternity Benefit Act as well as the Juvenile Justice Act,” the plea contends
- Dubbing the purported benefit of 12 weeks’ maternity leave as “mere lip service”, the petition also states that when compared to the 26 weeks’ benefit for biological mothers, the provision fails to stand the basic scrutiny of Part III of the Constitution, which is linked to the concept of non-arbitrariness

### 3. Maternity benefit Act 1961

- The Maternity Benefit Act was originally passed by Parliament on December 12, 1961, to regulate the employment of women in “certain establishments” for the period before and after childbirth and “to provide for maternity benefit and certain other benefits.”
- Originally it applied to every establishment “being a factory, mine or plantation” and later in 1973, it was extended to “any such establishment belonging to Government” and “every establishment where persons are employed for the exhibition of equestrian, acrobatic and other performances.”
- It repealed the Mines Maternity Benefit Act, 1941 and Maternity Benefit Act, 1929
- Section 4 of the 1961 Act prohibited the employment of or work by women during a certain period and under sub-section (1) stated, “No employer shall knowingly employ a woman in any establishment during the six weeks immediately following the day of her delivery or her miscarriage.”
- The right to paid maternity leaves was also given under Section 5 of the 1961 Act, although the period of such leave could not exceed twelve weeks, “that is to say, six weeks up to and including the day of her delivery and six weeks immediately following that day.”
- Additionally, no woman could be allowed to avail maternity benefits if she had not worked in the establishment for at least “one hundred and sixty days in the twelve months immediately preceding the date of her expected delivery.”

- These benefits would be allowed without dismissing the female worker from service or reduction of wages
- Violating provisions of the Act could result in three months' punishment, with or without a fine
- On March 9, 2017, the Maternity Benefits (Amendment) Act 2017, was passed by Parliament, which brought about key changes to the original Act

#### **4. Amendments in 2017**

- The Maternity Benefit (Amendment) Act, 2017 amended Section 5 of the erstwhile Act to allow 26 weeks of paid leave after childbirth, although only to biological mothers
- The amendment also inserted Section 5(4) which said that adoptive or surrogate mothers legally adopting a child below three months will be entitled to a maternity benefit period of 12 weeks from the date the child is handed over to the mother
- Further, it inserted provisions to allow women to work from home under Section 5(5) which said, "...Where the nature of work assigned to a woman is of such nature that she may work from home, the employer may allow her to do so after availing of the maternity benefit for such period and on such conditions as the employer and the woman may mutually agree."
- Under the amended Act, Section 11 was also inserted to say that, "Every establishment having fifty or more employees shall have the facility of creche within such distance as may be prescribed, either separately or along with common facilities."
- It is also mandated that the employer allows four visits a day to the creche by the woman as well as rest intervals for her
- However, a much-received criticism of this Act is that it does not apply to the unorganised sector

#### **5. Applicability to Sectors**

- Women in the unorganised sector cannot avail the benefits of the Maternity Benefit(Amendment) Act 2017
- In 2020, a report by TeamLease – a human resource company, revealed that even three years after the amendment Act was passed, it was yet to "deliver a positive impact on job opportunities for women."

- Besides this, the report said that women's participation dropped in more than five out of 10 sectors since the implementation of the Act
- The report suggests that 7 out of the 10 sectors reviewed were expected to show positive momentum in women workforce participation in the medium term (1-4 years) owing to the Act
- However, 5 of the 10 sectors are lagging, and instead indicating a drop in the share of women in their workforce, as per the report
- After maternity, women face several challenges. Most of the women (30 per cent) cited wage cuts followed by resistance or lack of support from family (25 per cent) and access to childcare (20 per cent), as per the report.

## **SERIOUS FRAUD INVESTIGATION OFFICE (SFIO)**

### **1. Background**

The Serious Fraud Investigation Office is a statutory corporate fraud investigating agency in India.

As per the Companies Act, 2013, the Serious Fraud Investigation Office (SFIO) has been set up by the Government of India

It is a multi-disciplinary organisation under the Ministry of Corporate Affairs, comprising experts in the fields of accountancy, forensic auditing, banking, law, information technology, investigation, company law, capital markets and taxation etc. for detection and prosecution . Recommending prosecution of white-collar crimes/frauds

### **2. Objectives**

**Take up for investigation cases characterized by:**

- Complexity and having inter-departmental and multi- disciplinary ramifications
- Substantial involvement of public interest to be judged by size, either in terms of monetary

- The possibility of investigation leading to or contributing towards a clear improvement in systems, laws or procedures

### 3. Investigations

- Investigation into the affairs of a company is entrusted to the SFIO where the Government is of the opinion that it is necessary to investigate into the affairs of the company:
- On receipt of the report of the Registrar or Inspector under section 208 of the Companies Act, 2013
- On intimation of a special resolution passed by a company that its affairs are required to be examined
- In the public interest; or at the request of any department of the Central Government or a State Government

### 4. Composition

- The SFIO is headed by a Director in the rank of Joint Secretary to the Government of India as Head of the Department
- The Director is assisted by Additional Directors, Joint Directors, Deputy Directors, Senior Assistant Directors, Assistant Directors Prosecutors and other secretarial staff
- SFIO is headquartered in New Delhi with five regional offices at Mumbai, New Delhi, Chennai, Hyderabad and Kolkata

## HISTORY OF TRAIN TO KASHMIR

### 1. Context

Railway Minister Ashwini Vaishnaw said last month that a **Vande Bharat Express will run between Jammu and Kashmir “in December [2023] or**

**January-February next year”** after work on the 272-km Udhampur-Srinagar-Baramulla Railway Line (USBRL) is completed

## **2.History of the Project**

- The line will connect Srinagar and Baramulla in the Valley with the rest of the country by train, and will provide a reliable and cost-effective all-weather alternative to the Jammu-Srinagar national highway that is frequently shut down by landslides
- The first railway line in the former princely state of Jammu and Kashmir was built by the British in 1897 over a distance of 40-45 km between Jammu and Sialkot in the plains
- In 1902 and 1905, a railway line was proposed between Rawalpindi and Srinagar along the course of the Jhelum, which would have connected the Kashmir Valley with the railway network of undivided India
- But Maharaja Pratap Singh of Jammu and Kashmir was in favour of a Jammu-Srinagar line via Reasi, and neither project progressed
- After Partition, Sialkot went to Pakistan, and Jammu was disconnected from India's rail network. Until the inauguration of the Pathankot-Jammu line in 1975, the railway station nearest to Jammu and Kashmir was Pathankot in Punjab
- In 1983, work began on a railway line between Jammu and Udhampur
- The project, which was completed in 2004, has 20 major tunnels, the longest of which is 2.5 km long, and 158 bridges, the highest of which is 77 m high
- With work underway on the Jammu-Udhampur line, the government of Prime Minister P V Narasimha Rao in 1994 announced the extension of the line from Udhampur to Srinagar, and then Baramulla
- This was the USBRL project, which was approved in March 1995 at an estimated cost of Rs 2,500 crore



### 3. Challenges & Innovations

- The Himalayas are young, and the geologically unstable Shivalik Hills and Pir Panjal mountains lie in the seismically most active Zones IV and V
- The terrain is difficult and sees heavy snow in winter, and presented serious challenges in the construction of bridges and tunnels
- More than 205 km of motorable roads — including a tunnel and 320 bridges — were built at a cost of Rs 2,000 crore to transport heavy machinery, construction material, and workers to construction sites, many of which were on sheer mountain faces at inclines of 70 degrees or more
- In view of the challenges in the construction of highly complex tunnels and huge bridges in unstable mountainous terrain, engineers of the Railways devised a novel Himalayan Tunneling Method (HTM), in which horseshoe-shaped tunnels were constructed instead of the usual D-shaped ones



## 5. Benefits of the Project

- The train will bring down the travel time between Srinagar and Jammu to between three and three-and-a-half hours from the five to six hours that it takes by road currently
- According to Railway Minister Vaishnaw, the Vande Bharat trains will allow people to travel from Jammu to Srinagar and return that same evening
- The train will benefit the people of Kashmir by facilitating hassle-free transport of goods such as apples, dry fruits, pashmina shawls, handicrafts etc., to other parts of the country in the shortest possible time and at lesser cost
- The cost of transporting items of daily use to the Valley from elsewhere in the country is also expected to go down significantly

# ONLINE GAMING: CENTRE VS TAMILNADU

## 1. Context

The state's assembly **passed** the Tamil Nadu Prohibition of Online Gambling and Regulation of Online Games Ordinance, 2022 last October. However, in early March, Governor RN Ravi returned the ordinance for reconsideration. A few weeks later, the assembly readopted the Bill and sent it to Raj Bhavan once again

State laws on online gaming are a pain-point that many in the industry are foreseeing. They have also raised these concerns with the Ministry of Electronics and IT (MeitY), which is now the nodal agency for the sector. They are also likely to challenge Tamil Nadu's measure in court once it is notified by the state government

## 2. Tamilnadu's law on Online Gambling

- The Bill prohibits online gambling and online games of chance played for money or other stakes
- While it specifically names Rummy and Poker as games of chance, it can go much wider in scope
- It defines online games of chance as those where both an element of chance and skill are involved, and the element of chance dominates over the element of skill; games are presented as games of chance; the element of chance can only be eliminated by superlative skill; or games involve cards, dice, or wheel which work on random event generators
- It also establishes the Tamil Nadu Online Gaming Authority and empowers it to regulate online gaming companies
- Companies that are based outside the state are required to follow specified due diligence or restrict access to prohibited games for people in Tamil Nadu
- The state's proposed gaming authority will identify games of chance and recommend them to be included in the Schedule of prohibited games.
- It is worth noting that the state's Governor gave his assent to the Bill hours after the legislative assembly passed a resolution against him for indefinitely withholding assent to several bills

## 3. Online Gaming: Centre vs Tamilnadu

- Aside from the state assembly's resolution against the Governor, the timing of the development is also particularly significant given that his assent to the Bill comes just days after the Centre notified amendments to the Information Technology Rules, 2021, which brought in rules for regulating online real money games

- According to the Ministry of State for Electronics "State governments' regulating online gambling is not required any more after the IT rules for online gaming have been notified"
- Online gaming companies had raised concerns around state governments passing competing legislations which could potentially go against norms prescribed under Centre's rules
- According to MeitY gambling is a state subject, activities that occur on the Internet including online gambling and gaming fall exclusively in its domain to regulate

#### 4. Centre's Norms for Online Gaming

- The fresh changes require the setting up of multiple self-regulatory bodies (SRBs) whose approval will be required for online games with a monetary element. Games that involve wagering on outcomes of events will not be allowed
- Online gaming companies will also have to complete a KYC procedure for users when they first make a deposit in their accounts to play a game
- KYC norms laid down by the Reserve Bank of India (RBI) for its regulated entities will have to be followed by them
- All India Gaming Federation (AIGF) challenged the constitutional validity of Tamil Nadu's Bill at the Madras High Court. However, at the time, the state government had said that it was yet to notify the Bill as a law, following which the court had allowed AIGF to withdraw its petition with the liberty to file it once the law is in effect

## MINISTRY OF TRUTH

### 1. Context

Despite a barrage of criticism and concerns, the Centre has decided to create a regulatory regime that will allow a fact-checking body it appoints to label content

related to the government on online platforms like Facebook and Twitter as "**fake**" or "**misleading**".

## 2. Key Points

- Content marked as such by the body will have to be taken down by online intermediaries if they wish to retain their "safe harbour", which is the legal immunity they enjoy from third-party content.
- The Ministry of Electronics and IT notified amendments to the Information Technology Rules, 2021, which allows the ministry to appoint a fact checking body who will take a call on whether online information related to the Central Government is accurate.
- The final rules come months after the Ministry, in January, had first proposed that any piece of news that has been identified as "**fake**" by the fact-checking unit of the Press Information Bureau (PIB) the Centre's nodal agency to share news updates will not be allowed on online intermediaries. However, the final draft has removed the reference to PIB.

## 3. Final rules

- On paper, what the final rules now say is that an online intermediary including social media platforms like Facebook, Youtube and Twitter and internet service providers like Airtel, Jio and Vodafone Idea should make "**reasonable efforts**" to not host content related to the Central Government that is "**identified as fake or misleading**" by a "**fact check unit**" that may be notified by the IT ministry.
- In essence, if any piece of information is marked as fake by the upcoming fact check unit, intermediaries will be required to take it down, failing which they would risk losing their safe harbour, which protects them from litigation against third-party content.
- Social media sites will have to take down such posts and internet service providers will have to block URLs of such content.

## 4. Concerns with the new rules

- Civil society groups have said that the rules could hamper speech online.

- The notification of these amended rules cements the chilling effect on the fundamental right to speech and expression, particularly for news publishers, journalists, activists etc.
- The fact check unit could effectively issue a takedown order to social media platforms and even other intermediaries across the internet stack, potentially bypassing the process statutorily prescribed under Section 69A of the IT Act, 2000.
- The notified amendment, unlike the previous proposal, does not designate the Press Information Bureau as the appropriate fact-checking agency, its ultimate effect is the same.

## 5. Concerns around censorship

- Minister of State for Electronics and IT Rajeev Chandrasekhar "**assured**" that the government-backed fact check body will work credibly, in a bid to address the concerns.
- The agency will certainly be very clear that any doubts in the mind of people that the power will be misused on behalf of the government will be addressed. There will be a list of dos and don'ts that it will have to adhere to.
- It will not be business as usual, where it will be a government department type of organisation.
- It certainly wants to conduct fact checks credibly and that is not just for the government but also for the intermediary that is going to depend on that particular fact check.

## 6. Criticism

- The Editors Guild of India had said that the "determination of fake news cannot be in the sole hands of the government and will result in censorship of the press.
- The News Broadcasters & Digital Association said it will "have a chilling effect on the media and should be withdrawn.

# COASTAL AQUACULTURE BILL 2023

## 1. Context

The Government recently introduced the Coastal Aquaculture Authority (Amendment) Bill, 2023, through its Union Minister of Fisheries, Animal Husbandry, and Dairying, Parshottam Rupala.

## 2. Key Provisions of the Bill

- The Bill seeks to amend certain provisions of the Coastal Aquaculture Authority Act, 2005, and decriminalize offenses under it for promoting ease of doing business and fine-tuning the operational procedures of the Coastal Aquaculture Authority.
- Besides amending the Coastal Aquaculture Authority Act, 2005, the Bill seeks to clarify that coastal aquaculture and activities connected therewith shall continue to be regulated by the Coastal Aquaculture Authority Act and no other Acts.
- It aims to promote newer forms of environment-friendly coastal aquaculture such as cage culture, seaweed culture, bi-valve culture, marine ornamental fish culture, and pearl oyster culture, which, it adds, has the potential for creating employment opportunities on a large scale for coastal fisher communities and especially fisherwomen.
- It also aims to encourage the establishment of facilities in areas having direct access to seawater to produce genetically improved and disease-free broodstocks and seeds for use in coastal aquaculture.
- Moreover, the Bill seeks to prevent the use of antibiotics and pharmacologically active substances, which are harmful to human health in coastal aquaculture.

## 3. What is Coastal Aquaculture?

- Under Section 2 (1)(c) of the 2005 Act, “coastal aquaculture” means culturing or cultivating, under controlled conditions in ponds, pens, enclosures, or otherwise, in coastal areas, of shrimp, prawn, fish, or any

other aquatic life in saline or brackish water; but does not include freshwater aquaculture.

- The 2023 Bill seeks to broaden the definition of coastal aquaculture or coastal aquaculture activity to mean rearing and cultivation of any life stages of fish, including crustacean, mollusc, finfish, seaweed, or any other aquatic life under controlled conditions, either indoor, outdoor, in cement cisterns, ponds, pens, cages, rafts, enclosures or otherwise in saline or brackish water in coastal areas, including activities such as the production of broodstock, seed, grow out but does not include freshwater aquaculture.

#### 4. Provisions for Biosecurity

- The bill also includes new provisions for biosecurity, which refers to measures and strategies for analyzing, managing, and preventing the risk of introducing or spreading harmful organisms like viruses and bacteria within the coastal aquaculture unit, which could lead to infectious diseases.
- It provides for the introduction of a “Brood Stock Multiplication Centre” which receives “post-larvae or juveniles which are specifically pathogen-free” or tolerant or resistant to such pathogens or other post-larvae or juveniles from a “Nucleus Breeding Centre”, to be reared under strict biosecurity and disease surveillance.
- Many of these biosecurity measures also find a mention in the 2015 Guidelines for Regulating Establishment and Operation of SPF Shrimp Broodstock Multiplication Centers, published by the National Fisheries Development Board, which is part of the Department of Animal Husbandry, Dairying, and Fisheries, which used to be a part of the Ministry of Agriculture and Farmer's Welfare.
- Formed in 1991, the Department of Animal Husbandry, Dairying, and Fisheries (DAHDF) was earlier responsible for overseeing matters related to animal husbandry, dairy, and fisheries. It advised states and UTs on the formulation of policies and programs.
- Department of Animal Husbandry and Dairying was subsumed under the newly created Ministry of Fisheries, Animal Husbandry & Dairying.

## 5. What is the Coastal Aquaculture Authority Act, of 2005?

The act provides for the establishment of the Coastal Aquaculture Authority for regulating the activities connected with coastal aquaculture in coastal areas and matters connected therewith or incidental thereto.

The Act mandates Central Government

- To take all such measures as it deems necessary or expedient for the regulation of coastal aquaculture by prescribing guidelines.
- To ensure that coastal aquaculture does not cause any detriment to the coastal environment and
- The concept of responsible coastal aquaculture shall be followed in the regulation of coastal aquaculture activities to protect the livelihood of various sections of people living in the coastal areas.

## 6. Coastal Aquaculture Authority

Section 4 of the 2005 Act allowed the Centre to establish an authority called the Coastal Aquaculture Authority to regulate coastal aquaculture activities in the coastal areas, which would consist of a chairperson who is a current or former HC judge, a coastal aquaculture expert and members nominated by the Central Department of Ocean Development, Ministry of Environment and Forest, Ministry of Agriculture, Ministry of Commerce along with four members representing Coastal states on a rotational basis and one member secretary.

## 7. What did the Coastal Aquaculture Authority Act Bill 2022 propose?

- The Coastal Aquaculture Authority (Amendment) Bill, 2022, which the government proposed to bring last year, sought to revise the provisions of the principal 2005 Act to reduce the regulatory compliance burden on stakeholders without diluting the core principles of environmental protection in coastal areas.
- It also proposed to decriminalize offenses under the Act and expand the scope of the law to bring all coastal aquaculture activities under its ambit.
- It also proposed to exempt shrimp hatcheries from the application of the 1991 Coastal Regulation Zone notification by amending Section 13(8) of the

2005 Act, which prohibited coastal aquaculture within no-development zones, and Section 27 to exempt the entire coastal aquaculture from the purview of the 1991 notification.

# NATIONAL CURRICULUM FRAMEWORK

## 1. Context

Recently the Ministry of Education released the pre-draft of the National Curriculum Framework (NCF) for school education for public feedback on the recommendations will be finalised after further rounds of discussions involving the national steering committee led by former ISRO chairperson K Kasturirangan developed it.

The school system in India may undergo a major restructuring with an expert committee appointed by the Union government recommending board examinations twice a year, a semester system for class 12 and freedom for students to pursue a mix of science, humanities and commerce subjects among others.

## 2. About NCF

- The NCF, which was last revised in 2005 is a key document based on which textbooks are prepared.
- So the current set of NCERT textbooks, barring the deletions are all based on the NCF 2005.
- Before 2005, the NCF was revised thrice, including once under the NDA government led by Atal Bihari Vajpayee.

## 3. Draft Framework

- Under the latest round of revision, a draft framework on early childhood care and education and school education has already been prepared, while work on teacher and adult education is underway.

- Apart from textbooks, the NCF, after its adoption by the CBSE and other state boards will also restructure various other aspects of the classroom, including the choice of subjects, the pattern of teaching and assessment.

#### 4. Proposed Changes

- Among the most significant recommendations in the draft NCF on school education are about the choice of subjects and exams in classes IX-XII.
- Over two years, in classes IX and X, the students will have to study 16 courses categorised under eight curricular areas.
- The suggested curricular areas are Humanities (that includes languages), Mathematics & Computing, Vocational Education, Physical Education, Arts, Social Science, Science and Inter-disciplinary Areas.
- Students will have to clear eight board exams, each of which will assess their hold on courses they learnt in class IX and X, to obtain the final certification which will factor into their performances in exams held over two years.
- Under the current system, there are no such links between class IX and X and students across most boards have to pass at least five subjects to clear class X.
- The committee has recommended more changes at the level of Class XI and XII, including the introduction of a semester system in Class XII.
- In terms of subjects, students will be given a choice to pick 16 courses from eight curricular areas.
- Currently, in Class 12, CBSE Students appear for the board exam in at least five subjects and a maximum of six and there is little scope for them to pursue multidisciplinary education.
- In other words, a student who has picked a combination of Physics, Mathematics and Chemistry cannot simultaneously study History or Political Science.
- But under the proposed system, that will be possible as the NEP envisages "**no hard separation**" among arts, humanities and sciences.

"Modular Board Examinations will be offered as opposed to a single examination at the end of the year. The final certification will be based on the cumulative result

of each of the examinations", states the pre-draft NCF.

## 5. Changes in the teaching-learning for younger students

- At the foundation level, for children aged 3-8 enrolled in grades between preschool and class II, the Pedagogical approach suggested is play based.
- It adds that textbooks are to be used from Grade 1 and most of the content should be concrete materials toys, puzzles and manipulatives.
- Along with these materials, learning experiences organized through physical exploration of the classroom space become the most appropriate content.
- For Grades III, IV and V or the preparatory stage, children are to be introduced to textbooks on languages and mathematics, while also retaining the activity and discovery-based approach.
- And in the middle stage (class VI, VII, VIII), natural as well as social sciences will be introduced.
- The textbooks need to play a central role in mediating the content in the Middle stage.
- Both the expansion of curricular areas and the engagement with abstract ideas and unfamiliar contexts could be challenging and bewildering for students.
- Well-designed textbooks with clear expectations and specific learning goals would support students in entering these forms of understanding in a structured and systematic manner.

## 6. Proposed changes in specific subjects

- The NCF pre-draft on school education is not so much about specific changes in textbooks as those details will be put out in the position papers being developed by the 12-member steering committee and sub-committees of experts under it known as focus groups.
- However, it carries certain observations and suggestions. For instance, it says that stressing a lone piece of evidence, instead of exposing children to multiple contrasting pieces of evidence, throws up a "**lopsided or inadequate picture**" of a topic in social science textbooks.

- In Maths, it says that many students have developed a "**real fear**" of the subject in the current system.
- Methods of assessment in maths have also encouraged rote learning and promoted the perception of maths as "**mechanical computation**" it says.
- The solution, the committee says, is a shift towards play, activity, discovery and discussion-based learning.

## 7. Changes come into effect

- The government recently announced that textbooks based on the revised NCF will be taught in schools starting from the 2024-25 academic session.
- But a specific timeline for the implementation of the changes on exams, assessments and subject design has not been made available yet.
- In a statement, the Education Ministry said that the pre-draft of the NCF "still requires several rounds of discussion within the National Steering Committee".

## General Studies II: Polity

# NATIONAL PARTY AND STATE PARTY

## 1. Context

A head of the upcoming Karnataka Assembly elections, the Arvind Kejriwal Aam Aadmi Party (AAP) received a shot in the arm from the Election Commission of India, as the poll body accorded it the status of a national party on April 10, 2023.

Meanwhile, the Trinamool Congress (TMC), the Communist Party of India (CPI) and the Nationalist Congress Party (NCP) and the Nationalist Congress Party (NCP) lost their national Party status. The EC also revoked the recognition of some parties as State parties.

## 2. Recognition of a National Party

- The Election Commission reviews the poll performance of recognised parties after every state Assembly election or general election to the Lok Sabha.
- The rules for recognition as a national party are specified by the Commission in Para 6B of the **Election Symbols (Reservation and Allotment) Order, 1968**.
- A party becomes eligible to be accorded national status if it manages to fulfil one of the following conditions:
  - a. If it is recognised as a State Party in at least four states
  - b. If it secures 6 per cent of the total votes polled in four States in the last Lok Sabha or Assembly elections and in addition, gets four of its members elected to the Lok Sabha or
  - c. If it wins 2 per cent of seats in the Lok Sabha from at least three states.
- Besides this, the Symbols Order of 1968 was amended in 2016 to give parties one additional "**pass over**".
- As per this amendment, deemed to have been in force since January 1, 2014, if a national or State party fails to fulfil the eligibility criteria in the next general elections (March 2014 Lok Sabha election after the election in which it received recognition, it will continue to be recognised as a national or state party, meaning it will not be stripped of its status.
- However, whether it will continue to be recognised after any subsequent election would again have to be determined by the eligibility criteria.
- The AAP gained national status after the EC order, as it was recognised as a State Party in four states Delhi, Punjab, Goa and Gujarat.
- Its application with the EC was pending since the Gujarat election results, but a Karnataka High Court Order asked the poll body to decide on the party's status before the State Assembly elections were notified.
- The Trinamool Congress, which lost its national status had gained it in 2016 by the "pass over" amendment to the Symbols Act.
- It was a State party in three states West Bengal, Tripura and Manipur but it did not meet eligibility conditions to remain a State Party in Arunachal Pradesh in the 2014 General and State elections.

- However, the Commission did not revoke its State party status, in line with the amendment.
- In the ECs most recent review, the party did not manage to remain a State party in the required four States losing its status in Manipur and Arunachal Pradesh while continuing to hold recognition in West Bengal, Tripura and Meghalaya.
- Meanwhile, the NCP lost its recognition in three States (Goa, Manipur and Meghalaya) where it did not secure enough assembly votes between 2017 and 2018.
- It is currently a State party in only two states Maharashtra and Nagaland.
- Lastly, the CPI, which was accorded national status in 1989, also retained its status despite its performance in the 2014 Lok Sabha election, courtesy of the amendment to the Symbols Act.
- While EC held off on its revocation of the party's national status during the pandemic, it was withdrawn.

### 3. The criteria for recognition of a State Party

- For recognition as a state party, it has to secure at least 6 per cent of the valid votes polled and two seats in Assembly polls or one in Lok Sabha polls.

There are three other alternatives for eligibility

- a. At General Elections or Legislative Assembly elections, the Party has to win 3 per cent of the seats in the legislative assembly of the State (subject to a minimum of 3 seats)
  - b. At a Lok Sabha in general elections, the party has to win one Lok Sabha seat for every 25 Lok Sabha seats allotted for the State or
  - c. At a General Election to the Lok Sabha or the Legislative Assembly, the party has to poll 8 per cent of votes in a State.
- Besides, the Changes to the State recognitions of the TMC, the NCP and the CPI, the ECI also revoked State party status granted to the Rashtriya Lok Dal in Uttar Pradesh, the Bharat Rashtra Samithi in Andhra Pradesh, the People's Democratic Alliance in Manipur, the Pattali Makkal Katchi in

Puducherry, the Revolutionary Socialist Party in West Bengal and the Mizoram People's Conference in Mizoram.

- The Tipra Motha in Tripura, the Lok Janshakti Party (Ram Vilas) in Nagaland and the Voice of the People Party in Meghalaya were granted "**recognised State Political party**" status.

#### **4. Benefits of recognition as national and State parties**

- A recognised political party enjoys privileges such as a reserved party symbol, free broadcast time on State-run television and radio, consultation in the sitting of election dates and giving input in setting electoral rules and regulations.
- Candidates put up by registered but unrecognised political parties are allotted election symbols by the Returning officers of the constituencies after the last date for withdrawal of candidature as per the availability.
- Thus, the party cannot use a single poll symbol across the country.

## **DOCTRINE OF PLEASURE**

### **1. Context**

Tamil Nadu Chief Minister and DMK president, M.K. Stalin, has urged the Chief Ministers of the States ruled by parties other than the BJP to get resolutions passed in their Assemblies urging the Union government and the President to fix a time limit for Governors to approve the Bills passed by the Legislatures.

### **2. Doctrine of Pleasure**

- The doctrine of Pleasure in the United Kingdom where the British Monarchy enjoys unique powers as all subordinates serve at the monarch's pleasure and are subject to dismissal at any time.
- In India, Article 310 codifies the Doctrine of Pleasure in Constitution which says every person in the defense or civil service of the Union holds office at the pleasure of the President, and every member of the Civil service in the states holds office during the pleasure of the Governor.

- Under Article 164, the Chief Minister is appointed by the Governor; and the other ministers are appointed by the Governor on the CM's advice.
- It adds that Ministers hold office at the pleasure of the Governor.
- In a constitutional scheme in which they are appointed solely on the CM's advice, the pleasure referred to is also taken to mean the right of the Chief Minister to dismiss a Minister and not that of the Governor.
- In short, the Governor of an Indian State cannot remove a Minister on his own.

### 3. Difference between the doctrine of pleasure followed in England and in India

#### In England

- In England, the Crown is regarded as the Executive head and the civil services are part of the Executive.
- Thus, the civil servants work at the pleasure of the Crown which can remove them at any time.
- When the civil servants are removed from their service, they do not have the right to sue the Crown for wrongful termination and they also cannot ask for damages undergone due to wrongful termination.

#### In India

- In India, as the President of India is the Executive Head of the Union, he has been vested with the power to remove a civil servant at any time under this doctrine.
- According to Article 310 of the Indian constitution, except for the provisions provided by the Constitution, a civil servant of the Union works at the pleasure of the President, and a civil servant under a State works at the pleasure of the Governor of that State.
- Thus, the main difference between India and England is that doctrine of pleasure in India can be limited by constitutional provisions. For example, civil servants in India have been provided with some protection under Article 311.

#### 4. Discretionary powers with the Governors

- Reservation of a bill for the President's reconsideration.
- When given administrators' charge, actions can be taken at will.
- Send report to the President for consideration of Constitutional Emergency.
- When he/she calls upon the Chief Minister to seek information regarding administrative and legislative affairs.

#### 5. Constitutional Provisions Regarding the Assent of Bills

- Assent to bills under Article 200 i.e., the assent of the Governor to the bills passed by the state legislature.
- Giving assent to a bill passed by the legislature is a normal constitutional act performed by the Governor.
- The Governor is an appointee of the President, which means the Union government.
- Article 154(1) of the constitution vests in the Governor the executive power of the state, he is required to exercise that power in accordance with the constitution.
- In other words, the Governor can act only on the aid and advice of the Council of Ministers.
- While there is not much deviation from the language used in the Government of India Act of 1935 in the context of the powers of the British era Governors, it is a settled constitutional position that the Governor is only a constitutional head and the executive power of the state is exercised by the Council of Ministers.

**When a bill is sent to the governor after it is passed by the state legislature, he/she can:**

- Give his assent to the bill, or
- Withhold his assent to the bill, or
- Return the bill (if it is not a money bill) for reconsideration by the state.
- However, if the bill is passed again by the state legislature with or without amendments, the governor has to give his assent to the bill or

- Reserve the bill for the consideration of the President (Article 201). In one case such reservation is obligatory, that is, where the bill passed by the state legislature endangers the position of the state high court.

## PARLIAMENTARY COMMITTEES

### 1. Context

Due to the sheer volume of information and scale of operations that the Indian Parliament is required to undertake, it is not feasible to take up all issues on the floor of the House. Thus, Parliamentary committees are constituted to delve deeper into matters of public concern and develop an expert opinion.

### 2. Background

- The Parliamentary committees are an essential part of the governance of India.
- They support the legislature in the discharge of its duties. Their work includes supervision, control, and vigilance, and they share the workload of the legislature.
- Also, the Parliamentary committees in India offer better insight into the issues in discussion. And they provide detailed analysis and scrutiny. There are two types of Parliamentary committees: Parliamentary standing committee and Ad Hoc Committee.
- Article 118 of the Indian Constitution deals with any subject related to these committees. Here, we discuss all Parliamentary committees of India with their types, including the Financial and Departmental Committees.

### 3. Standing Committees

The Standing Committees are permanent (constituted every year or periodically) and work continuously. Standing Committees can be classified into the following six categories:

- Financial Committees
- Departmental Standing Committees
- Committees to Enquire
- Committees to Scrutinise and Control
- Committees Relating to the Day-to-Day Business of the House
- House-Keeping Committees or Service Committees

#### 4. Ad Hoc Committees

- While the Ad Hoc Committees are temporary and cease to exist on completion of the task assigned to them.
- They are further subdivided into Inquiry Committees and Advisory Committees.
- The Principal Ad hoc Committees are the select and Joint Committees on Bills.

#### 5. Evolution of Committees

- Even though a structured committee system was only established in 1993, individual committees were being formed for various reasons as far back as independence.
- The Ad Hoc Committee on the Citizenship Clause, as the name suggests, was formed to discuss the nature and scope of Indian citizenship.
- Two other very significant committees were the Northeast Frontier (Assam) Tribal and Excluded Areas SubCommittee (July 28, 1947) and the Excluded and Partially Excluded Areas (Other than Assam) SubCommittee (August 18, 1947).
- Then there was the Expert Committee on Financial Provisions of the Union Constitution (December 5, 1947), which was responsible for giving recommendations on Union and Province (State) tax collection, central excise duty, liquor revenue, the divisible pool of income tax, sharing of proceeds among provinces, residuary powers, and the institutions of the Finance Commission and the Auditor General, among other things.
- Finally, the Advisory Committee on the Subject of Political Safeguards for Minorities (May 11, 1949), chaired by Sardar Patel, looked at the abolition of reservations for religious minorities.

- So, in essence, committees have been doing monumental work since the unveiling of independent India.
- Today, both the Lok Sabha and the Rajya Sabha have their Standing (permanent) Committees and Ad Hoc (needbased) Committees. There are also Joint Committees with representation from both Houses.

## 6. Role and Importance of Parliamentary Committees in Indian Democracy

- **Lawmaking:** Due to large the volume of the legislature, discussion of all the bills in parliament in detail is not possible. Committees do a detailed discussion and analysis of a proposed law, thus enabling that every law is for benefit of citizens.
- **Executive accountability:** Parliamentary committees ensure executive accountability through scrutiny of public spending and various laws. The Public Accounts Committee is concerned with the manner and results of spending public funds. It scrutinizes the accounts and the report of the Comptroller and Auditor-General of India, thereby ensuring accountability for any misspending.
- **Better informed discussion:** Committee allows members for a more meaningful exchange of views as against discussions in open Houses where party positions take precedence. This allows them to take better decisions on policies.
- **Expertise:** Committees allow the use of input and suggestions from various experts on the subject matter of law thereby helping to formulate better policies and laws. Changes in technology and the expansion of the economy bring new policy challenges that require the assistance of experts in dealing with such situations. It is through these committees that such expertise is involved in law-making.
- **Help in Economic growth:** The Estimates Committee does a detailed examination of the budget estimates. It suggests alternative policies to bring about efficiency and economy in administration.
- **Scrutiny of Public funds:** The Public Accounts Committee scrutinizes the government accounts and the report of the Comptroller and Auditor-General of India. Thus reducing chances of misspending and also validating government spending statistics.

- **Ensure better laws and rules:** The Committee on Subordinate Legislation scrutinizes and reports to the House about regulations, rules, sub-rules, by-laws, etc., conferred by the Constitution being properly exercised within the limits of various provisions.
- **Ensure Answerability:** The Committee on Government Assurances Committee scrutinizes the various assurances, promises, undertakings, etc., given by ministers from time to time to report on the extent to which such assurances have been implemented. This ensures the answerability of government to the public enabling democracy in true spirit.

## 7. Current Progress

- Perhaps the most salient work done by a committee in recent years is on the Digital Data Protection Bill.
- Beginning in 2017 in the wake of the Puttaswamy judgment that recognized privacy as a fundamental right, the Justice Srikrishna Committee was formed and tasked with preparing a data protection framework for India.
- It presented the final 166page report in 2018, covering everything from data processing and storage to rights and enforcement on the basis of which the Personal Data Protection Bill, 2019 was tabled in the Lok Sabha.
- It was referred to another committee, this time a Joint Parliamentary Committee chaired by P.P. Chaudhary, whose report came out in December 2021, following which the bill was withdrawn, and a new Draft of the Digital Data Protection Bill was introduced for public consultation in November 2022.
- In each iteration, the committees' insights have not only been invaluable but also formed the very basis of what is possibly the single most crucial legislation for a growing economy in the digital age.
- Several important laws such as the Prohibition of Child Marriage (Amendment) Bill sought to raise the legal marriageable age of women to 21.
- The AntiMaritime Piracy Bill brings into enactment the UN Convention on the Law of the Sea for combating piracy on the high seas.
- The Jan Vishwas Bill amends 42 laws across sectors like agriculture and media, the Wildlife Protection (Amendment) Bill that extends the scope of protected species, the Competition (Amendment) Bill, the Electricity

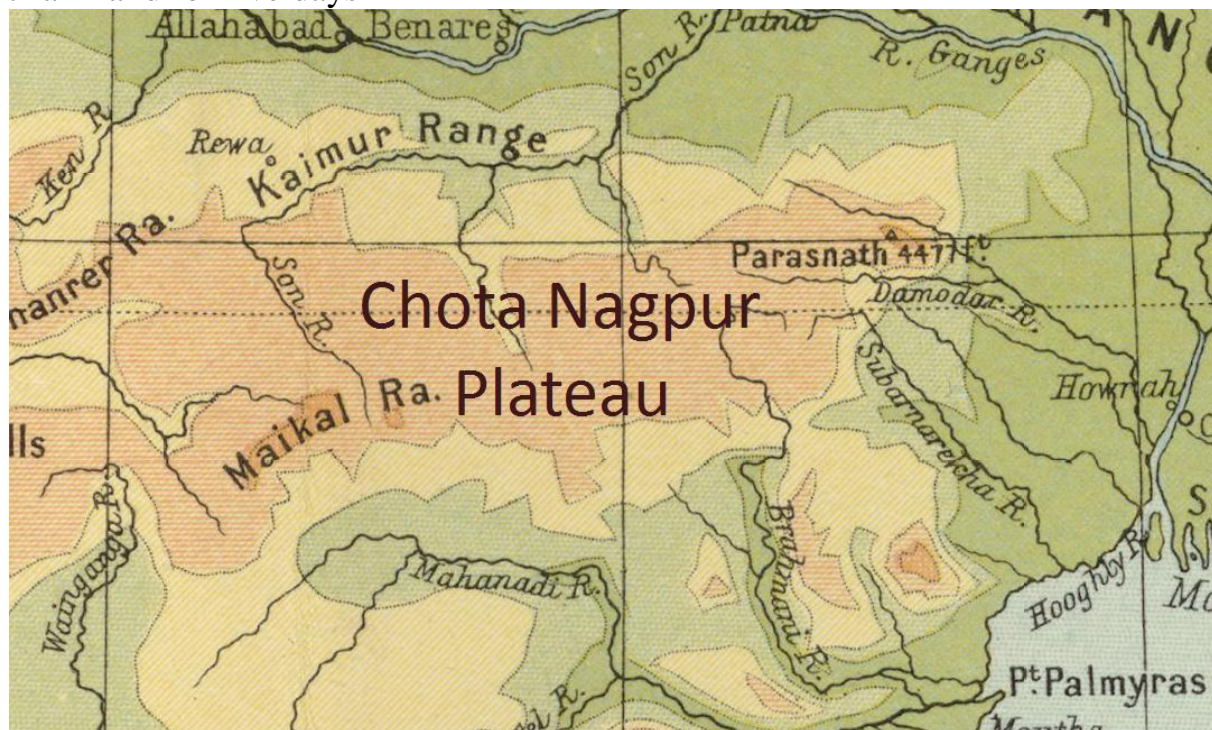
(Amendment) Bill, the Criminal Procedure (Identification) Bill, and the MultiState Cooperative Societies (Amendment) Bill have all been referred to Committees.

## KUDMI COMMUNITY

### 1. Context

Kudmi community, which is demanding Scheduled Tribe (ST) status and the inclusion of their language in the Eighth Schedule of the Constitution, **lifted** their agitation following assurances from the West Bengal government

The community had been sitting on protest in the Junglemahal areas of West Bengal and parts of Jharkhand. Last week, they blocked National Highways and railway tracks in Bengal's West Midnapore and Purulia and some areas of Jharkhand for five days



### 2. Who are Kudmis?

- Kudmis are mainly a peasant community, with their population concentrated in the Junglemahal areas or the Chota Nagpur plateau of West Bengal, Jharkhand and Odisha
- Some Kudmis are also found in Assam and northern West Bengal, who have migrated from the Chota Nagpur plateau region
- During the British rule, they were in the Scheduled Tribe or Aboriginal community list, and were regarded as a primitive tribe, like the Munda, Oraon, Bhumij, Kharia, Santhal, and others

### 3. Reasons for their Exclusion from ST list

- After 1950, when the Scheduled Tribe list was prepared in independent India, Kudmis did not find a place on it
- Ever since, they have been fighting for their identity as a Scheduled Tribe
- The Kudmis argue that in the British era, various documents listed them as a tribe and an aboriginal community of India, and they want that identity restored
- According to community members, during the British rule, some affluent Kudmis wanted to elevate their social status as “kshatriya” in the Hindu caste hierarchy, while other members opposed this “sanskritisation”
- Not only Kudmis, many other adivasi communities participated in that movement
- Unfortunately, they were excluded from Scheduled Tribe list after independence
- Now they are demanding their original identity. It is also true that, like other adivasi communities, their socio-economic condition has not changed
- Another section of the Kudmi population alleges that they were excluded from the ST list to show an increase in the population of the Hindu community

### 4. Demands

Over the past decade, in West Bengal, Jharkhand and Odisha, an intensified movement was witnessed by the Adibasi Kudmi Samaj and its allied organisations, mainly led by former Jharkhand Movement crusader Ajit Prasad Mahato. Since then, the community has been vocally demanding inclusion in the ST list. Several social and political organisations also have emerged to champion the case, such as the Purbanchal Adibasi Kudmi Samaj, Kudmi Sena, Abga Kudmi Sena,

Kudmi Samannay Samiti, Kudmi Unnayan Samiti, Kudmi Bikash Morcha, and United Kudumi Samaj

# CENTRE VS STATE OF DELHI

## 1. Context

The Centre recently introduced the Government of National Capital Territory of Delhi (Amendment) Bill, 2021 in Lok Sabha, reviving the dispute on the distribution of powers between the elected government and the Lieutenant Governor (L-G).

## 2. What does the Bill say?

- In the “statement of objects and reasons” section, the Centre claims that the amendment Bill seeks to give effect to the Supreme Court’s interpretation and that it “further defines” the responsibilities of the elected government and the Lt Governor in line with the Constitutional scheme.
- Among the major proposed amendments, one makes it explicitly clear that the term “government” in any law made by the Legislative Assembly shall mean the L-G.
- This, essentially, gives effect to former L-G Najeeb Jung’s 2015 assertion that Government means the Lieutenant Governor of the NCT of Delhi appointed by the President under Article 239 and designated as such under Article 239 AA of the Constitution.
- The Bill adds that the L-G’s opinion shall be obtained before the government takes any executive action based on decisions taken by the Cabinet or any individual minister.

## 3. What purpose does the 1991 Act serve?

- Delhi's current status as a Union Territory with a legislative Assembly is an outcome of the 69th Amendment Act through which Articles 239AA and 239BB were introduced in the constitution.

- The GNCTD Act was passed simultaneously to supplement in the constitutional provisions relating to the Assembly and Council of Ministers in the national Capital.
- For all practical purposes, the GNCTD Act outlines the power of the Assembly, the discretionary powers enjoyed by the L-G, and the duties of the Chief Minister with respect to the need to furnish information to the L-G.

#### **4. What did the constitutional bench say?**

- In its 2018 verdict, the five-judge Bench had held that the L-G's concurrence is not required on issues other than Police, public order, and land.
- It had added that decisions of the Council of Ministers will, however, have to be communicated to the L-G.
- It has to be clearly stated that requiring the prior concurrence of the Lieutenant Governor would absolutely negate the ideas of representative governance and democracy conceived for the NCT of Delhi by Article 239AA of the constitution, the court had ruled.
- The L-G was bound by the aid and advice of the councils of ministers, it has said.

#### **5. What is a Constitutional Bench?**

- Article 145(3) deals with the setting up of a Constitution Bench of the Supreme Court comprising at least five judges to decide any case involving a substantial question of law as to the interpretation of the Constitution.
- This is the second time that a constitutional bench has been set up to decide on issues between the Delhi Government and Delhi's Lieutenant Governor-the Centre's representative in the capital in the past four years.

#### **6. What will change if the amendments are cleared by Parliament?**

- Encouraged by the Supreme Court verdict, the elected government stopped sending files on executive matters to the L-G before the implementation of any decision.
- It has been keeping the L-G abreast of all administrative developments, but not necessarily before implementing or executing any decision.

- But the amendment, if cleared, will force the elected government to take the L-G's advice before taking any action on any cabinet decision.
- The Bill seeks to add a provision in the original GNCTD Act, 1991, barring the Assembly or its committees from making rules to take up matters concerning day-to-day administration, or to conduct inquiries about administrative decisions.

### 7. Is the L-G left with no discretionary power?

- The L-G does have the power to refer any matter, over which there is a disagreement with the elected government, to the President under Article 239AA(4).
- The Delhi Law Secretary had 2019 written in an internal memo that the elected government cannot use the Supreme Court verdict to keep the L-G in the dark about its decisions as that would prevent him from taking informed decisions on whether to invoke Article 239AA(4) or not.
- But the SC had also categorically pointed out that the L-G should not act mechanically without due application of mind to refer every decision of the Council of Ministers to the President.

### 8. What are the state governments' Powers?

- From 2015 to 2018, the AAP government was engaged in a constant battle with the Centre over policy decisions and the powers of the L-G vis-à-vis the elected government.
- The Supreme Court judgment gave it a freer hand in terms of policy decisions.  
Government insiders have maintained that it was because of the judgment that the government was able to clear policy decisions like giving free power to those using under 200 units, free bus riders for women, and doorstep delivery of ration.
- By making it mandatory for the elected government to route all its files through the L-G, the amendments will essentially take away the government's autonomy and the dream for full statehood for the state, which

each political party BJP, Congress, and AAP have promised the electorate at various times.

## LEGISLATIVE COUNCILS IN STATES

### 1. Context

SP has won 31 of 36 UP Vidhan Parishad seats that went to polls, giving itself a boost and a majority in the House.

### 2. What are the Legislative Councils, and why are they important?

- India has a bicameral system i.e., two Houses of Parliament. At the state level, the equivalent of the Lok Sabha is the Vidhan Sabha or Legislative Assembly; that of the Rajya Sabha is the Vidhan Parishad or Legislative Council.
- A second house of the legislature is considered important for two reasons: one, to act as a check on hasty actions by the popularly elected House and, two, to ensure that individuals who might not be cut out for the rough-and-tumble of direct elections too are able to contribute to the legislative process.
- Opposition to the idea of Legislative Councils is centered on three broad arguments.
- One, they can be used to park leaders who have not been able to win an election.
- Two, they can be used to delay progressive legislation.
- Three, they would strain state finances.
- Opinion in the Constituent Assembly was divided on the question of having a Legislative Council.
- The idea was backed on the above grounds: it was also suggested that having a second chamber would allow for more debate and sharing or work between the Houses.

### 3. Do all states have Legislative Councils?

- No. Our constitution does not force a bicameral legislature on states.
- It gives states the option of having a second House.
- As of today, seven states have Legislative Councils. These are Jammu and Kashmir, Bihar, Uttar Pradesh, Maharashtra, Karnataka, Andhra Pradesh, and Telangana.

### 4. Importance of state legislative councils

**Check against Hasty Legislation:** A second House of the legislature is considered important to act as a check on hasty actions by the popularly elected House. If there are two chambers, the measures passed by one would be scrutinized by the other minutely. Hence the laws enacted finally would be carefully analyzed and thoroughly discussed.

**Prevent autocracy:** It is argued that the second house checks the lower chambers' autocratic tendencies. To vest the legislative powers with a popularly elected House alone may prove harmful to the people of the state as legislation may be arbitrary.

**Accommodation of Talent:** Elderly, experienced, and sober individuals, cannot-bear the ordeal of electioneering neither campaign nor are they keen to indulge in vicious party politics. The legislative councils accommodate such personalities not only through the nominated quota but also through the quota reserved for teachers and graduates.

**Reduce the workload of legislative assembly:** Since the legislative assemblies are generally flooded with work, due to the rapid growth in the functions of a modern welfare state, a unicameral legislature cannot cope with the work and devote fully to the bills brought before it for enactment. The legislative council lessens the burden of the lower House and enables an assembly to fully concentrate on measures of greater importance.

## 5. How much money is needed to set up a Legislative Council?

- Requirements would differ from state to state.
- Rajasthan told the standing Committee that approximately Rs. 100 crores would be required.
- Assam quoted a one-time expenditure of Rs. 68.33 crore, and a recurring annual expenditure of Rs 19.28 crore.

## 6. How many members of the council were elected?

- Membership may vary, but the Legislative Council must not have more than a third of the total membership of the Assembly of that state and in no case fewer than 40 members. (The exception is J&K, where the Legislative Council has 36 members vide Section 50 of the constitution of the state.)
- About 1/3rd of the members are elected by members of the Assembly, another 1/3rd by electorates consisting of members of municipalities, district boards, and other local authorities in the state, 1/12th by an election consisting of teachers, and 1/12th by registered graduates.
- The remaining members are nominated by the Governor from among those who have distinguished themselves in literature, science, art, the Cooperative movement, and social service.
- Legislative Councils are permanent houses, and like Rajya Sabha, one-third of their members retire every two years.

## 7. Difference between the state legislative councils and Rajya Sabha

- The council's position compared to the legislative assembly is much weaker than the position of the Rajya Sabha as compared to the Lok Sabha. The Rajya Sabha has equal powers with the Lok Sabha in all spheres except financial matters and with regard to the control over the Government.
- The councils consist of people from diverse backgrounds like graduates, teachers, and outstanding persons in the fields of art, literature, science, and social service and thus do not reflect the federal element of the polity. The Rajya Sabha consists of the representatives of the states and thus reflects the federal element of the polity.

- The council is heterogeneously constituted. It represents different interests and consists of differently elected members and also includes some nominated members. The Rajya Sabha is homogenously constituted. It represented only the states and consists of mainly elected members (only 12 out of 250 are nominated).
- Further councils are not permanent and their constitution depends upon the states. Many states don't have legislative councils. Rajya Sabha is a permanent and continuous chamber where representatives are elected for the house.

## NATURAL JUSTICE AND PROPORTIONALITY

### 1. Context

The Supreme Court, on Wednesday (April 5), set aside the orders passed by the Ministry of Information & Broadcasting (MIB) on January 31, 2022, and the Kerala High Court on March 2, 2022, **refusing to renew Malayalam news channel Media One's broadcast license**

### 2. Background

- The Ministry of Information and Broadcasting, on January 31, 2022, refused to renew the broadcast license of the Malayalam channel MediaOne on the ground that the Ministry of Home Affairs had declined to grant it security clearance while considering its request for renewal of license
- The MHA had cited **alleged links between the channel's promoters Madhyamam Broadcasting Limited and Jamaat-e-Islami Hind** for denying the security clearance to Media One. Following this, the channel was taken off the air
- This led to the channel approaching the Kerala High Court against the Centre's action
- During the hearing in the HC, the Centre told HC that the decision to revoke the license was based on grounds of national security

- However, on March 15, last year, the Apex Court stayed the Kerala High Court order and allowed the channel to resume operations
- In the hearing before the SC, the channels' promoters argued that they were not given a chance to defend themselves as the national security reasons cited to deny renewal of their license were submitted to the HC in a sealed cover
- Further, it was contended that the fundamental right to freedom of speech and expression, which includes press freedom, can be restricted only on the grounds enumerated under Article 19(2) and there was no allegation that the channel violated the Programme and Advertising Code prescribed under the Cable Television Networking (Regulation) Act 1995 and the 1994 Rules

### 3. Principles of Natural Justice

- The bench allowed the challenge to the order of the MIB (Ministry of Info & Broadcasting) and judgment of the High Court on account of the principles of natural justice constitutionalized by its judgment in its 1978 ruling in "Maneka Gandhi vs Union of India"
- The Court observed that "that there is an inherent value in securing compliance with the principles of natural justice independent of the outcome of the case."
- Actions which violate procedural guarantees can be struck down even if non-compliance does not prejudice the outcome of the case, the court held
- It also stated that "the core of the principles of natural justice breathes reasonableness into procedure"
- Additionally, the court clarified that in the present case, the burden is on the claimant to prove that the procedure followed infringes upon the core of procedural guarantees
- In its judgment, the court also observed that the duty to act fairly that is derived from common law is not exhaustively defined in a set of concrete principles, and courts, in India and abroad, have demonstrated considerable flexibility in the application of the principles of natural justice by fine-tuning them to different situations
- However, the court also added that such a concept of natural justice "cannot be put into a 'straitjacket formula'" and is "incapable of a 'precise definition'"

- Finally, the court upheld its judgments in Ex-Army men's Protection Services and Digi Cable Network to hold that while "principles of natural justice may be excluded when on the facts of the case, national security concerns outweigh the duty of fairness", "the state has been unable to prove that these considerations arise in the present factual scenario."
- The Court added that though confidentiality and national security are legitimate aims for the purpose of limiting procedural guarantee, a "blanket immunity from the disclosure of all investigative reports cannot be granted."

#### 4. Proportionality

- The judgment went on to explain that the validity of the claim of involvement of national security considerations must be assessed on the test of:
  - whether there is material to conclude that the non-disclosure of information is in the interest of national security
  - whether a reasonable prudent person would draw the same inference from the material on record
  - Even assuming that non-disclosure is in the interest of confidentiality and national security, the means adopted by the respondents do not satisfy the other prongs of the proportionality standard
  - The top court then reiterated that courts can assess the validity of public interest immunity claims albeit based on the "structured proportionality standard"
  - On the practice of sealed covers, the court observed that "the power of courts to secure material in a sealed cover when contradistinguished with the scope of assessment of public interest immunity claims is rather unguided and ad-hoc."
  - Additionally, the Court said that "while public interest immunity claims conceivably impact the principles of natural justice, sealed cover proceedings infringe the principles natural justice and open justice."
  - It also suggested that the court could have taken the course of redacting confidential portions of the document and providing a summary of the document's contents

- The non-renewal of permission to operate a media channel is a restriction on the freedom of the press which can only be reasonably restricted on the grounds stipulated in Article 19(2) of the Constitution
- The reasons for denying a security clearance to MBL, that is, its alleged antiestablishment stance and the alleged link of the shareholders to JEI-H, are not legitimate purposes for the restriction of the right of freedom of speech protected under Article 19(1)(a) of the Constitution

### General Studies III: Economy

## DABBA TRADING

### 1. Context

In the past week, the National Stock Exchange (NSE) issued a string of notices naming entities involved in ‘dabba trading’. The bourse cautioned retail investors to not subscribe (or invest) using any of these products offering indicative/assured/guaranteed returns in the stock market as they are prohibited by law.

### 2. What is Dabba Trading?

- Dabba (Box) trading refers to informal trading that takes place outside the purview of the stock exchanges. Traders bet on stock price movements without incurring a real transaction to take physical ownership of a particular stock as is done in exchange. In simple words, it is gambling centered around stock price movements.
- Since it is illegal, there is no income tax on profit. Traders also don't pay Commodity Transaction Tax (CTT) or Securities Transaction Tax (STT) on their transactions. SEBI has taken several steps to curb the dabba trading system and encourage more investors to invest through the mainstream.

### 3. How does Dabba Trading work?

- The dabba system is also called box trading in India and bucket trading in the US market. The broker routes the investors to invest outside the stock market.
- The orders are placed through operators and all transactions are settled in cash every week. The operator books the trade in its record after receiving the order from its client. The operator charges money from its client to facilitate trades.
- Transacting in the bucketing market carries higher risk. It involves counterparty risks and actions conducted by respective authorities since it is an illegal transaction.
- The Dabba system is a pseudo-market without a settlement guarantee, meaning you may lose all your investments.
- In India, gold and silver are often traded in the parallel market, along with copper and crude oil.
- SEBI banned dabba trading as an illegal and prohibited activity under regulations 3 and 4 of SEBI's prohibition of Fraudulent and Unfair Trade Practices.
- It is also punishable under the Indian Penal Code and the Information Technology Act of 2000.

### 4. Difference between Legal Trading and Dabba Trading

- When an investor places an order to buy stocks, the broker executes the order on the stock market.
- The transaction incurs some expenses, like brokerage fees, exchange fees, SEBI turnover fees, and taxes paid to the Income Tax Department and Securities Transaction Tax (STT). An Rs. 100 transaction will cost Rs. 101 to the investor.
- On dabba trading, the agent will execute the trade outside the market, and no actual order is placed on the exchange. The buyers bet on the scrip at a price point.
- If the share price raises, the trader would gain the difference between the quoted price and the differences.

- Similarly, when the price falls, the customer will have to pay the difference. Traders don't need to have the money to transact in the dabba system.
- In a nutshell, dabba trading is betting on the stock price movement. Since there is no actual transaction, it does not incur any transaction cost.
- If the price moves in your favor, you will gain. Otherwise, you will pay for the difference.
- Despite all efforts from the market regulator, dabba trading is rising. It is a method to change black money into white.
- Most of the time, investors willingly participate in illegal trades. Sometimes, the brokers may engage in pseudo-trading without the knowledge of the client.
- The broker will make one transaction of a single share to fix the price point when the real deal contains ten or thousand shares. Once that is done, the trade gets squared off on the said date. The trades are purely based on trust.

## 5. Dabba Trading Software

- Dabba trading software is a real thing. It has reached a level where traders use software specially made to carry out trades outside the stock market.
- Although SEBI is tightening its measures to curb unauthorized trading, there is a rise in the volume of Dabba trading.
- Dabba trading software and apps are reaching the audience, allowing them to transact with simple clicks. These applications are linked to the stock and commodity market to track live price changes.

## 6. Risks to dabba or box trading

- Dabba trading carries higher risks since it is not regulated. There is no guarantee of getting a settlement. Profit from a dabba trade depends on the loss of another party.
- Those operating in the dabba market are not members of the stock exchange. The operators place large orders in the stock market and bear the loss of profit from the deal, which makes box trading a vulnerable investment option.
- Dabba trading impacts the whole economy. It encourages tax evasion where lakhs and crores are betted outside the legal system.

- It deprives the government of thousands of crores in revenue.
- Secondly, it is akin to organized gambling which is illegal in India. Traders trade without the safety net provided by the exchange or SEBI. Sometimes, traders will place large orders of crores without having adequate money in reserve.
- So, even if you win the bet, you may fail to retrieve the money from the losing broker or investor.
- Hence, your money is always in danger as there is no exchange guarantee or margin safety.
- ‘Dabba trading’ is recognized as an offense under Section 23(1) of the Securities Contracts (Regulation) Act (SCRA), 1956, and upon conviction, can invite imprisonment for a term extending up to 10 years or a fine up to ₹25 crores, or both.

## ASBA

### 1. Context

The capital markets regulator, the Securities and Exchange Board of India (SEBI), last week approved a framework for an Application Supported by a Blocked Amount (ASBA) like facility for trading in the secondary market. The facility will be optional for investors and stock brokers. The framework will be implemented in a phased manner to facilitate a smooth transition in the market.

### 2. What is ASBA?

- ASBA, which was first introduced by SEBI in 2008, is an application by an investor that contains authorization to a Self-Certified Syndicate Bank (SCSB) to block in the bank account the application money for subscribing to an issue.

- An SCSB is a recognized bank capable of providing ASBA services to its customers.
- The application money of an investor applying through ASBA shall be debited from the bank account only if her application is selected for allotment after the basis of allotment has been finalized.
- In public issues and rights issues, all investors have to mandatorily apply through ASBA.

### 3. What has SEBI done?

- In its board meeting on March 29, 2023, the markets regulator gave its nod for an ASBA-like facility for secondary market trading.
- The facility is based on the blocking of funds for trading in the secondary market through UPI (Unified Payments Interface).
- At present, ASBA is available for the primary market, wherein the initial public offering (IPO) funds only are blocked on application, and are debited only on the allotment.
- According to discount stock broker 5paisa, the extension of ASBA to secondary markets means brokers will no longer collect margins from clients; only a block will be placed on the bank account.
- This will not matter much for banks-cum-brokers such as ICICI, HDFC, and Axis, since it anyways works like a quasi-ASBA. However, it could matter for non-bank brokers.

### 4. How does ASBA work in the primary market?

- In the ASBA system, there is explicit authorization to block the application money in the bank account.
- When an investor makes an application for an IPO, a similar amount of funds are blocked in the ASBA bank account.
- Such funds can not be used for any other purposes.
- However, once the allotment is finalized, based on the number of shares allotted, the ASBA bank account will be debited, and the balance funds will be released for regular use according to 5paisa.

## 5. How will the ASBA facility benefit retail investors in the secondary market?

- ASBA in secondary market trading will ensure that clients will continue to earn interest on the blocked funds in their savings account till the debit takes place.
- There will be a direct settlement with Clearing Corporation (CC), without passing through the pool accounts of the intermediaries.
- Hence, it will provide client-level settlement visibility to CC and help avoid the risk of co-mingling clients' funds and securities.
- It will eliminate the custody risk of client collateral, which is currently retained by the members, and is not transferred to the CC.
- There will be hassle-free and immediate unblocking of the client's funds and/ or return of securities in case of member default.
- The market regulator said the facility will bring efficiency to the secondary market ecosystem by allowing usage of the same blocked amount towards margin and settlement obligations.
- It will result in a lower working capital requirement for members.
- Under the proposed framework, stock brokers will be allowed to either directly settle the brokerage with the UPI clients or opts for CC's facility to deduct the standard rate of brokerage from the UPI block of the clients.

## 6. Impact on the market

- Market participants feel that the ASBA-like system for the secondary market would impact volumes.
- While client volumes may not be impacted, the proprietary volumes can be negatively impacted, according to 5paisa.
- The current volume mix shows that proprietary trading by market intermediaries on their own books accounts for 27 percent of cash market volumes and 50 percent of F&O (future and option) volumes.
- Much of these funds are client funds and that could take a hit.
- This is also likely to reduce the leverage provided by brokers to the clients.
- So, there will certainly be a short-term volume impact, although it is expected to be value accretive in the long run, the brokerage said.

## 7. Steps were taken by SEBI to protect small investors

- SEBI had earlier introduced quarterly settlement of funds and transfer of funds from depository participants (DP) to bank accounts on the first Friday of the quarter (April, July, Oct, Jan).
- For clients who have opted for monthly settlements, the running account is allowed to settle on the first Friday of every month.
- If the first Friday is a trading holiday, the settlement happens on the previous trading day.
- Earlier this year, a new trade-plus-one (T+1) settlement cycle was introduced, which means that trade-related settlements will be done within a day, or 24 hours, of the completion of a transaction.
- The move helps investors in reducing the overall capital requirements with margins getting released on T+1 day, and in getting the funds in their bank accounts within 24 hours of the sale of shares.

# REPO RATE PAUSE

## 1. Context

The Reserve Bank of India (RBI) kept the **repo rate unchanged at 6.5 per cent** amid concerns over the global banking crisis

Even as the central bank expects retail inflation to moderate to 5.2 per cent in FY 2023-24, it pointed out that core inflation for non-food, non-fuel component could stay elevated due to lagged pass-through of input costs.

## 2. Unchanged Repo rate

- The decision to keep the repo rate unchanged was taken unanimously by the six-member **Monetary Policy Committee (MPC)**
- The MPC decided by a majority of five out of six members, to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth

- The MPC's decision to pause in its first meeting of the current financial year will give relief to borrowers as the external benchmark based lending rate (EBLR), which are linked to repo rate, will not increase
- The RBI has raised the repo rate by 250 basis points (bps) since May 2022, thereby increasing the EBLR by 250 bps. Banks have also raised the lending rate linked to marginal cost of funds-based lending rate (MCLR) in the past 11 months

### 3. Reasons for the Repo rate Pause

- The RBI underlined risks from protracted geopolitical tensions, tight global financial conditions and global financial market volatility to its monetary policy outlook. "Global financial market volatility has surged, with potential upsides for imported inflation risks,"
- Concerns over slowing consumption and tepid private investment have been emerging in policy quarters, with many seeing high-interest rates as a crucial factor in dampening demand
- The pause by the RBI will help favour the growth-inflation tradeoff towards the former
- This comes in the backdrop of many global agencies lowering India's growth forecasts for this financial year amid expectations of global economic slowdown and monetary tightening by other countries
- Negative real interest rates: a situation where the inflation rate is higher than the nominal interest rate
- The government has been leaning in favour of a benign pace of rate hikes by the RBI, citing the need for a de-linking of monetary policy stance from that of central banks of developed economies

### 4. Growth Projection

The RBI has projected real GDP growth for 2023-24 at 6.5 per cent. This is higher than the forecast of 6.4 per cent made in the February 2023 policy

While the change is marginal, it suggests an improvement in economic conditions. However, there are downside risks to this forecast

As per other estimates, growth is likely to slow down sharply from 7 per cent in 2022-23

For instance, the World Bank has recently pegged the Indian economy to grow at 6.3 per cent in 2023-24, while others such as Crisil expect it to be lower at 6 per

cent, as global growth slows down and the full impact of higher domestic rates is felt across the economy

## 5.Monetary Policy Committee

- The Monetary Policy Committee is the monetary authority of a country that regulates the supply of money in the economy through monetary policy decisions.
- In general, monetary policy modulates inflation or interest rates in order to ensure price stability and predictable exchange rates with foreign currencies.
- The Monetary Policy Committee in charge of monetary policy in accordance with the government's development goals.
- The Reserve Bank of India Act, 1934 empowers the Reserve Bank of India (ie MPC) to set monetary policy under **Section 45ZB**.
- Monetary policy can be either contractionary or expansionary, and it is frequently distinguished from fiscal policy, **which deals with taxes, government spending, and borrowing**.
- **The MPC comprises six members - three officials of the Reserve Bank of India and three external members nominated by the Government of India.**
- The **RBI Governor acts as the ex-officio Chairman of the MPC**. Three of the six-member Monetary Policy Committee are external representatives and their appointment is for a term of four years and they are ineligible for re-appointment.
- As per the **Reserve Bank of India Act, 1934, the central bank is required to organize at least four meetings of the MPC in a year.**

### 5.1.Instruments used to regulate Monetary policy

- **Repo Rate:** The (fixed) interest rate at which the Reserve Bank provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF).
- **Reverse Repo Rate:** The (fixed) interest rate at which the Reserve Bank absorbs liquidity, on an overnight basis, from banks against the collateral of eligible government securities under the LAF.
- **Liquidity Adjustment Facility (LAF):** The LAF consists of overnight as well as term repo auctions. Progressively, the Reserve Bank has increased the proportion of liquidity injected under fine-tuning variable rate repo auctions of a range of tenors. **The aim of the term repo is to help develop**

**the interbank term money market, which in turn can set market-based benchmarks** for the pricing of loans and deposits, and hence improve the transmission of monetary policy. **The Reserve Bank also conducts variable interest rate reverse repo auctions, as necessitated under the market conditions.**

- **Marginal Standing Facility (MSF):** A facility under which scheduled commercial banks can borrow an additional amount of overnight money from the Reserve Bank by dipping into their **Statutory Liquidity Ratio (SLR) portfolio** up to a limit at a penal rate of interest. This provides a safety valve against unanticipated liquidity shocks to the banking system.
- **Corridor:** The MSF rate and reverse repo rate determine the corridor for the daily movement in the weighted average call money rate.
- **Bank Rate:** It is the rate at which the **Reserve Bank** is ready to buy or rediscount bills of exchange or other commercial papers. The Bank Rate is published under Section 49 of the Reserve Bank of India Act, 1934. This rate has been aligned to the MSF rate and, therefore, changes automatically as and when the MSF rate changes alongside policy repo rate changes.
- **Cash Reserve Ratio (CRR):** The average daily balance that a bank is required to maintain with the Reserve Bank as a share of such percentage of its **Net demand and time liabilities (NDTL)** that the Reserve Bank may notify from time to time in the Gazette of India.
- **Statutory Liquidity Ratio (SLR):** The share of NDTL that a bank is required to maintain in safe and liquid assets, such as unencumbered government securities, cash and gold. Changes in SLR often influence the availability of resources in the banking system for lending to the private sector.
- **Open Market Operations (OMOs):** These include both, outright purchase and sale of government securities, for injection and absorption of durable liquidity, respectively.
- **Market Stabilization Scheme (MSS):** This instrument for monetary management was introduced in 2004. Surplus liquidity of a more enduring nature arising from large capital inflows is absorbed through the sale of short-dated government securities and treasury bills. The cash so mobilized is held in a separate government account with the Reserve Bank.

## General Studies III: Science & technology

# JUICE

### 1. Context

The European Space Agency (ESA) is all set to launch the Jupiter Icy Moons Explorer or Juice, mission on April 13, 2023, from its spaceport in French Guiana on an Ariane 5 launcher. Planned to reach Jupiter in 2031, the mission aims to carry out a detailed exploration of the Solar System's largest planet and its icy moons, which potentially have habitable environments.

### 2. Key Points

- Juice has been constructed by an industrial consortium led by Airbus Defence and Space a division of the Airbus group responsible for the development and manufacturing of the corporation's defence and space products based on the parameters provided by the ESA.
- Only two other spacecraft have ever examined Jupiter: the Galileo probe, which orbited the gas giant between 1995 and 2003 and Juno, which has been circling the planet since 2016.
- Notably, by the time Juice reaches Jupiter another spacecraft, **NASA's Europa Clipper** would already be orbiting the planet and scheduled to be launched in October this year, Europa Clipper would arrive at Jupiter in 2030 and aims to study its Europa moon.

### 3. About Juice Mission

- The Juice "Will make detailed observations of the giant gas planet and its three large ocean-bearing moons Ganymede, Callisto and Europa", by using remote sensing, geophysical and in situ instruments.
- Scientists for quite some time have known that these three moons of Jupiter possess icy crusts, which they believe contain oceans of liquid water underneath, making them potentially habitable.

- The Juice will help probe these water bodies by creating detailed maps of the moons' surfaces and enable the scientists for the first time, to look beneath them.
- Although the mission will examine all three moons, the main focus will be on Ganymede, as it is the largest moon in the Solar System larger than Pluto and Mercury and the only one to generate its magnetic field.
- Juice, which will move into **Ganymede's orbit** after approximately four of arriving at Jupiter, will use its suite of ten sophisticated instruments to measure how Ganymede rotates, its gravity, its shape and interior structure, its magnetic field, its composition and penetrate its icy crust using radar down to a depth of about nine km.
- Another primary goal of the mission is to create a comprehensive picture of Jupiter by trying to understand its origin, history and evolution.
- Scientists believe that this would help them provide "much-needed insight into how such a planetary system and its constituents are formed and evolved, as well as revealing how possibly habitable environments can arise in Jupiter-like systems around other stars".
- The Juice will also analyse the chemistry, structure, dynamics, weather and climate of Jupiter and its ever-changing atmosphere.

#### 4. Is Juice capable of Detecting life?

- As mentioned before, as the three moons, **Ganymede, Callisto and Europa** are believed to hold immense amounts of water, which could be around six times more than the volume of water in Earth's oceans, there is a possibility that life is present on them.
- According to ESA, life on these moons could be in the form of microbes. More advanced species might also be present like the ones we detect in deep-sea trenches and at hydrothermal vents on Earth, such as various kinds of coral, worms, mussels, shrimp and fish.
- However, Juice isn't equipped to detect life. What it is capable of is finding out whether there could be places around Jupiter, inside the icy moons, where the necessary conditions, such as water, biological essential elements, energy and stability, to sustain life are present.

- If life exists on these moons, we expect it to be in the water and that's very hard to access. This is because it's not yet possible to go very deep underneath the ice crusts, where life might be present.

# LARGE HADRON COLLIDER

## 1. Context

The Large Hadron Collider (LHC), built by the European Organization for Nuclear Research (CERN), is on the energy frontier of physics research, conducting experiments with highly energised subatomic particles.

## 2. Key Points

The LHC, true to its name, is three things.

1. It is large so large that it is the world's largest science experiment.
2. It is a collider. It accelerates two beams of particles in opposite directions and smashes them head-on.
3. These particles are hadrons. Currently, engineers are warming up the LHC for its third season of operations, following upgrades that will have made the collider and its detectors more sensitive and accurate than before. It will start collecting data again from midMay.

## 3. The functioning of the LHC

- A hadron is a subatomic particle made up of smaller particles.
- The LHC typically uses protons, which are made up of **quarks and gluons**.
- It energises the protons by accelerating them through a narrow circular pipe that is 27 km long.
- Simply put, this pipe encircles two D-shaped magnetic fields, created by almost 9,600 magnets. There is a proton at the 3 o'clock position.
- It is made to move from there to the 9 o'clock position by turning on one hemisphere of magnets and turning on one hemisphere of magnets and turning off the other, such that the magnetic field acting on the proton causes it to move clockwise.

- Once it reaches the 9 o'clock position, the magnetic polarity is reversed by turning off the first hemisphere and turning on the second.
- This causes the proton to move in an anticlockwise direction, from the 9 o'clock position.
- This way, by switching the direction of the magnetic field more and more rapidly, protons can be accelerated through the beam pipe.
- There are also other components to help them along, focus the particles, and keep them from hitting the pipe's walls.
- Eventually, the protons move at 99.999999 per cent of the speed of light.
- In the process, they accrue a tremendous amount of energy according to the special theory of relativity.

#### **4. The effects of a collision**

- When two antiparallel beams of energised particles collide head-on, the energy at the point of collision is equal to the sum of the energy carried by the two beams.
- Thus far, the highest centre of mass collision energy the LHC has achieved is 13.6 TeV (teraelectronvolts).
- This is less energy than what would be produced if you clapped your hands once.
- The feat is that the energy is packed into a volume of space the size of a proton, which makes the energy density very high.
- At the moment of collision, there is chaos. There is a lot of energy available, and parts of it coalesce into different subatomic particles under the guidance of the fundamental forces of nature.
- Which particle takes shape depends on the amount and flavour of energy available and which other particles are being created or destroyed around it.
- Some particles are created very rarely. If a particle is created with a probability of 0.00001 per cent there will need to be at least 10 million collisions to observe it.
- Some particles are quite massive and need a lot of the right kind of energy to be created (this was one of the challenges of discovering the Higgs boson).
- Some particles are extremely shortlived and the detectors studying them need to record them in a similar timeframe or be alert to proxy effects.

- The LHC's various components are built such that scientists can tweak all these parameters to study different particle interactions.

## 5. The findings of the LHC

- The LHC consists of nine detectors. Located over different points on the beam pipe, they study particle interactions in different ways.
- Every year, the detectors generate 30, 000 TB of data worth storing and even more overall.
- Physicists pore through this data with the help of computers to identify and analyse specific patterns.
- This is how the ATLAS and CMS detectors helped discover the Higgs boson in 2012 and confirmed their findings in 2013.
- The LHC specialises in accelerating a beam of hadronic particles to certain specifications and delivering it.
- Scientists can choose to do different things with the beam. For example, they have used the LHC to energise and collide lead ions with each other and protons with lead ions.
- Using the data from all those collisions,
  1. They have tested the predictions of the Standard Model of particle physics,'
  2. The reigning theory of subatomic particles;
  3. Observed exotic particles like pentaquarks and tetraquarks and checked if their properties are in line with theoretical expectations; and
  4. Pieced together information about extreme natural conditions like those that existed right after the Big Bang.

## 6. What lies ahead for the LHC

- These successes strike a contrast with what the LHC has not been able to find "new physics", the collective name for particles or processes that can explain the nature of dark matter or why gravity is such a weak force, among other mysteries.
- The LHC has tested some of the predictions of theories that try to explain what the Standard Model can't and caught them short.
- This has left the physics community in a bind.

- One way forward, which is already in the works, is to improve the LHC's luminosity (a measure of the machine's ability to produce particle interactions of interest) by 10x by 2027 through upgrades.
- Another more controversial idea is to build a bigger version of the LHC, based on the hypothesis that such a machine will be able to find 'new physics' at even higher energies.
- While both CERN and China have unveiled initial plans for bigger machines, physicists are divided on whether the billions of dollars they will cost can be used to build less expensive experiments, including other colliders, with guaranteed instead of speculative results.

## TEMPO

### 1. Context

A SpaceX Falcon 9 rocket successfully launched from Florida, carrying a new NASA device that can track air pollution over North America.

### 2. Key points

- The Tropospheric Emissions Monitoring of Pollution (TEMPO) instrument will allow scientists to monitor air pollutants and their emissions sources from space more comprehensively than ever before, down to the neighbourhood level.
- This instrument will measure pollution and air quality across greater North America on an hourly basis during the daytime, all the way "from Puerto Rico up to the tar sands of Canada".
- The data will be used by the US Environmental Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA) and other agencies responsible for tracking atmospheric pollution.

### 3. The Speciality of TEMPO

- The TEMPO mission is about more than just studying pollution it's about improving life on Earth for all.

- By monitoring the effects of everything from rush-hour traffic to pollution from forest fires and volcanoes, NASA data will help improve air quality across North America and Protect our planet.
- A unique feature of TEMPO, which is about the size of a washing machine and has been described as a chemistry laboratory in space, is that will be hosted on an Intelsat communications satellite in geostationary orbit.
- Existing pollution-monitoring satellites are in low Earth orbit, which means they can only provide observations once a day at a fixed time.
- TEMPO will be able to measure atmospheric pollution down to a spatial resolution of 4 square miles (10 square kilometres) or neighbourhood level.

#### **4. About Geostationary orbit**

- Geostationary orbit is a common orbit for weather satellites and communications satellites, but an air quality instrument measuring gases had not been there yet.
- In a geostationary orbit 22, 236 miles (35, 786 kilometres) above the equator, TEMPO will match the rotation of the Earth, meaning it will stay over the same location in North America at all times.
- The great thing about TEMPO is that for the first time, we will be able to make hourly measurements over North America, so it will be able to see What's happening over the whole day as long as the sun is up.
- TEMPO will have multiple applications from measuring levels of various pollutants to providing air quality forecasts and helping the development of emission-control strategies.

#### **5. Importance of the Mission**

- More than 40 per cent of the US population, 137 million people, live in places with unhealthy levels of particle pollution or ozone.
- Air pollution is blamed for some 60, 000 premature deaths a year.
- Among the pollutants tracked by TEMPO will be nitrogen dioxide, produced from the combustion of fossil fuels, formaldehyde and ozone.
- The data will be made available online for members of the public to monitor air quality information in their local area.

- TEMPO will power up at the end of May or in early June and begin producing data in October, although it will not be made available to the public until April 2024.

## LIGO IN INDIA

### 1. Context

The government has given the final go-ahead to India's Laser Interferometer Gravitational-Wave Observatory or LIGO, project, clearing the way for the construction of the country's biggest scientific facility that will join the ongoing global project to probe the universe by detecting and studying gravitational waves.



## 2. About LIGO

- LIGO is an international network of laboratories that detect the ripples in spacetime produced by the movement of large celestial objects like stars and planets.
- These ripples were first postulated in Albert Einstein's **General Theory of Relativity** which encapsulates our current understanding of how gravitation works.
- LIGO-India will be located in the Hingoli district of Maharashtra about 450 km east of Mumbai and is scheduled to begin scientific runs in 2030.

## 3. Newton's law of gravitation

- Newton postulated that the force that makes any object fall to the ground was also the one that makes heavenly bodies go around in their orbits.
- Newton proposed that this was because every celestial body exerted an attractive force on every other body in the universe.
- He worked out a mathematical formulation to calculate the strength of this attractive force which, he found, was directly proportional to the masses of the two bodies and inversely proportional to the square of the distance between them.
- For more than two centuries, this remained the best understanding of gravitation. It could explain the motion of all celestial objects and the mathematical framework was able to produce results that matched precisely with the observations.
- Newton's law of gravitation is an integral part of elementary science education even today and its mathematics continues to be applied in a wide variety of modern-day scientific investigations with a remarkable degree of accuracy.

## 4. Deficiencies in Newton's law

- Its success notwithstanding, the theory suffered from a couple of major deficiencies, one of which was evident even during Newton's time.

- Newton himself acknowledged it while describing the gravitational force in his landmark publication, *The Mathematical Principles of Natural Philosophy* in 1687 and his contemporaries were aware of it.
- The theory did not explain the reason for the existence of the attractive force between any two bodies. Why should every piece of matter feel attracted towards everything else?
- The **second problem** became apparent much later, at the start of the 20th century, as a consequence of Albert Einstein's Special Theory of Relativity.
- Special Relativity, published in 1905, established that nothing could travel faster than the speed of light.
- But the gravitational force seemed to be propagating instantaneously, over any large distance, without any delay at all. Time does not even figure in Newton's gravitational equation.

## 5. General Theory of Relativity

- Ten years later, in 1915, Einstein altered our understanding of gravitation with his General Theory of Relativity.
- He altered our understanding of gravitation with his General Theory of Relativity. He had already shown, with special Relativity, that space and time were not independent entities but had to be woven together as spacetime.
- With General Relativity, which was essentially a new theory of gravitation, Einstein took a huge leap of thought.
- He proposed that spacetime was not just a passive backdrop to the events happening in the universe. It was not a mere transparent, inert and static stage.
- Instead, spacetime interacted with the matter and was influenced by it and in turn, itself influenced events.
- It was like a soft fabric that responds to a heavy object placed on it and curls around it.
- The curvature in spacetime so produced was the reason other smaller bodies in the vicinity felt the gravitational pull. There is no force at all.
- Gravitation is just the curvature in spacetime. Since the spacetime itself is curved around the heavier mass, other nearby objects, moving normally in

straight lines in their spacetime, find themselves going around the central mass.

- The heavier the mass in the centre, the steeper and bigger the curvature in spacetime and the stronger and more extended the gravitational field.
- With one mind-bending idea, Einstein was able to explain the origin of the gravitational force and also the reason for the perpetual, near-circular, motion of all heavenly bodies.
- As physicists John Wheeler described very succinctly, matter tells spacetime how to curve and spacetime tells matter how to move.
- Also, this model of gravity does not involve instantaneous propagation of force. The experience of a pull towards the central mass happens at the speed of light.

## 6. Gravitational waves

- General Relativity also predicted that moving objects would generate gravitational waves in spacetime, just like a moving boat produces ripples in water.
- Because these are ripples in spacetime itself, gravitational waves have the effect of causing a temporary deformation in a body when it comes in contact.
- Since the spacetime itself elongates or contracts during the propagation of the gravitational wave, everything lying in that spacetime also goes through the same experience.
- This effect is similar to a ball being slightly squeezed along any of its diameters.
- The ball flattens a bit in the direction of pressure that is applied, while it bulges out in the perpendicular direction.
- When a gravitational wave passes the Earth, for example, the Earth gets similarly squeezed in one direction and bulges in the perpendicular direction.
- Because gravity is the weakest of all natural forces, the deforming effect of gravitational waves is extremely tiny, the reason why they could not be experimentally verified for 100 years even though many other predictions of General Relativity were tested repeatedly during this period.

## 7. Working of LIGO

- It is to measure these tiny effects of gravitational waves that scientists have set up the LIGO, one of the most complex pieces of scientific equipment ever built.
- The observatory comprises two 4 km long vacuum chambers, built perpendicular to each other.
- Highly reflective mirrors are placed at the end of the vacuum chambers.
- Light rays are released simultaneously in both vacuum chambers. They hit the mirrors. get reflected and are captured back.
- In normal circumstances, the light rays in both chambers would return simultaneously.
- But when a gravitational wave arrives, one of the chambers gets a little elongated, while the other one gets squished a bit.
- In this case, light rays do not return simultaneously and there is a phase difference.
- The presence of a phase difference marks the detection of a gravitational wave.
- The precision of the measurements required to detect gravitational waves is mindboggling. At a 4 km scale, the changes in distance that light has to travel because of the gravitational wave is 10, 000 times smaller than the width of the proton and LIGO instruments are designed to pick this up.
- This is similar to measuring the distance to a neighbouring star 4.2. light years away with an accuracy smaller than the width of human hair.
- The first-ever detection of a gravitational wave happened on September 14, 2015, by the two US-based LIGO detectors.
- These gravitational waves were produced by the merger of two black holes, which were about 29 and 36 times the mass of the sun, 1.3 billion years ago.
- Black hole mergers are the source of some of the strongest gravitational waves. But even these are extremely feeble to detect.
- Scientists checked the results for four months before announcing their results in February 2016.
- This achievement was promptly rewarded with the Nobel Prize in 2017. Since then, nine more gravitational wave events have been detected by the four observatories in the United States, Europe and Japan.

## 8. LIGO Importance to India

- LIGO India, for which the government approval was given on Thursday, would be the fifth node of this international network of gravitational wave observatories, and possibly the last.
- The instruments at these observatories are so sensitive that they can easily get influenced by events like earthquakes, Landslides or even the movement of trucks and produce a false reading. That is why multiple observatories are needed to revalidate the signals.
- The chances of two observatories, located in different geographies, producing the same false reading are negligible. But two detectors are the bare minimum.
- More is needed to tap all possible sources of gravitational waves and to improve the quality and accuracy of information.
- The LIGO website indicates that the India detector, the fifth node in the international network, could be all that is required for the time being.
- For India, LIGO is a momentous milestone. India has been an active collaborator in several international science projects.
- These include the Large Hardon Collider experiments and ITER, the effort to create a thermonuclear reactor that would enable controlled nuclear fusion reactions.
- India is also expected to be a partner country in setting up the next space station after the current International Space Station comes to the end of its life later this decade.
- However, India has not yet built a cutting-edge scientific facility on this scale on its soil, something that can have huge spin-off benefits for its science and technology sector.
- The India-based Neutrino Observatory, one such facility that has been planned in India, has been facing delays.
- LIGO, therefore, is crucial to demonstrating India's intent and capability to pull off complex science projects on its own.

## INDIA'S SECOND SPACE AGE

## 1. Background

- The Space Age began in 1957 with the launch of satellite **Sputnik 1** and in 1961, cosmonaut Yuri Gagarin became the world's first person in space.
- Neil Armstrong made history by walking on the moon in 1969. The First Space Age became reality.
- The Second Space Age is no precise date for its beginning, the contrast in today's space domain is stark.
- Between the 1950s to 1991, a period dominated by the Cold War, 60 to 120 space launches took place annually and 93 per cent of these were by the United States and the erstwhile Union of Soviet Socialist Republic (USSR) governments.
- Three decades later, there are not only many more actors in the space scene, but a majority are also private companies.
- Last year, there were 180 rocket/space launches, 61 by Elon Musk's **Space X**; 90 per cent of global space launches since 2020 are by and for the private sector.

## 2. India's space journey

- India's entry into the First Space Age in the 1960s. The first sounding rocket, a U.S.-supplied Nike Apache, with over 15, 000 employees and an annual budget between ₹ 14, 000 crore in recent years. Through these decades, it has sought to prioritise societal objectives and benefits.
- Its first major project was **Satellite Instructional Television Experiment (SITE)** that involved leasing a U.S. satellite in 197576 for educational outreach across 2,400 villages covering five million people.
- Satellite technology was a new mass communication tool. This led to the INSAT series in the 1980s, followed by GSAT, which provided the backbone for the country's telecommunication and broadcasting infrastructure.
- This was followed by remote sensing capability development. The use of space-based imagery for weather forecasting, resource mapping of forests, and analysing agricultural yields, groundwater and watersheds gradually expanded to cover fisheries and urban management.

- Following the Indian Remote Sensing Programme, this plan grew with the Oceansat and Cartosat series.
- The field of satellite-aided navigation emerged later. It began with **GAGAN**, a joint project between ISRO and the Airports Authority of India, to augment Global Positioning System (GPS) coverage of the region, to improve air traffic management over Indian airspace.
- This has now been expanded to a regional navigation satellite system called **Navigation with Indian Constellation** (NavIC).
- In parallel came the development of satellite launch capabilities. Beginning with the SLV1 in the 1980s, it took a decade before ISRO developed the PSLV series that has become its workhorse with over 50 successful launches.

### 3. Space Potential

- The origins of the Second Space Age can be traced to the Internet. In India, the process began accelerating as the 1990s saw the emergence of private TV channels and cable TV followed by direct-to-home transmissions.
- The demand for satellite transponders and ground-based services exploded. Today, more than half the transponders beaming into Indian homes are on foreign satellites.
- The last 15 years witnessed another transformation and this time India was in lockstep with the developed world.
- The age of mobile telephony, followed by smartphones has shown the world what a data-hungry and data-rich society India is.
- Broadband OTT and now 5G promise a double-digit annual growth in demand for satellite-based services.
- In 2020, the global space economy was estimated at \$450 billion, growing to \$ 600 billion by 2025.
- The Indian Space economy is estimated at \$9.6 billion in 2020, which is expected to be \$13 billion by 2025.
- However, the potential is much greater with an enabling policy and regulatory environment.
- The Indian space industry could easily exceed \$60 billion by 2030, directly creating more than two lakh jobs.

#### 4. India's space economy

- The reason is that in terms of end-user revenue, only a fifth is generated by the government.
- Media and entertainment account for 26 per cent of India's space economy, with consumer and retail services accounting for another 21 per cent.
- In terms of space activities downstream activities such as satellite services and the associated ground segment are dominant accounting for over 70 per cent of India's space economy; upstream activities of satellite manufacturing and launch services contribute to the smaller share. A similar trend can be seen in developed countries.
- The reason is that India has been an early adopter of digital app-based services.
- The growing role of the private sector is also evident in the numbers and ownership of satellites.

#### 5. Satellites in Space

- According to the **United Nations Office for Outer Space Affairs** (UNOOSA), there are 8, 261 satellites in orbit, of which nearly 5, 000 are active.
- Till 2010, about 60 to 100 satellites were launched annually. The pace has picked up in recent years.
- In 2020, 1, 283 satellites were launched. Today, Starlink operates a constellation of over 3, 500 satellites and has a million paying customers.
- Both **Starlink and One Web** (in which Airtel has a stake) project constellations of 40, 000 satellites each.
- Jeff Bezos of Amazon has launched **Project Kuiper** to bring low-latency broadband connectivity around the globe.

#### 5. Creating an enabling environment

- The Indian Private sector is responding to the demands of the second space age. From less than a dozen space startups five years ago, there are over 100 today.

- The pace of investment is growing. From \$3 million in 2018, it doubled in 2019 and crossed \$65 million in 2021.
- The sector is poised for takeoff as a transformative growth multiplier like the IT industry did for the national economy in the 1990s.
- Today, ISRO manages four to five launches annually. It manages 53 operational satellites 21 for communication, 21 for earth observation, eight for navigation and the remaining as scientific experimental satellites (China operates 541).
- In addition, ISRO has missions such as **Chandrayaan, Mangalyaan and Gaganyaan** (manned space mission).
- ISRO has always been an open organisation that has worked closely with the Indian Private Sector.
- However, for some private sector companies, space technology-related work is a small part of their revenue stream. They were content as vendors, producing to defined specs and designs.
- The startups are different. Their revenue stream depends on space-related activities and they need a different relationship with ISRO and the government.
- ISRO today is the operator, user, service provider, licensor, rule maker, and incubator.
- It has steered India through the First Space Age and needs to do what it can do best now with its resources and its high-quality manpower research.
- In 2017, the government introduced the first draft Space Activities Bill in Parliament but it lapsed in 2019.
- There has been talking about commercialising the **PSLV and SSLV** launch services and **NewSpace India Limited (NSIL)** was set up to replace Antrix.
- The **Indian National Space Promotion and Authorization Centre (INSPACe)** was set up in 2020 as a single window clearance for the private sector.
- However, whether it will emerge as the licensing authority or a regulator is unclear. An **Indian Space Association (ISpA)** was created as an industry association.
- In recent years, a series of policy papers have been circulated for discussion a satcom/telecom policy, an earth observation policy and a foreign direct investment policy.

- These have served a purpose. What is needed now is legislation (a space activities act).
- This provides the legal grounding that policy papers lack; helps set up a regulator authority and creates an enabling environment for raising venture capital funding into the Indian space startup industry.
- The window of opportunity for India to join the Second Space Age exists; it should not be lost.

### General Studies III: Environment & Ecology

## BIODIVERSITY LOSS AFFECTS HUMAN HEALTH

### 1. Context

Animals, plants and fungi biodiversity holds a treasure trove of chemicals that can be used to treat diseases from malaria to cancer. But its loss is driving species to extinction, dashing many hopes for medicine.

### 2. Key points

- Bright reds, yellows and blues the colour of poison dart frogs offer a stark warning to curious predators.
- The amphibians are toxic. when eaten, the chemicals on their skin can cause convulsions, muscle contractions and even death. For humans, these colours mean something more hopeful.
- Those same poisonous chemicals could provide the key to medications that treat infections now resistant to the antibiotics, we have already developed.

- Poison **dart frogs** have important medical compounds that are good anaesthetics.
- They have good antibiotics that are on their skin that we are using now. And many that have not even been discovered or commercialised yet.

### 3. The basis for much-needed medicine

- Natural compounds found in frogs, plants and many other species provide the basis for many of our medicines.
- **Paclitaxel**, a drug used to **treat cancer**, for example, is derived from the **bark of the Pacific yew tree and ziconotide a drug** that is used to treat severe pain comes from **cone snails**.
- Around 70 per cent of cancer medications are based on nature, according to the UN's Intergovernmental SciencePolicy Platform on Biodiversity and Ecosystem Services (IPBES).
- But biodiversity, which includes the plants, animals, fungi and bacteria found on Earth is disappearing and so, too are the possibilities they hold.
- **Climate change** and **chytrid fungus** have decimated our frog populations and led to a large number of extinctions.
- Chytrid fungus causes a disease in amphibians that has wiped out as many as 90 species.
- Maybe we don't need so many different hundreds of species of frog. But on another hand, that potential kind of treasure trove is still there.

### 4. Human-driven extinction

- Around 1 million animal and plant species are currently estimated to be threatened with extinction, according to a 2019 report published by IPBES, although estimates vary wildly.
- Experts say species are disappearing 1, 000 to 10, 000 times faster than the normal rate of extinction and humans are to blame.
- The two things that threaten biodiversity the most at the moment are overharvesting and land conversion.
- That's not just clearance of land for livestock to graze, but also clearance of land for food and clearance of oceans.

Since 1990, around 420 million hectares of forest an area almost the size of the European Union has been lost and turned into farmland and cleared for other uses. Meanwhile, fish stocks are also diminishing, with figures from 2017 estimating that we have overfished a third of global stocks.

- Human-driven climate change is also having an impact. Growing carbon dioxide levels are leading to increased ocean acidification, bleaching corals and destroying vast habitats.
- Rising temperatures and unsustainable harvesting are also pushing some plant species to the edge of extinction.

## 5. Traditional medicine

- While the loss of biodiversity is making it more difficult to discover new medications, it is also affecting how communities access traditional medicine.
- An estimated 4 billion people still rely primarily on natural remedies to heal themselves whether it is using latex from fig trees to treat intestinal parasites in the Amazon or **neem oil to treat skin disorders in India**.
- They don't go to the pharmacy, they go to what they have collected and stored. So when those plants are difficult to access, that's putting their health at risk.
- Around 40 per cent of the world's plant species are threatened with extinction, according to a report published by the Royal Botanic Gardens Kew in London, which is home to one of the most diverse botanical collections in the world.
- Among the threatened plants are 723 species that are used medicinally.
- The Pacific yew tree the source of paclitaxel, the chemotherapy drug, is now classified as near threatened under the **IUCN Red List**, which tracks the status of different species.

## 6. The Future of drug discovery

- When thinking about drug discovery, it's hard to know exactly what humans stand to lose through the loss of species that make up a diverse natural world.
- There is still so much to investigate. The ocean for example remains still largely undiscovered.
- Scientists are looking to chemicals produced by sponges to provide treatment for cancers, for example. But it is more complex than simply finding and examining single species.
- Gerwick is investigating the symbiotic relationship between the weaver shrimp and cyanobacteria.
- The shrimps weave the bacteria into nests, which protect them from predators because of the toxic molecules the bacteria produce molecules that have the potential as a treatment for pancreatic cancer in humans.
- So the bacterium produces these compounds and the shrimp derives benefit from it and maybe humans do as well.
- If we lose biodiversity we are losing access to molecules and some of those molecules might be compounds that would save the life of one of our children from an infectious disease, from cancer.

## 7. Nature health equals human health

- Humans are almost completely dependent on the natural world to stay healthy.
- Beyond drug discovery, we rely on trees to take pollutants like carbon dioxide, out of the air.
- We need working wetlands to keep the water clean and we need insects to pollinate our crops to provide us with food.
- Measures are being taken to protect biodiversity and reverse the loss.
- In December, 188 governments agreed to take action to put 30 per cent of the planet under protection by 2030.
- But it is not clear whether it will be sufficient and come quickly enough.

# DEEP SEA MINING

## 1. Context

Currently there is no internationally agreed code for mining under the ocean. After two weeks of negotiations ending , however, the International Seabed Authority has now decided that companies can apply from July to mine the ocean floor. But campaigners and even corporations are pushing back due to fears of the massive environmental impact

## 2. Deep Sea and Mining

- The deep sea is a trove of biodiversity, rich in living resources used in medicines and critical in regulating the climate and providing spawning and feeding grounds for fish
- Whether copper or nickel for batteries, cobalt for electric cars or manganese for steel production: rare earth minerals and metals are fundamental to the technologies driving the world's energy transition
- But while demand is rising fast, the resources are also becoming scarcer globally
- According to estimates, in just three years the world will need twice as much lithium and 70% more cobalt.
- And this is despite the slow progress of the energy transition. According to the International Energy Agency, if climate goals were properly pursued through the massive expansion of renewable energy, about five times as much lithium and four times as much cobalt would be needed by 2030
- The projected production volumes for these raw materials fall far short of demand. To close this gap, some countries and companies now want to mine the resources in the deep sea

## 3. Seabed and Minerals

- So-called polymetallic nodules, also known as manganese nodules, are driving the rush to mine seabeds

- These potato-sized lumps contain high proportions of nickel, copper, manganese, rare earths and other valuable metals
- The best-studied area is currently the seabed at between 3,500 and 5,500 meters [between 11,500 feet and 18,000 feet] in the Clarion-Clipperton Zone in the eastern Pacific Ocean near the US state of Hawaii
- Spanning thousands of kilometers, the area contains more nickel, manganese and cobalt than any known area on land
- The basin in the central Indian Ocean and the seabed off the Cook Islands, Kiribati atolls and French Polynesia in the South Pacific are also of interest for potential extraction
- The nodules' composition happens to be remarkably well-aligned with the needs of electric vehicle makers
- Carmakers will need a great deal more of these metals in order to make battery cathodes and electrical connectors for an electric vehicle fleet of around a billion cars and trucks by mid-century
- The Canada-based company specializes in the medium and long-term exploitation of mineral resources in the Clarion-Clipperton Zone
- Although manganese nodules are not yet being mined anywhere in the world, that could soon change as they practically lie directly on the seabed and can be easily extracted without breaking up rock layers or eroding the seabed

#### **4. Marine Life**

- Seabed mining is made easy when a huge vacuum can simply travel over the ocean floor to suck up the nodules which are then brought to the surface with a hose
- That means all organisms, bacteria and higher organisms that live in and on the sediment and on the nodules are completely sucked in
- These organisms also require manganese nodules to survive, meaning they “won't come back for millions of years
- Rapid regeneration is impossible because it can take a million years for a nodule to grow a few millimeters
- Scientists and opponents of deep-sea mining also fear that the clouds of sediment from the suction could cause enormous damage to ecosystems within a radius of several hundred kilometers

- Potential victims would include plants, creatures in the middle water depths and microorganisms whose respiratory tracts could be blocked by the sediment

## 5. Environmental Balance

- The Metals Company aims to mine the nodules in the Clarion-Clipperton Zone, and makes no secret of the possible damage to marine biodiversity
- However, the company has argued that deep-sea mining could be less damaging to the environment than extraction on land, pointing out that it would emit 80% less greenhouse gas emissions
- The Metals Company has also claimed that deep-sea mining would be largely automated, avoiding the exploitation of cobalt miners, including children, in Congo, where most of the world's cobalt is mined today
- Possible exploitation of deep-sea deposits is regulated by the International Seabed Authority, which was established under the UN Convention on the Law of the Sea
- It has awarded 31 exploration contracts so far worldwide, but none for commercial mining activities
- These permits allow companies to explore the resources and potential for future extraction, but also require them to collect data for environmental analysis
- The Pacific island state of Nauru has been collaborating with The Metals Company to force through a code by 2023 so applications can be decided. But other island nations have called for a moratorium on deep-sea mining
- Deep-sea mining would go beyond harming the seabed and have a wider impact on fish populations, marine mammals and the essential function of the deep-sea ecosystems in regulating the climate

### Prelims Corner:

1. Consider the following statements about Global Methane Pledge

1. It was launched at the Conference of Parties (COP 27) in Sharm El Sheikh, Egypt.

2. The aim is to cut down methane emissions by 30 per cent from 2020 levels by the year 2030.

Select the correct answer using the codes given below –

- A. 1 only            B. 2 only            C. Both 1 and 2            D. Neither 1 nor 2

Answer (B)

Methane is a powerful but short-lived climate pollutant. Methane gas is the second-most abundant greenhouse gas in the atmosphere, after carbon dioxide. The Global Methane Pledge was launched at COP26 in November 2021 to catalyse action to reduce methane emissions. Hence, statement 1 is not correct.

The pledge was led by the United States and European Union. As of now, there are 111 country participants.

The participants joining the Pledge agree to take voluntary actions to contribute to a collective effort to reduce global methane emissions at least 30 percent from 2020 levels by 2030. Hence, statement 2 is correct.

2. The term cryptojacking is related to:

- A. Cryptocurrency trading.  
B. Spyware which affects android and ios.  
C. It is a cyber attack wherein a computing device is hijacked and controlled by the attacker.  
D. Transfer of cryptocurrency

Answer (C)

Cryptojacking is a cyber attack wherein a computing device is hijacked and controlled by the attacker, and its resources are used to illicitly mine cryptocurrency.

Coin mining is a legitimate, competitive process used to release new crypto coins into circulation or to verify new transactions.

It involves solving complex computational problems to generate blocks of verified transactions that get added to the blockchain

3. Consider the following statements about Polar Satellite Launch Vehicle (PSLV) C-54 rocket:

1. It has launched the second generation satellite in the Oceansat series.
2. It has launched India-Bhutan satellite which will provide high resolution images to Bhutan for their natural resources management.

Select the correct answer using the codes given below

- A. 1 only                      B. 2 only                      C. Both 1 and 2                      D. Neither 1 nor 2

Answer (B)

ISRO's workhorse PSLV-C54 has successfully launched EOS-06 satellite along with Eight Nano-satellites, including India-Bhutan satellite. The mission was accomplished from Satish Dhawan Space Centre SHAR on November 26, 2022. EOS-06 is the third generation satellite in the Oceansat series. The satellite onboard carries four important payloads viz. Ocean Color Monitor (OCM-3), Sea Surface Temperature Monitor (SSTM), Ku-Band Scatterometer (SCAT-3), ARGOS. Hence, statement 1 is not correct.

The primary satellite, Earth Observation Satellite, is built by ISRO for use by departments and ministries in the Government of India.

The Ministry of External Affairs, India assisted in training Bhutanese engineers in satellite building and testing, as well as on processing and analysing satellite data. The India-Bhutan satellite will provide high resolution images to Bhutan for their natural resources management. Hence, statement 2 is correct

4. Which organisation has formulated the plan of Carbon Border Adjustment Mechanism?

- A. United Nation Environment Programme
- B. United Nations Framework Convention on Climate Change
- C. International Solar Alliance
- D. European Union

Answer (D)

The Carbon Border Adjustment Mechanism is a plan from the European Union (EU) to tax carbon-intensive products, such as iron and steel, cement, fertiliser, aluminium and electricity generation, from 2026.

The carbon border tax involves imposing an import duty on a product manufactured in a country with more lax climate rules than the one buying it.

The EU came up with the Carbon Border Adjustment Mechanism in 2021 and it has been designed in compliance with World Trade Organization (WTO) rules and other international obligations of the EU.

5. Consider the following pollutants

1. Sulphur dioxide
2. PM 2.5
3. Ozone
4. Carbon dioxide
5. Carbon monoxide

Which of the following pollutants are covered under the Air Quality Index (AQI)?

- A. 1, 2, 3 and 4 only
- B. 1, 2 and 4 only
- C. 2, 3, and 5 only
- D. 1, 2, 3 and 5 only

Answer (D)

The colour-coded AQI index was launched in India in 2014, and it helps the public and the government to understand the condition of the air.

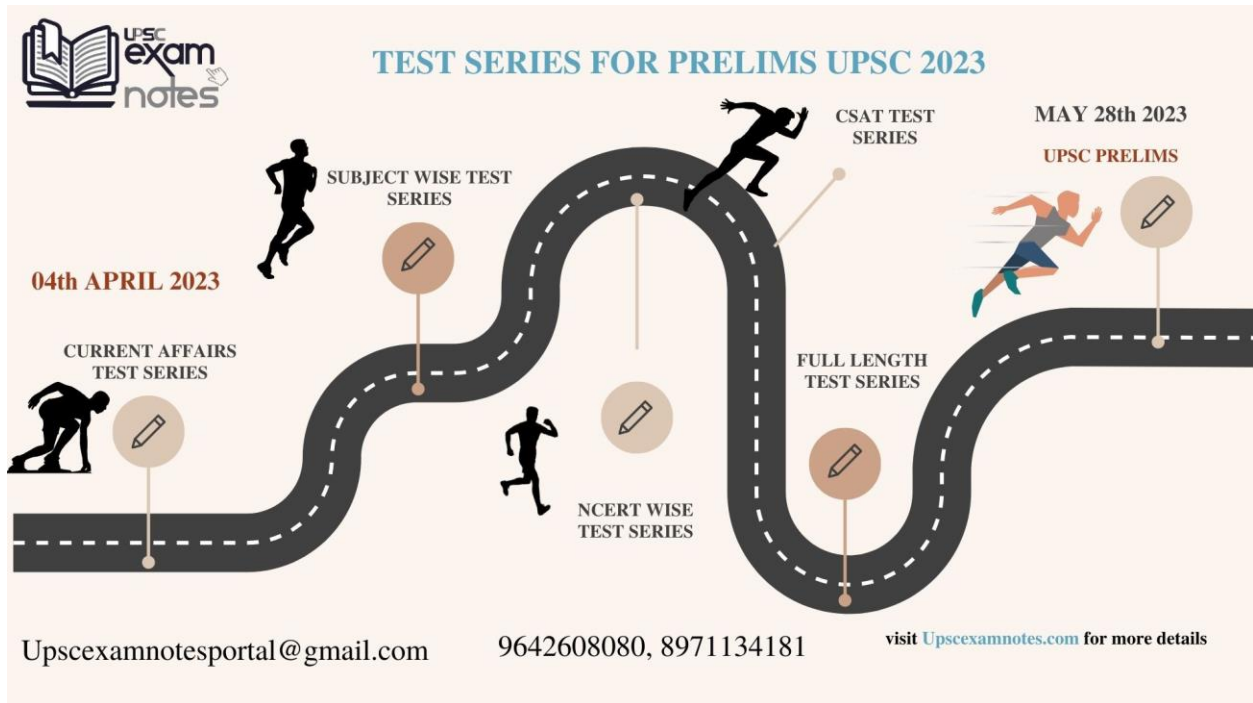
The AQI transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour.

The pollutants measured include PM 10, PM 2.5, Nitrogen Dioxide, Ozone, Carbon monoxide, Ammonia and Sulphur dioxide.

There are six categories of AQI, namely 'Good' (0-50), 'Satisfactory' (50-100), 'Moderately polluted' (100-200), 'Poor' (200-300), 'Very Poor' (300-400), and 'Severe' (400-500)

### **Mains Corner:**

- 1. What is Dabba Trading and explain how it works? Discuss the difference between Legal Trading and Dabba Trading. (250 Words)**
- 2. Has the Governor been acting more of an 'agent of the center' rather than being the 'constitutional head of state'? Analyse in the light of recent controversies involving the post of Governor in India. (250 Words)**
- 3. What are the conditions under which a political party can lose its standing as a national party? How does a State party gain or lose its status? Discuss the benefits of recognition. (250 Words)**
- 4. What is the European Space Agency's Jupiter Icy Moons Explorer Mission? Discuss its objectives and significance. (250 Words)**
- 5. What are Parliamentary Committees? Discuss the role and significance of Parliamentary Committees in Indian democracy (250 Words)**



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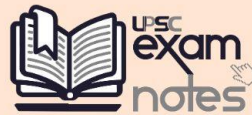
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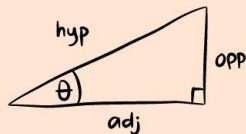
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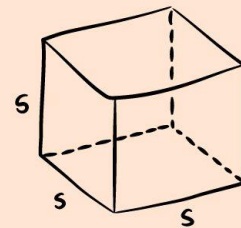
NECESSARY FOR EVERYONE



$$\sin(\theta) = \frac{\text{opp}}{\text{hyp}}$$



10 CSAT Tests



$$V = s^3$$

We have covered each and Every Topic in the  
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