



# PLUTUS IAS

## Weekly Current Affairs

Weekly Current Affairs 01 April 2024 to 07 April 2024



*The Indian* **EXPRESS**



### Corporate Office

Basement 8, Apsara Arcade, Karol Bagh Metro Station  
Gate No. 6, New Delhi 110005

17A/41, 1st Floor, WEA Karol Bagh, New Delhi 110005

706 1st Floor Dr. Mukherjee Nagar Near Batra Cinema  
Delhi – 110009

C 59 Noida Sector 2, Noida, Uttar Pradesh 201301

Phone: 08448440231

Email: [info@plutusias.com](mailto:info@plutusias.com)

Web: [www.plutusias.com](http://www.plutusias.com)



# CONTENTS

## **Polity and Governance ..... 1**

Internet Shutdowns in India ..... 1

Judges in Politics..... 2

Vvpat vs Re – Counting and Verification  
of Votes ..... 4

Prelims Questions..... 8

Mains Questions..... 9

## **Economy ..... 10**

T+0 Beta Version of the Settlement Cycle  
Released ..... 10

Employment Crisis in South Asia as Per  
WB Report ..... 11

Fiscal Federalism vs Centre – State  
Relations in India ..... 13

The Demographic Transition- Opportunities  
and Challenges ..... 17

Prelims Questions..... 18

Mains Questions..... 19

## **Science and Technology ..... 20**

Pm Solar Rooftop Scheme ..... 20

Prelims Questions..... 22

Mains Questions..... 23

## **Ecology and Environment ..... 24**

Climate Change and the Need for Water  
Conservation and Promotion ..... 24

Prelims Questions..... 27

Mains Questions..... 28

## **International Relations ..... 29**

Katchatheevu Island Conflict ..... 29

Prelims Questions..... 30

Mains Questions..... 31

# POLITY AND GOVERNANCE

## INTERNET SHUTDOWNS IN INDIA

### Why in the News?

India has consistently held the top position globally for internet shutdowns over the span of five years, constituting 60% of all worldwide instances of blackout from 2016 to 2022.

### Status of Internet Shutdowns in India

- India has the dubious distinction of leading the world in internet shutdowns, experiencing a significant **780 internet blackouts between 2014 and 2023**. Just in **2023**, there were over **7,000 hours of internet disruptions** documented in the country.
- These shutdowns are **often implemented in response to major events, such as the protests surrounding the Citizenship Amendment Act, the abrogation of Article 370, and the Farm Bills**.
- The state of Jammu and Kashmir has been particularly affected by internet restrictions, witnessing a staggering **433 shutdowns in the past twelve years**. Furthermore, Manipur experienced the **longest internet blackout in the country, lasting from May to December 2023**.
- These frequent and lengthy internet shutdowns have sparked critical discussions about whether India is adhering to international standards regarding internet access.
- A recent **report by Freedom House** paints a concerning picture: Global internet freedom has been on a **downward slope for 13 years straight**, with online human rights taking a hit in 29 countries.
- Interestingly, India's approach to internet restrictions differs from the global trend. While **internet shutdowns worldwide are most commonly used to quell protests, India's internet**

outages are primarily localised, affecting specific regions like districts, cities, and villages.

### Number of internet shutdowns in India by state in 2022



|                    |    |
|--------------------|----|
| Jammu & Kashmir:   | 49 |
| Rajasthan:         | 12 |
| West Bengal:       | 7  |
| Haryana:           | 4  |
| Jharkhand:         | 4  |
| Andhra Pradesh:    | 1  |
| Arunachal Pradesh: | 1  |
| Assam:             | 1  |
| Bihar:             | 1  |
| Manipur:           | 1  |
| Meghalaya:         | 1  |
| Odisha:            | 1  |
| Punjab:            | 1  |

### Legislative Frameworks

India's internet shutdown practices are enabled by a combination of legal loopholes. Here's a breakdown of the key laws involved:

- Indian Telegraph Act:** This act, dating back to 1885, grants states broad authority to restrict internet access during "public emergencies" or for "public safety." However, the act lacks clear definitions for these terms, creating an environment for potential misuse.
- Section 69A of the IT Act:** This section empowers the government to censor online content. While its stated aim is to curb harmful or unlawful content, it has been used to block over 55,000 websites, raising concerns about freedom of expression.
- Unlawful Activities (Prevention) Act:** This law allows the government to block URLs associated with banned organisations. A notable example is the blocking of The Caravan magazine's website, highlighting the potential for misuse of this act.

### Impact of Internet Shutdown

- Fundamental Rights Violations:** Court rulings

have established that internet access is a protected right under India's Constitution. Shutdowns directly contradict these protections for freedom of speech, the right to information, and even the right to practise professions online.

- **Economic Disruption:** Businesses, especially startups and those reliant on online operations, suffer financial losses during shutdowns. Studies estimate substantial economic costs associated with these disruptions.
- **Journalistic Obstructions:** Journalists rely on the Internet to gather and share information. Shutdowns hinder their ability to report on events, infringing on the public's right to know. This violates the fundamental right to freedom of the press established by the Supreme Court.
- **Erosion of Trust:** Frequent shutdowns breed distrust towards authorities. They raise concerns about censorship and a lack of transparency in decision-making.
- **Educational Obstacles:** Learning is hampered when internet access is restricted. Students lose access to online platforms and resources crucial for their education.
- **International Repercussions:** India's frequent shutdowns attract international criticism and damage its reputation on the global stage.

### Arguments Favouring Internet Shutdown

- **Curbing Hate Speech and Misinformation:** Shutdowns are seen as a way to prevent the spread of inflammatory content online that could incite violence or unrest. For instance, some cite the Delhi NCR internet shutdown during farmer protests on Republic Day as a measure to combat misinformation and maintain order.
- **Controlling Protests:** Supporters argue that shutdowns can hinder the organisation and mobilisation of protests that could disrupt public order and security. The government's imposition of internet restrictions in Kashmir after the abrogation of Article 370 is presented as an example of using shutdowns to prevent separatist

movements.

- **Protecting National Security:** Some believe shutdowns can safeguard national security and sovereignty from external threats and cyberattacks. The government's suspension of internet services in border areas during the standoff with China is used as an illustration of shutdowns to prevent potential espionage or sabotage.
- **Controlling Offensive Content:** Supporters argue that shutdowns can be used to restrict access to harmful or offensive content that might target specific groups or individuals. For example, some point to instances where internet access was blocked in certain regions to prevent the circulation of objectionable material.

## JUDGES IN POLITICS

### Why in the News?

The topic of judges assuming official positions post-retirement has sparked discussions, especially following a recent incident involving a former Calcutta High Court judge from West Bengal who joined a political party shortly after leaving the judiciary, prompting inquiries into judicial ethics.

### Constitutional Provisions Related to Retired Judges in India

- **Article 124(7)** of the Constitution prohibits a retired judge of the Supreme Court from practising before any court or authority within India. This provision upholds the independence and impartiality of the judiciary. Nonetheless, the Constitution does not explicitly prohibit retired judges from taking on assignments or appointments after their retirement.
- **Article 128** grants authority to the Chief Justice of India, with the President's approval, to invite a retired Judge of the Supreme Court, Federal Court, or High Court, who is qualified for Supreme Court appointment, to serve and function as a Supreme Court Judge.
- **Article 220** prohibits High Court judges from pleading before any authority in India except



the Supreme Court and other High Courts.

### Cases and Recommendations Regarding Judges Joining Politics

- In the case of **Bombay Lawyers Association v. Union of India**, the **Supreme Court rejected a public interest litigation (PIL) petition that sought to enforce a mandatory cooling-off period of two years for retired judges** before they could accept post-retirement appointments. The highest court emphasised that it did not have the authority to impose such a cooling-off period, indicating that this matter falls outside its jurisdiction.
- **The 14th Law Commission**, chaired by MC Setalvad, suggested that judges should refrain from taking up post-retirement positions offered by the government and **proposed the implementation of a cooling-off period after retirement**. However, there exists no explicit rule that prohibits judges from accepting such positions.

### Concerns Arising From Judges Entering Politics

- **Contradiction with Constitutional Value:** The Indian Constitution's third Schedule, which pertains to oath-taking, mandates judges to pledge to execute their duties without partiality. However, their involvement in politics raises concerns regarding their impartiality and propriety.
- **Erosion of Public Trust:** Judges' participation in politics can undermine public trust in the judiciary as a whole. In the case of *C. Ravichandran Iyer vs Justice A.M. Bhattacharjee* (1995), the Supreme Court emphasised the necessity of judges possessing impeccable integrity and unwavering character to maintain the purity of justice.
- **Breach of Judicial Impartiality:** The entry of judges into the political arena raises doubts about the neutrality of the decisions made during their tenure. Judicial officers are expected to remain impartial and base their judgments solely on factual evidence and legal principles.
- **Contravention of Checks & Balances Principle:** The Indian Constitution operates on the principle of checks and balances among different

branches of government. An independent judiciary acts as a check on both the executive and legislative branches. However, judges' involvement in politics could upset this balance.

- **Undermining Judicial Independence:** Judges' foray into politics undermines judicial independence and introduces the risk of political influence affecting the judiciary's functioning. Judicial independence is crucial for upholding the rule of law.
- **Conflict of Interest Concerns:** Judges' entry into politics, especially following controversial statements or rulings during their tenure, raises concerns about potential conflicts of interest. Judges are expected to avoid such conflicts and uphold their integrity.
- **Ethical Conduct of Judges:** Judges' involvement in politics goes against the ethical conduct expected of them. Judges are expected to uphold the dignity, independence, impartiality, integrity, decency, and diligence both inside and outside the courtroom to enhance public confidence in the judiciary.



### Arguments in Support

- **Utilisation of Expertise:** Advocates posit that

judges possess invaluable expertise and experience that could significantly benefit the government and public service sectors. By accepting official roles post-retirement, judges can contribute to policymaking and governance based on their profound understanding of legal principles and judicial procedures.

- **Upholding Integrity in Official Positions:** Supporters of post-retirement appointments contend that judges are held to elevated standards of integrity throughout their careers, which are likely to persist in their roles in official positions. Appointing retired judges to key positions ensures the maintenance of ethical standards and impartiality in decision-making processes.
- **Addressing Vacancies Requiring Specialised Knowledge:** Certain official positions demand specific expertise or comprehension of legal intricacies, areas in which retired judges are well-versed. By appointing retired judges to such roles, there's a guarantee that critical positions are occupied by individuals with profound insights into legal matters, thereby contributing to effective governance and administration.
- **Preservation of Talent Pool:** Offering post-retirement appointments ensures the retention of the knowledge and skills of seasoned jurists within the country. It facilitates the continued contribution of judicial veterans to public service endeavours beyond their active tenure on the bench.

### Way Forward

- **Enactment of Legislation Establishing a 'Cooling-off Period':** In accordance with the Supreme Court's recommendation, the Parliament should enact legislation mandating a cooling-off period of at least two years before judges can join political parties or be appointed to political positions by the government.
- **Extension of Judges' Retirement Age:** Consideration should be given to increasing the retirement age of judges from 60 to 70 years. This extension would help mitigate the risk of conflicts of interest arising from post-retirement employment opportunities for judges.

- **Implementation of Conditions for Tribunal Appointments:** Clear conditions should be prescribed for the appointment of judges to tribunals. Factors such as expertise in constitutional matters or Public Interest Litigations (PILs), years of legal practice, research proficiency, and previous experience on benches handling similar cases need to be considered before making post-retirement appointments.
- **Promotion of Self-regulation among Constitutional Office Holders:** Individuals occupying constitutional positions should adopt self-regulation as a guiding principle. For instance, retired justices like Chelameswar and Kurian Joseph, along with former Chief Justices of India Kapadia, Lodha, and Thakur, have set an example by refraining from pursuing post-retirement involvement in politics or accepting nominations to political positions.

## VVPAT VS RE – COUNTING AND VERIFICATION OF VOTES

### Why in the News?

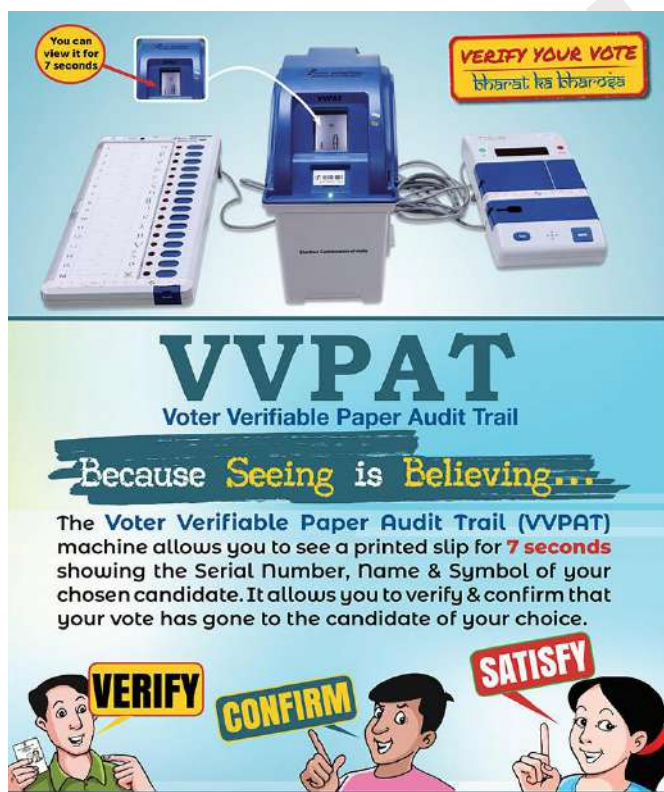


- Recently the various phases and dates of the Lok Sabha Elections 2024 of India have been announced by the Election Commission of India.
- With the announcement of various phases of the Lok Sabha General Elections 2024 to be held in India, a petition has been filed by various political parties in the Supreme Court of India regarding matching of VVPAT slips with the votes cast in EVMs.
- The bench of Justice BR Gavai and Justice Sandeep Mehta of the Supreme Court of India has

issued a notice to the Election Commission and the Central Government and sought their response on this petition filed regarding election reforms in India.

- Congress General Secretary Jairam Ramesh has supported this decision of the Supreme Court of India and said that –**“100 percent VVPATs should be used to increase public confidence in EVMs and ensure integrity of the electoral process in general elections in India.”**
- At present, in the general elections held in India, VVPAT paper slips of 5 random polling stations are matched with EVMs to verify the vote count.
- The Lok Sabha elections 2024 to be held in India is the world’s largest democratic electoral process, in which the voters of India will cast their votes using more than 900 million Electronic Voting Machines (EVMs) and ensure their participation in this electoral process.

#### Introduction of VVPAT:



- **Full name of VVPAT** – Voter verifiable paper is the audit trail that is attached to the electronic

voting machines (EVMs) in the election process. When a voter casts a vote using an EVM, the VVPAT prints a paper slip displaying the voter’s choice. This slip is visible behind glass for a few seconds, allowing the voter to verify his choice before depositing it in the box.


- Voter Verifiable Paper Audit Trail (VVPAT) is a method of providing feedback to voters using a ballotless voting system.
- VVPAT is intended to be an independent verification system for voting machines, designed to allow voters to verify that they are voting and to detect potential election fraud or malfunction, and to provide a means to audit stored electronic results. It has been confirmed that their vote has been cast correctly.
- It contains the name of the candidate (for whom the vote has been cast) and the election symbol of the party/individual candidate.

#### Background of Using VVPAT in General Elections in India :

- Use of VVPAT in general elections in India The idea of EVMs was first proposed by the Election Commission of India (ECI) in 2010, when several political parties raised concerns about the reliability and security of electronic voting machines (EVMs). ECI conducted several field trials and demonstrations of VVPAT machines in various states and had also sought feedback in this regard from various stakeholders.
- In the year 2013, the Supreme Court of India had directed the ECI to implement VVPAT in a phased manner.
- The Supreme Court of India in the year 2017 had ordered the ECI to use VVPAT along with EVMs in all future elections held in India.

#### Importance of VVPAT in General Elections of India :





**VVPAT**  
Voter Verifiable Paper Audit Trail

VVPAT will be used in all the polling stations in the forthcoming General Elections

VVPAT will be kept in voting compartment along with Ballot Unit

VVPAT has a transparent window which shows the printed paper slip when the vote is cast

The printed paper slip will display the Name, Serial Number and Election Symbol of the candidate for seven (7) seconds to the voter

After seven (7) seconds the printed paper slip will automatically get cut and drop in the sealed box below

VVPAT further enhances transparency and reliability in poll process

**VERIFY YOUR VOTE**  
Bharat ka Bharosa

Labels in image: NAME, SERIAL NUMBER, SYMBOL


- This allows voters to verify that their votes have been cast as per their preferences.
- This prevents any discrepancy or manipulation in the recording of votes by the EVMs.
- It provides a means of auditing the stored electronic results and enables cross-checking of votes in case of any dispute or doubt.
- This serves as an additional barrier to votes being altered or destroyed by corrupt or malfunctioning voting machines or personnel.
- This enhances the confidence of voters in the electoral system conducted in India and reduces the scope for any allegations or complaints made against EVMs.

#### Features of VVPAT:

- VVPAT The machine is a printer-like device attached to the EVM. When a voter presses the button on the EVM against the selected candidate, the VVPAT machine prints a paper slip with the candidate's serial number, name and his election symbol.
- The slip is visible to the voter for seven seconds

through a transparent window in the VVPAT machine, after which it is automatically cut and falls into a sealed drop box.

- VVPAT does not require batteries as it runs on a power pack battery.
- Normally a VVPAT takes one hour to count votes.
- VVPAT was first conducted in September 2013 in the by-election to the Noksen assembly seat in the Tuensang district of Nagaland.
- The VVPAT consists of a printer and a VVPAT Status Display Unit (VSDU).
- In case of recount or audit this slip can be obtained only by the polling officials.



**HOW TO CAST YOUR VOTE USING EVM & VVPAT**

- 1 ENTER THE BOOTH**  
The Presiding Officer will enable the Ballot Unit while you enter the Polling Compartment.
- 2 CAST YOUR VOTE**  
Press the blue button on the Ballot Unit against the name/symbol of candidate of your choice.
- 3 SEE THE LIGHT**  
The red light against the name/symbol of candidate chosen will glow.
- 4 SEE THE PRINT**  
A Ballot slip having Serial no., Name & Symbol of the chosen candidate will be visible for 7 seconds & will drop in the VVPAT box.

#### Corrective Steps Taken by the Election Commission of India Related to VVPAT:

- ECI has procured over 16 lakh VVPAT machines from two public sector undertakings, Bharat Electronics Limited (BEL) and Electronics Corporation of India Limited (ECIL), at a cost of about Rs 3,000 crore.
- ECI has conducted extensive training and awareness programs for polling officials, security personnel, political parties, candidates and voters



on the use and operation of VVPAT machines.

- ECI has introduced a randomisation process for allocation and distribution of EVMs and VVPATs to ensure fairness and confidentiality.
- The ECI has ordered that as per the Supreme Court direction, at least one polling station in each assembly constituency will be randomly selected for counting the VVPAT slips along with the EVM votes.
- ECI has also developed a technical protocol for counting of VVPAT slips in case of any mismatch or discrepancy between EVM and VVPAT results.

### **Challenges Related to VVPAT Before the Election Commission of India :**

- VVPAT machines are prone to technical faults, malfunctions, jamming or printing errors due to various factors such as faulty hardware, software bugs, power fluctuations, environmental conditions, human errors or sabotage.
- VVPAT machines require more maintenance, storage space, security arrangements and transportation costs compared to stand-alone EVMs.
- VVPAT machines increase the time and complexity of the voting process, as voters have to wait for the paper slip to appear and verify it before leaving the polling station.
- VVPAT machines may not be completely effective in ensuring voter verification, as some voters may not check or understand the paper slips properly, or may not report any discrepancies or complaints to polling officials.
- VVPAT machines may not be sufficient to resolve all disputes or doubts about election results, as counting paper slips is limited to a few polling stations and is subject to human errors or manipulation.

### **Solution / Way Forward :**

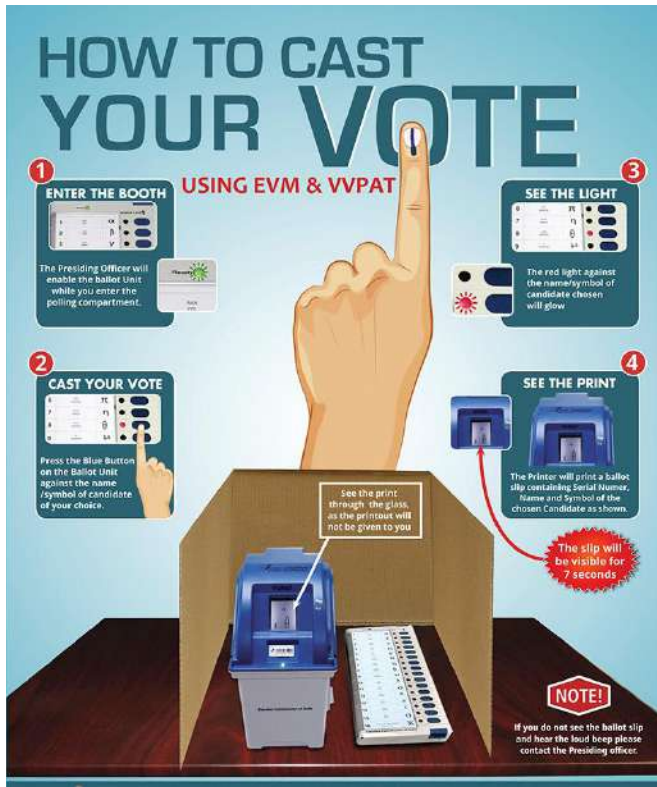
- VVPAT is widely considered a best practice for ensuring the integrity and reliability of electronic voting systems. However, it also presents some technical and operational challenges that

need to be addressed carefully. It is important to thoroughly test and evaluate VVPAT systems on a large scale before implementing them in elections in India.

- It is also extremely important to ensure adequate legal and regulatory framework for its use and validation in general elections in India.
- In India, the Election Commission is required to increase the recount sample by selecting certain assemblies of each State/Union Territory to make it more statistically significant or only on those seats where the margin of victory is very small (e.g., total votes This problem can be solved by increasing the recalculation sample. But insisting on a complete recount shows exaggeration and a clear lack of trust in EVMs.
- Verification of a statistically significant sample of VVPAT slips should suffice for elections in India.
- The VVPAT system plays an important role in the electoral system of India, as it enhances fairness, accuracy, transparency and public trust of the voting process.
- India's electoral process also requires continuous improvement and innovation to address its challenges and limitations.
- ECI should ensure adequate testing, quality control, calibration and certification of VVPAT machines before and after each election and promptly replace or repair any defective or defective machines.
- The ECI should conduct regular training and refresher courses for polling officials, security personnel, political parties, candidates and voters on the use and operation of VVPAT machines and resolve any queries or complaints effectively.
- The ECI should increase random sampling and counting of EVM votes as well as VVPAT slips and adopt a scientific and transparent method for selection of polling stations for this purpose.
- ECI should develop a robust and secure protocol for counting of VVPAT slips and ensure

proper documentation and verification of the process in case of any mismatch or discrepancy between EVM and VVPAT results.

- To conduct elections in India in a fair manner, the ECI should also explore other technological solutions or alternatives such as end-to-end verifiable voting systems, blockchain-based voting systems or paper-based voting with optical scanners that would be possible in India. Can replace the VVPAT system in general elections.



## PRELIMS QUESTIONS

**Q1. Consider the following statements:**

- India's shutdowns are localised rather than nationwide, which differs from the global trend.
- Unlawful Activities (Prevention) Act allows the government to block URLs associated with banned organisations.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only

- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Q2. What rights do internet shutdowns in India violate according to court rulings?**

- (a) Right to privacy only
- (b) Right to freedom of speech only
- (c) Right to freedom of speech and right to information
- (d) Right to freedom of speech and right to practise religion online

**Q3. With reference to the Indian judiciary, consider the following statements:**

- The Chief Justice of India, with the President of India's prior consent, has the authority to invite any retired Supreme Court judge to serve and function as a judge of the Supreme Court of India.
- A High Court in India possesses the authority to review its own judgment, similar to the Supreme Court.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Q4. Consider the following statements regarding the demand for vote verification through recounting of VVPAT slips in the direction of electoral reforms in India.**

- The use of VVPAT in general elections in India was first proposed by the Election Commission of India (ECI) in 2010.
- This prevents any type of malpractice from taking place in elections.
- VVPAT machines in India are manufactured by Bharat Electronics Limited (BEL) and Electronics Corporation of India Limited (ECIL).

4. This allows cross-checking of votes in case of any dispute or doubt related to the votes in the election.

**Which of the above statement / statements is/are correct?**

- (a) Only 2, 3 and 4.
- (b) Only 1, 2 and 3.
- (c) Only 1, 3 and 4.
- (d) All of these.

### ANSWERS

| S. No. | Answers |
|--------|---------|
| 1.     | C       |
| 2.     | C       |
| 3.     | C       |
| 4.     | D       |

### MAINS QUESTION

**Q1.** How do internet shutdowns impact the economy of a country? Explore the economic consequences for businesses, particularly startups, during periods of internet blackout. Discuss potential long-term effects on investment and technological innovation.

**Q2.** How does the unregulated dissemination of information on the internet potentially exacerbate social tensions in diverse countries like India, where different cultural, religious, and ethnic groups coexist?



# ECONOMY

## T+0 BETA VERSION OF THE SETTLEMENT CYCLE RELEASED

### Why in the News?

The Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) have recently implemented an optional trading feature in the equity segment, known as the T+0 beta version of the settlement cycle. This development follows the issuance of operational guidelines by the Securities and Exchange Board of India (SEBI) for the introduction of this shorter tenure settlement cycle.

### About the T+0 Settlement Cycle

- The Securities and Exchange Board of India (SEBI) took a bold step towards faster trade settlements in December 2023. They proposed a new, **optional T+0 (same-day) settlement system alongside the existing T+1 cycle**.
- This revolutionary system aims to **complete trade settlements on the same day the market closes**. Conversely, **buyers would acquire their purchased shares within the same day**. This would make India's stock market the leader in settlement speed globally.
- Currently, the **T+1 cycle poses a one-day wait between trade execution and settlement**. This means sellers only receive **80% of their proceeds on the day of sale**, with the **remaining 20% arriving the next day**. **T+0 eliminates this delay**, granting sellers full access to their funds instantly.
- While still in the proposal stage, the potential benefits of T+0 are significant. **It could enhance market efficiency, boost liquidity, and give investors greater control over their finances**. As India paves the way for faster settlements, the future of its stock market looks increasingly dynamic.

### Features of the T+0 Settlement Cycle

- **Faster Transactions:** Unlike the current T+1 cy-

cle that involves a one-day wait, T+0 allows for the immediate transfer of securities and funds. Buyers would receive their purchased shares within the same day. **This eliminates delays and empowers investors with greater control over their finances.**

- **Early Pay:** Interestingly, a significant portion of retail investors already make "early pay-ins" of funds and securities, demonstrating their comfort with a faster settlement system. T+0 capitalises on this existing trend, streamlining the process for a large investor segment.
- **Reduced Risk:** T+0 settlement **minimises the risk of settlement failures often caused by delays or insufficient funds**. With same-day completion, both buyers and sellers fulfil their obligations promptly, fostering greater confidence in the market.
- **Instant Receipt:** Beyond speed, T+0 offers the advantage of instant receipt of funds and securities. This **eliminates settlement shortages, where discrepancies occur between the expected and received amount**. This translates to a more transparent and reliable system for investors.
- **Investor Protection:** The proposed T+0 system prioritises investor protection. Funds and securities would be directly credited to investors' accounts, particularly for those using UPI (Unified Payments Interface). This reduces the risk of intermediary mishandling and strengthens investor confidence.

### Potential Benefits of the T+0 Settlement Cycle

- **Enhanced Liquidity:** Under the current T+1 system, funds from selling shares become available the next day. T+0 unlocks this liquidity instantly. Investors can then use these funds to reinvest in new opportunities or withdraw them quickly, making their portfolios more agile and responsive to market fluctuations.

- **Faster Decision-Making:** The ability to access funds and securities immediately empowers investors to react swiftly to market movements. They can capitalise on short-term trading opportunities that might disappear overnight under the T+1 system. This fosters a more dynamic and action-oriented investment environment.
- **Reduced Settlement Risk:** Settlement risk arises when a buyer or seller fails to fulfil their trade obligation due to delays or insufficient funds. T+0 minimises this risk by ensuring same-day completion of trades. Both parties fulfil their obligations promptly, leading to a more secure and stable trading environment.
- **Cost Savings:** Faster settlements could potentially lead to lower operational costs for brokers and exchanges. With less need to manage funds and securities overnight, streamlining the process could result in cost savings that could benefit investors in the long run.
- **Increased Market Efficiency:** T+0 settlement has the potential to streamline the overall trade execution process. Faster settlements could lead to increased trading volumes and a more efficient allocation of capital within the market. This could benefit the entire financial ecosystem in India.

### Need of T+0 Settlement Cycle

The introduction of T+0 settlement is a strategic response to this changing landscape. Here's how it aligns with current trends:

- **Following the "Digital" Economy:** Indian consumers have readily adopted UPI and other instant payment platforms, demonstrating a strong preference for speed and convenience. T+0 settlement extends this concept to the stock market, allowing for the immediate transfer of funds and securities.
- **Serving Modern Investor Needs:** Today's investors prioritise reliability, cost-effectiveness, and lightning-fast transactions. T+0 addresses these needs by streamlining the settlement process, potentially lowering operational costs, and providing faster access to funds and securities. This

could make equities a more attractive asset class for a wider pool of investors.

- **More Market Efficiency:** A shorter settlement cycle, like T+0, has the potential to optimise the entire trade execution process. Faster settlements could lead to increased trading volumes and a more efficient allocation of capital within the market. This efficiency could benefit all stakeholders in the Indian financial system.

### A Phased Approach towards T+0 Settlement

India's rollout of the T+0 settlement will be a cautious two-stage process designed to ensure a smooth transition for the market.

- **Dual Phases for Settlement:** The system will operate in **two phases**. **Trades executed up to 1:30 pm will be settled by 4:30 pm on the same day (Phase 1)**. **After 1:30 pm, trading will continue until 3:30 pm (Phase 2)**, but settlement for these trades will likely occur later. This phased approach allows for proper management of the initial trading rush and ensures timely settlement for early trades.
- **Gradual Expansion:** SEBI plans to introduce T+0 settlement initially for the top 500 listed equities, **divided into three tranches based on market capitalisation (200, 200, 100)**. This phased rollout allows regulators to monitor the system's impact and make adjustments if necessary before expanding it to encompass the entire market.

## EMPLOYMENT CRISIS IN SOUTH ASIA AS PER WB REPORT

### Why in the News?

A new World Bank report, "Jobs for Resilience," warns that South Asia, including India, is failing to create enough jobs for its young population. This could jeopardise the region's demographic dividend, even though it's expected to have the world's fastest economic growth (6.0-6.1%) in 2024-25.

### Significant Findings of the Report

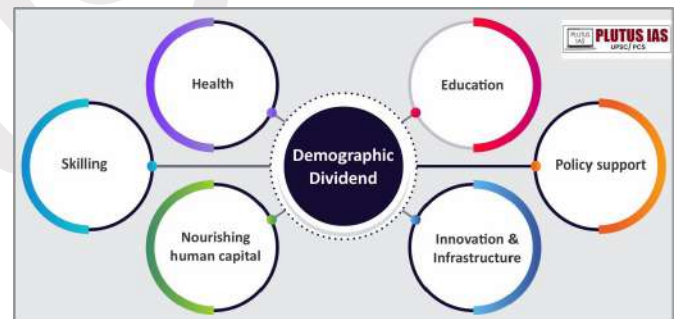
- **Decline in Employment in South Asia:** South

Asia's employment ratio dropped by 2% from 2000 to 2023, while most emerging markets held steady. This weakness persists even after a post-pandemic surge.

- **Low Participation:** Compared to other developing economies, South Asia has significantly lower employment ratios across the board. In 2023, only 59% of the working-age population was employed, far below the 70% average in other regions.
- **Climate Vulnerability of the region:** South Asia is caught between a rock and a hard place. The region is particularly **susceptible to the impacts of climate change, but its limited government resources make it difficult to implement large-scale adaptation policies.** This leaves the burden of coping with climate shocks on businesses, farmers, and especially poor households, who are often hit the hardest.
- **Jobless Growth:** Unlike other emerging economies, South Asia's labour markets have been plagued by declining employment ratios for decades. This means a shrinking share of the working-age population is actually employed. The root of the problem lies in the slow job creation within the non-agricultural sector. While agriculture has seen a decline in its workforce, other sectors haven't been able to absorb these displaced workers efficiently. This sluggishness is partly attributed to complex regulations and economic conditions that hinder business growth, further limiting job opportunities.
- **Employment trend in Men and Women:** Men's employment rates in South Asia have declined over the past two decades, while women's rates remain persistently low – contributing significantly to the overall weakness.
- **Impact on overall growth:** While South Asia saw strong labour productivity growth in the 2010s, it faltered after 2020 and now falls below the average for developing economies. Unlike other regions, South Asia's economic growth relied heavily on both productivity gains and population growth. However, declining employment ratios are now hindering further output growth.

### What Does the Report Talk About India's Scenario?

- **Migration Patterns:** The pandemic led to a return of migrant workers to rural areas in India, with emigration from rural areas also slowing down. India also has the second-highest percentage of workers in agriculture (44%) after Nepal.
- **Market trend:** India's employment growth was sluggish in the 2010s but showed signs of improvement after the pandemic. The employment ratio, however, remains a concern, declining significantly until 2022, with a partial recovery in 2023.
- **Uneven Composition:** India's industrial sector is seeing some growth due to government investments, relaxed regulations, and an increase in contract labour. The services sector, particularly IT, BPO, and healthcare, thrives due to a skilled workforce and digital infrastructure, but this limits opportunities for unskilled workers.



### Strategies for Maximising the Output From the Demographic Dividend

- **Investing in Human Capital:** Prioritise quality education for all, with a focus on STEM fields (Science, Technology, Engineering, and Math) to equip the workforce with in-demand skills.
- **Bridging the Gender Gap:** Address gender disparities in education and training to unlock the full potential of the female workforce.
- **Invest in Infrastructure:** Upgrade infrastructure like transportation and communication networks to improve connectivity and facilitate business growth.
- **Vocational Training:** Expand vocational train-



ing programs to equip individuals with practical skills relevant to the needs of the labour market.

- **Modernisation of Labour Laws:** Review and update labour laws to create a more flexible and responsive labour market.
- **Embracing Technology of the digital era:** Invest in digital skills training and promote digital literacy to prepare the workforce for the increasing role of technology in the workplace.
- **Healthcare Investments:** Invest in healthcare systems to ensure a healthy and productive workforce.
- **Social Safety Nets:** Strengthen social safety nets to provide support for vulnerable populations, particularly the elderly and those transitioning out of the workforce.

## FISCAL FEDERALISM VS CENTRE – STATE RELATIONS IN INDIA

### Why in the News?



- Recently, the Supreme Court of India has ordered to refer to the Constitution Bench a case filed by the State Government of Kerala, in which the decision of the Central Government in India to cut the borrowing given to the State of Kerala was challenged.
- The Supreme Court of India has refused to pass any order on the interim order restoring the situation before the imposition of the borrowing limit by the Central Government but has referred it to a larger bench which will provide an

opportunity to examine whether the Central To what extent can the government regulate state borrowing? This step taken by the Supreme Court of India in this matter is a welcome development.

- The Kerala government has claimed in this case that the central government’s borrowing limit restriction violates the fundamental nature and provisions of India’s fiscal federalism.

### The Root Cause of the Dispute Between Fiscal Federalism in India Versus the State Of Kerala :

1. The issue has been filed by Kerala in the Supreme Court of India and the Center has net borrowing limit(NBC) refers to the imposition of restrictions, thereby limiting the borrowing capacity of any state in India.
2. Kerala challenged the legality of the NBC in the Supreme Court, arguing that it hampers the state’s ability to finance essential services and welfare schemes.

### Meaning of Fiscal Federalism in India :



- Origin of the word fiscal ‘Fisk’ It is derived from the word which means public treasury or government money.
- Therefore, fiscal policy is related to the revenue and expenditure policy of the government.
- Fiscal federalism in India refers to the distribution of resources between the Center and the states.
- The distribution of taxes between the Center and the States is clearly mentioned in.the Indian Constitution **7th schedule** in India.

- There are 3 lists in the Constitution of India where taxes are distributed between the Center and the States.

**They are as follows –**

- Union list
- State list
- Concurrent list

### Main Objectives of Fiscal Policy in India

**The following are the objectives of fiscal policy in India-**

1. High economic growth
2. Price stability
3. Reduction in inequality

**The above objectives are accomplished in the following ways –**

1. Consumption control – In this way, the ratio of savings to income is increased.
2. Increasing the rate of investment.
3. Taxation, infrastructure development.
4. Imposition of progressive taxes.
5. Weaker sections were exempted from taxes.
6. Imposing heavy taxes on luxury items.
7. Discouraging unearned income.

**Main Components of Fiscal Policy in India :**



**India's fiscal policy mainly has three components. Which are as follows –**

1. Government receipts
2. Government spending
3. Public debt

**All receipts and all types of expenditure of the Government in India are deposited and issued or spent from the following funds.**

1. Consolidated Fund of India
2. Contingency fund of India
3. Public account of India

**Net Borrowing Limit (NBC) :**

- Net borrowing limit (NBC) is a restriction imposed by the central government on the borrowing capacity of states in India. In which it limits the amount of money under which any state in India can borrow either from the open market or from various sources.
- As of December 2023, the general net borrowing limit for states in India is ₹8,59,988 crore or 3% of state gross domestic product (GDP).
- However, the central government national pension scheme additional borrowing limit of ₹60,880 crore has been approved by 22 states of India to participate in NPS.
- The main objective of NBC is to regulate state finances, prevent excessive borrowing and ensure fiscal discipline in India.

**Extra-Budgetary Borrowings Covered under NBC :**

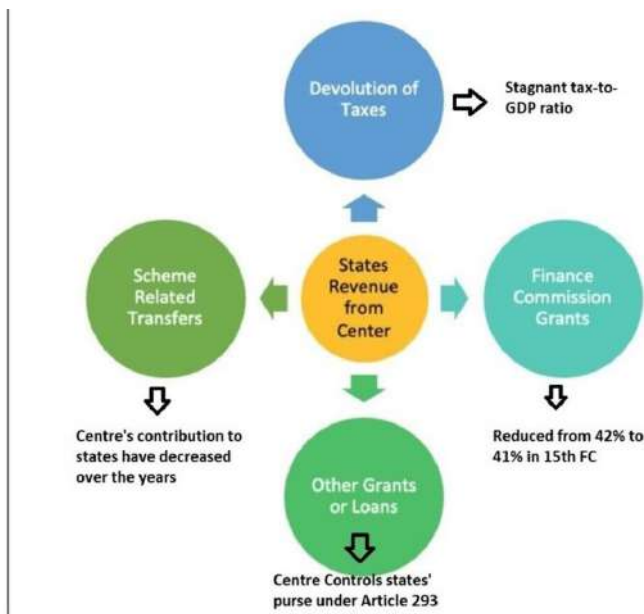
- The Center has included loans taken by state-owned enterprises in the NBC. As such, statutory bodies in many states (such as the Kerala Infrastructure Investment Fund Board) cannot raise additional debt beyond the NBC's 3% limit. The move has raised constitutional concerns regarding the right of the central government to regulate state finances.

**Kerala's Argument in NBC's Case :**

- **Fiscal autonomy of states :** The amendment made to the FRBM Act, 2003 violates the fiscal autonomy of the state by center.

- **Borrowing limit** : The Centre’s amendments have significantly reduced Kerala’s borrowing limit, impacting the state’s financial crisis management.
- **Constitutional violation** : Kerala argues that the Centre’s action is an encroachment on the state’s legislative domain, in violation of the provisions of the 7th Schedule of the Constitution.
- **Financial Crisis** : The state fears that without intervention, the financial constraints imposed could have long-term detrimental effects.
- **Lump sum package** : The move was suggested by the Supreme Court to help Kerala deal with the funding shortfall by imposing stringent conditions for the next financial year. The state rejected the loan of Rs 5000 crore because it would need about Rs 10,000 crore as loan.

**Central Government’s Argument :**



- **Financial crisis of the state** : The Centre’s argument in this case is that Kerala’s financial crisis is due to the state’s mismanagement and wastage, and not due to borrowing limits.
- **FRBM Act 2003** : Fiscal transactions between Center and n States are governed by the FRBM Act, 2003, in which the borrowing limit is set at 3% of Gross State Domestic Product (GSDP).

- **Recommendations of the 15th Finance Commission** : The Center has refused to relax the borrowing limit citing the recommendations of the 15th Finance Commission. This led to Kerala exceeding the fiscal deficit target and high expenditure on salaries. **“Highly indebted state”** Is shown as. The Center said its one-time package offer (Rs 5,000 crore) comes with strict conditions to prevent other states from approaching courts for similar packages.

**Fiscal Responsibility and Budget Management Act (Frbma), 2003 :**

- The main objective of the FRBM Act in India is to impose fiscal discipline on the government. Therefore, under this Act the government should conduct its fiscal policy in a disciplined manner or in a responsible manner i.e. the government deficit or borrowing should be kept within reasonable limits and the government should plan its expenditure according to its revenue so that the borrowing stays within limits.

**How is State Borrowing Regulated in India?**



**Fiscal Federalism:**  
Financial decisions pertaining to an economy are taken by the government.

- **Article 293** : It provides financial autonomy to the states, allowing them to borrow only from within the territory of India on guarantee from the Consolidated Fund of the State.
- **FRBM Act 2003** : The Fiscal Responsibility and Budget Management Act 2003 was enacted to ensure intergenerational equity in fiscal management. It states fiscal deficit and borrowing limits for both the central and state governments.
- **Finance Commission** : Finance Commission in India makes recommendations from time to



time with respect to fiscal matters, including borrowing limits for the States, it is important to determine the borrowing limits for the States taking into account factors such as economic conditions, fiscal health and developmental needs .

- **State Fiscal Responsibility Act** : Each state may have its own fiscal responsibility act, which defines limits and guidelines for borrowing and fiscal management within the state.
- **Role of the Centre** : It plays an important role in overseeing financial matters, including approving borrowing limits for states based on the recommendations of bodies such as the Finance Commission. It can influence the state's borrowing limits through legislative changes, amendments to existing laws such as the FRBM Act, or by exercising discretion in granting additional funds or by relaxing borrowing constraints in exceptional circumstances.
- **Pay off debts** : The state's borrowings are used to finance ongoing expenses rather than profitable investments, affecting its credit rating.
- **Revenue Generation** : The state's revenue generation may not be sufficient to meet its expenditure requirements, the state depends heavily on revenues from taxes including GST but fluctuations in economic activity and external factors affect tax collections.
- **Expenditure System** : There is a high level of recurrent expenditure on items like salaries, pensions and subsidies which creates financial imbalance in the state.
- **Natural Disasters** : Kerala is prone to natural disasters such as floods, landslides, etc., which can cause extensive damage to infrastructure and disrupt economic activities.

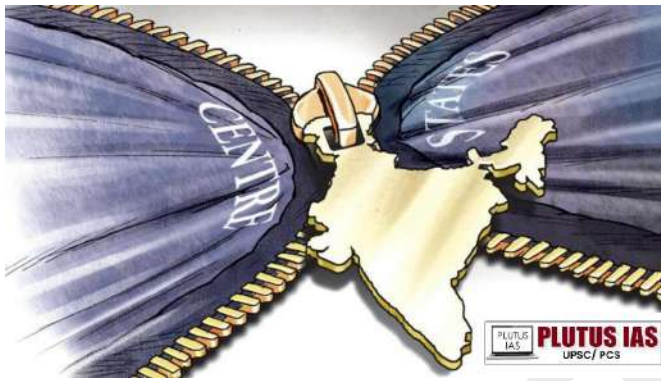
#### Solution / Way Forward :

- Kerala's challenge highlights an important constitutional dispute over fiscal federalism and state autonomy in financial management. The state argues that the Centre's restrictions on borrowing, including loans of state-owned enterprises and public account balances, violate

its constitutional rights. This legal battle highlights the tension between central oversight and state financial independence, potentially reshaping the dynamics of federal-state financial relations in India.

- **Recommendations of the 15th Finance Commission To review again** : Issues arising from the recommendations of the 15th Finance Commission may be re-examined. States can share their concerns with the Finance Commission or the Union Finance Ministry, so that states do not have to violate their fiscal autonomy while maintaining their fiscal stability.
- **Need for judicial review and judicial clarification** : Kerala has taken refuge in the Supreme Court of India in the NBC case. Hence, one solution is judicial review of the constitutional validity of NBC in relation to Article 293(3) and Article 266(2). The Court's interpretation may resolve disputes related to the constitutional limits of the Centre's authority over state borrowing.
- **To cooperative federalism Need to strengthen** : Regular high-level meetings between the Center and states through forums such as the GST Council or a specially convened Fiscal Policy Council can help facilitate interactions. The objective of these meetings will be to negotiate borrowing limits and ensure that states have sufficient financial leeway to meet their obligations.
- **Legislative action** : Parliament may consider making laws or amending existing laws (subject to constitutional limits) to clarify the scope of central monitoring over state borrowings. It should respect the balance of fiscal federalism and be prepared after extensive consultation with the states.
- **Promoting fiscal responsibility at the state level** : State fiscal management Can take proactive steps to strengthen, as Kerala has done through the Kerala Fiscal Responsibility Act. By setting clear deficit targets and budget management practices, states can demonstrate their commitment to fiscal prudence, potentially increasing their negotiating power with the Centre.

- **Public account management Building consensus** : The issue of inclusion of public account withdrawals within the NBC can be addressed by creating a broad consensus among all the states, which can then be presented to the Center on a united front to exclude such transactions from the borrowing limit. ,
- **By promoting economic reform and development** : Economic reforms Expanding the tax base through taxation, promoting investment climate and promoting growth in the state's own source revenue can be sustainable ways of ensuring adequate funding for state expenditure without dependence on borrowing.



## THE DEMOGRAPHIC TRANSITION- OPPORTUNITIES AND CHALLENGES



### Why in the News?

The UN population division estimates the population close to 1.7 billion by 2065 before it starts declining. It will also accompany a demographic transition which is going to provide various opportunities and challenges for the country which we must prepare for.

Recently, the LANCET report has highlighted India's total fertility rate to decline to 1.29 by 2051. Though it is much higher than estimated by UN or NFHS surveys, but, it highlights interesting pictures about the population dynamics. This highlights our population will stabilize at the 1.7 billion mark much before 2065.

### Factors Responsible for Demographic Transition (DT)

Several factors have triggered DT in India:

**Rapid economic growth**– An important transition in the economic history of countries occurs when they move from a regime of low prosperity, high child mortality and high fertility to a state of high prosperity, low child mortality and low fertility. Same thing is happening in India.

**Low infant and child mortality rates**- reducing need for having a large family for old age support.

**Rise in levels of women's education and workforce participation**- various studies had suggested an inverse relation between women's education and fertility rates.

**Late marriages**- Combined with rising levels of education it leads to reduction in child bearing years and hence lower fertility rates.

**Increase mobility**- Increasing urbanization has led to higher numbers of people living in urban areas and hence change in patriarchal norms. Also, in urban areas couples prefer other aspects of life.

### Impact of Decline in Fertility Rate

The decline in TFR has manifold impact:

**Fall in Dependency ratio**- As new births have reduced so the number of dependent population also reduces. It also leads to a larger proportion of working adults in the economy **boosting economic growth** and surplus income, which can further invest in infrastructure, skill development and education.

### Increase in Labor productivity

– Decline in population growth leads to increase in resources and infrastructure available in per capita

terms.

-Reallocation of resources for skill development and education

-Increasing the proportion of the labor force in a population.

**Enhancing educational outcomes-** as the number of children enrollment in primary education reduces.

**Positive intergenerational transfers-** families allocating resources for children for better education and skill development.

**Women empowerment-** As women's educational years increase, it leads to higher levels of literacy and financial independence. It also helps tackle the problem of various patriarchal barriers.

### Challenges of Declining Fertility Rate

**Increase in dependency ratio in long term-** while fall in TFR leads to initial surplus income but higher number of elderly population in the long term.

**Labor force shortage-** a declining workforce due to low TFR can lead to lower economic production. Industries may face shortage of skilled workforce, or increase in labor cost, acting as a disincentive for foreign investors.

**Social support network-** smaller families means less people for mentoring and caregiving and emotional support.

**Better healthcare and social security network-** aging population requires better healthcare facilities and social security which is major concern in India.

**Economic Implications:** A shrinking workforce affects tax revenues, social security contributions, and economic stability.

In this regard, policymakers have to take appropriate actions to reap the demographic dividend by focusing on social expenditures and building capabilities. Also recognizing the challenges in the future related to aging population and building a holistic approach should be the way forward.

## PRELIMS QUESTIONS

**Q1. With reference to India, consider the following:**

1. Nationalisation of Banks
2. Formation of Regional Rural Banks
3. Adoption of Village by Bank Branches

**How many of the above can be considered as steps taken to achieve "financial inclusion" in India?**

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

**Q2. How does the T+0 settlement cycle differ from the existing T+1 cycle?**

- (a) T+0 involves a one-day wait for trade settlements.
- (b) T+0 allows for the immediate transfer of securities and funds.
- (c) T+0 increases delays in accessing funds and securities.
- (d) T+0 extends the settlement duration beyond the market closing time.

**Q3. Consider the following statements regarding the Periodic Labour Force Survey (PLFS) Annual Report 2022-2023:**

1. The Worker Population Ratio (WPR) in rural India has declined in the last 10 years
2. The agriculture sector has witnessed a growth in employment opportunities in the last few years

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2

(d) Neither 1 nor 2

**Q4. What does the term “demographic dividend” refer to?**

- (a) The decrease in birth rates within a population
- (b) The economic benefits derived from a youthful population
- (c) The increase in life expectancy in a society
- (d) The redistribution of wealth among different age groups

**Q5. Consider the following statements regarding fiscal federalism in India.**

1. The 7th Schedule of the Constitution deals with the distribution of taxes between the Center and the States.
2. The restriction imposed by the central government on the borrowing capacity of states is called net borrowing limit (NBC) In India.
3. Loans taken by state-owned enterprises are included in the NBC by the Centre.
4. Setting borrowing limit restrictions for the states by the Center violates the fundamental nature and provisions of India’s fiscal federalism.

**Which of the above statement / statements is/are correct?**

- (a) Only 1, 2 and 3.
- (b) Only 2, 3 and 4.
- (c) Only 1, 3 and 4.
- (d) All of these.

**Q6. Consider the following statements:**

1. India’s TFR has passed the replacement level.
2. The TFR in rural areas is lower than in urban areas.
3. There is a negative correlation between TFR and women’s level of education.

Which of these statements are correct?

- (a) Only 1
- (b) Only 2
- (c) Only 3
- (d) None

## ANSWER

| S. No. | Answers |
|--------|---------|
| 1.     | C       |
| 2.     | B       |
| 3.     | A       |
| 4.     | B       |
| 5.     | D       |
| 6.     | B       |

## MAINS QUESTIONS

**Q1. Assess the potential risks associated with the adoption of T+0 settlement in India, particularly in terms of market volatility, liquidity management, and investor protection.**

**Q2. Explore the long-term implications of T+0 settlement on the efficiency and resilience of the Indian financial ecosystem, considering factors such as market liquidity, operational costs, and capital allocation.**

**Q3. Evaluate the role of government policies and institutions in fostering the development of human capital, drawing from Robert Putnam’s research on social capital and community development. How can governments effectively promote human capital accumulation to enhance overall societal well-being?**



# SCIENCE AND TECHNOLOGY

## PM SOLAR ROOFTOP SCHEME

### Why in the News?



- Recently, the Finance Minister of India, while presenting the interim budget in the Parliament on 1 February 2024, has announced the PM Solar Rooftop Scheme to promote solar energy in India.
- Under this scheme, up to 300 units of free electricity will be given every month to one crore families in India.
- The primary goal of this scheme is to make India self-reliant in the energy sector and reduce the electricity bills for the poor and middle class people of India.
- The government aims to promote the use of renewable energy and encourage widespread adoption of solar energy at the household level by reducing dependence on traditional energy sources.

### Importance Of Solar Energy In The Energy Sector In India:

- According to the International Energy Agency (IEA), India is expected to experience the largest energy demand growth globally in the next 30 years.
- A reliable and sustainable source of energy is important to meet the growing demand in the

energy sector in India, which requires India to reduce its dependence on traditional sources of energy such as coal.

- Solar power has seen particularly significant growth in recent times, from 10 MW in 2010 to 70.10 GW in 2023.

### Current Solar Energy Capacity Of India:

- Currently, according to a report released by the Ministry of Renewable Energy, by December 2023, India's total solar capacity is about 73.31 gigawatt (GW), of which rooftop solar power contributes about 11.08 GW. ,
- In terms of solar power capacity in India, Rajasthan leads among all the states in India in terms of total rooftop solar power capacity (18.7 GW) while Gujarat tops in India in terms of total rooftop solar power capacity (2.8 GW). .
- Solar energy has an important place in India's total renewable energy capacity, which is about 180 GW.
- India has set a target of becoming completely self-reliant in the field of renewable energy by the year 2030, under which a target has been set to achieve 500 GW renewable energy capacity by 2030.

### What Is A Rooftop Solar Panel?

- Rooftop solar panels are installed on the roof of the house. Solar plates are installed in these panels. This is a technology that produces electricity by absorbing energy from the sun's rays.
- Photovoltaic batteries are installed in its panels which convert solar energy into electricity.
- The electricity produced under solar energy also works the same as the electricity coming from the power grid.

### PM Solar Rooftop Scheme:

- The PM Solar Rooftop Scheme was started in

the year 2014. The scheme focuses on expanding the capacity to install rooftop solar in the residential sector.

- The main objective of this scheme is to provide financial assistance and incentives to solar power distribution companies (DISCOMs) at the central level.
- Under this program, a target has been set to achieve 40 GW rooftop solar installed capacity by March 2026.
- There has been significant progress in the PM Solar Rooftop Scheme in recent days. Under its plan, it has increased from 1.8 GW in March 2019 to 10.4 GW in November 2023.
- Under this scheme, any consumer in India can avail the benefits of this scheme through tender projects or national portal ([www.solarrooftop.gov.in](http://www.solarrooftop.gov.in)). The scheme empowers consumers to choose the vendor and solar equipment based on their preferences.
- Under this scheme, after the installation and inspection of solar plants, the subsidy given by the government is directly transferred to the bank accounts of the consumers.
- Consumers have been provided the right to export surplus solar power to the grid, while receiving monetary benefits as per the prevailing rules laid down by the State Electricity Regulatory Commissions (SERCs) or Joint Electricity Regulatory Commissions (JERCs).

#### Why is this Scheme so Important?

- The scheme will help India meet its commitment under the Paris Agreement to reduce its carbon emission intensity by 33-35% by 2030.
- Under this scheme, India will be helped in reducing its energy dependence on fossil fuels and becoming self-reliant in the energy sector.
- With the aim of also accelerating the social and economic development of India, this scheme can provide clean and affordable electricity to millions of homes in India.
- Along with this, access to energy can be ensured

through renewable sources of energy, especially in rural and remote areas of India where access to the electricity grid is limited.

#### Important Features of PM Solar Rooftop Scheme:

- The main goal of this scheme is to target low and middle income households of India who can benefit through lower electricity bills and additional income from surplus power generation.
- Under this scheme, financial assistance will be provided in the form of subsidy, loan or incentive to those eligible families of India, depending on their category and location, whose homes have still not reached electricity or other sources of energy.
- Under this scheme, technical assistance will also be provided by the government in the installation, operation and maintenance of rooftop solar systems to people's homes in India.
- In India, the scheme will be implemented by the Ministry of New and Renewable Energy (MNRE) in collaboration with state governments, distribution companies, banks and other stakeholders.

#### Other Government Initiatives for Solar Energy :

1. Solar park scheme
2. Atal Jyoti Yojana (Ajay)
3. National Solar Mission
4. Srishti Yojana
5. International Solar Alliance (ISA)

#### Challenges Existing In PM Solar Rooftop Scheme in India :

- Even after so many years of independence in India, there is a lack of awareness and knowledge among consumers about the benefits and processes of rooftop solar installation.
- This is due to the high upfront costs incurred under the scheme and the lack of easy financing options for consumers to invest in rooftop solar systems.

- There are a number of regulatory constraints and policy uncertainties in India with respect to net metering, grid connectivity, tariff structure, etc., which vary across states and regions in India.
- Poor quality of solar energy related equipment, technical issues like grid integration and management in its installation and its maintenance services etc. affect the performance of rooftop solar systems and its reliability in India,

### Way Forward :



- Pradhan Mantri Suryodaya Yojana is a welcome initiative and a very important scheme of the government to promote rooftop solar in India.
  - The scheme can also help India achieve its renewable energy targets and climate goals as well as enhance its energy security and social and economic development.
  - At present many challenges exist in this scheme. Therefore, for successful implementation of this scheme, there is a need to find solutions to those challenges through effective implementation and coordination among various stakeholders.
  - For successful implementation of the scheme in India, there is a need to increase awareness and reach among consumers through large scale media campaigns, workshops, exhibitions etc.
  - It is extremely important to provide financial incentives and subsidies to consumers, especially low and middle income households, to reduce the upfront cost and payback period of rooftop solar systems.
- There is a need to streamline and harmonize the regulatory and policy framework across different states and regions of India to ensure uniformity, clarity and consistency for rooftop solar installation and operations.
  - In India, there is a need to improve the technical standards and quality of services related to installation and maintenance of rooftop solar equipment, grid integration and management etc. under this scheme.
  - There is also a need to ensure the safety, efficiency and sustainability of rooftop solar systems under the PM Solar Rooftop Scheme in India.
  - India's domestic manufacturers should also be brought under strict quality scrutiny and should not have to compromise on input costs and quality merely on the basis of being nationalistic or indigenous.
  - While the Indian solar industry should also become another high quality exporter, it should also not forget that the scheme in India is like a road with no easy destination and they have a long way to go, so that This scheme can be successfully implemented in India and every house in India can get freedom from darkness.

## PRELIMS QUESTIONS

### Q.1. Consider the following statements regarding the PM Solar Rooftop Scheme.

1. This scheme has a provision to provide up to 300 units of free electricity every month to one crore families in India.
2. This will help India become self-reliant in the energy sector by reducing its energy dependence on fossil fuels.
3. India has set a target of becoming completely self-reliant in the field of renewable energy by the year 2030.
4. This scheme is operated by the Ministry of Renewable Energy in India.

**Which of the above statement(s) is/are correct ?**

- (a) Only 1, 2 and 3
- (b) Only 2, 3 and 4
- (c) None of these.
- (d) All of the above .

### ANSWERS

| S. No. | Answers |
|--------|---------|
| 1.     | D       |

### MAINS QUESTIONS

**Q.1. What is the future of renewable energy in India? Discuss in detail the major challenges and their solutions for successful implementation of PM Solar Rooftop Scheme in India.**



# ECOLOGY AND ENVIRONMENT

## CLIMATE CHANGE AND THE NEED FOR WATER CONSERVATION AND PROMOTION

### Why in the News?



- According to the latest report released recently by the Central Water Commission, only 23 percent of the total water holding capacity is available in all the reservoirs of South India. This is nine percentage points less than the recurring decadal average, indicating the magnitude of the water crisis in India.
- Even before the latest report released by the Central Water Commission, South India had to face a water crisis in summer 2017. This year the water crisis is set to be different and worse due to some other reasons.
- 223 of Karnataka's 236 taluks are affected by drought, including Mandya and Mysore districts, which are Bengaluru's water sources.
- As summer heats up in India, around 7,082 villages across Karnataka are at risk of drinking water crisis in the coming months.
- India's monsoon is affected by various factors. One of the major factors of which is El Nino which has made the Indian monsoon more irregular.
- El Nino – occurred in the year 2014-16, but this phenomenon was so significant that it is one of the five strongest phenomena in the contemporary history of India.
- Due to the effect of El Nino in India, irregularities occur in the Indian monsoon.
- Due to climate change, after the record heat in the year 2023, the current heat situation is expected to get worse in 2024 also.
- Record-breaking heat could occur by 2026, the United Kingdom's Meteorological Office reports.
- Due to climate change, India's agricultural system, which is dependent on monsoon, will have to face more devastating effects. Therefore, the Government of India also needs to bring positive changes in the implementation of its sustainable development policies.
- Recently, 'World Water Day' was celebrated all over the world on 22 March 2024.
- World Water Day, held annually on 22 March since 1993, is an annual day of the United Nations. The main objective of which is to focus on the importance of freshwater.
- The main objective of World Water Day is to raise awareness about people living without access to safe water.
- Main topic or theme of World Water Day 2024 is "**Leveraging Water for Peace**".
- Recently, India's Jal Shakti Ministry launched a program for rainwater harvesting and other sustainable water management systems by starting '**Jal Shakti Abhiyan: Catch the Rain – 2024 Campaign**'.
- This program in India '**Water power through women power**' was based on a theme. It was organized at the Convention Center of New Delhi Municipal Council, as part of the fifth edition of the campaign of the Ministry of Jal Shakti.

- The campaign ‘ **Water power through women power** ’ seeks to establish a strong link between women empowerment and sustainable management of water resources in India.
- In this program which was organized in India ‘ **Jal Shakti Abhiyaan 2019 to 2023 – A public-led movement towards water security** ’ screening of a documentary titled and two books – **Talks by champions and women water warriors of ‘Jal Shakti Abhiyan: 2019 to 2023’** and ‘**101 Jal Jeevan Mission**’ was also unveiled.

### History of World Water Day:

- A proposal was passed on the topic of celebrating the festival and availability of clean water in the Environment and Development Conference held in Brazil in 1992 ‘ **World Water Day** ’.
- The United Nations General Assembly (UNGA) adopted this resolution in 1992 and every year at the global level ‘ **World Water Day** ’ on **22 March** ’ announced to be celebrated.
- **Therefore, ‘World Water Day’ was celebrated for the first time in the year 1993.**
- The UN recognized the right to safe, clean drinking water and sanitation as a human right in 2010,.
- The main objective of recognizing the right to safe, clean drinking water and sanitation as a human right is to focus people’s attention on the global water crisis.

### Importance of World Water Day:

- The main goal of World Water Day is to support the achievement of Sustainable Development Goal (SDG) 6.
- The main goal of celebrating World Water Day is to provide clean water and sanitation to all by 2030 at the global level.

### Why is There a Need For Water Conservation in the Present Times?

- According to the United Nations, 1.4 million people die every year from diseases caused by lack of sanitation, hygiene and clean water.

About 25% of the world’s population lacks access to clean water and almost half the global population lacks clean toilets. The global water scarcity is projected to increase by 55% by the year 2050.

- Water is extremely essential for everyday activities in human life. Proper use of water plays an important role in the management of freshwater reserves.
- On an average, a person wastes 45 liters of water a day through his daily activities. Therefore, making a few changes in daily water usage can save a considerable amount of water for future use.
- More than 3 billion people around the world migrate to other countries due to water dependence.
- Only 24 countries worldwide have signed cooperation agreements for shared water use.



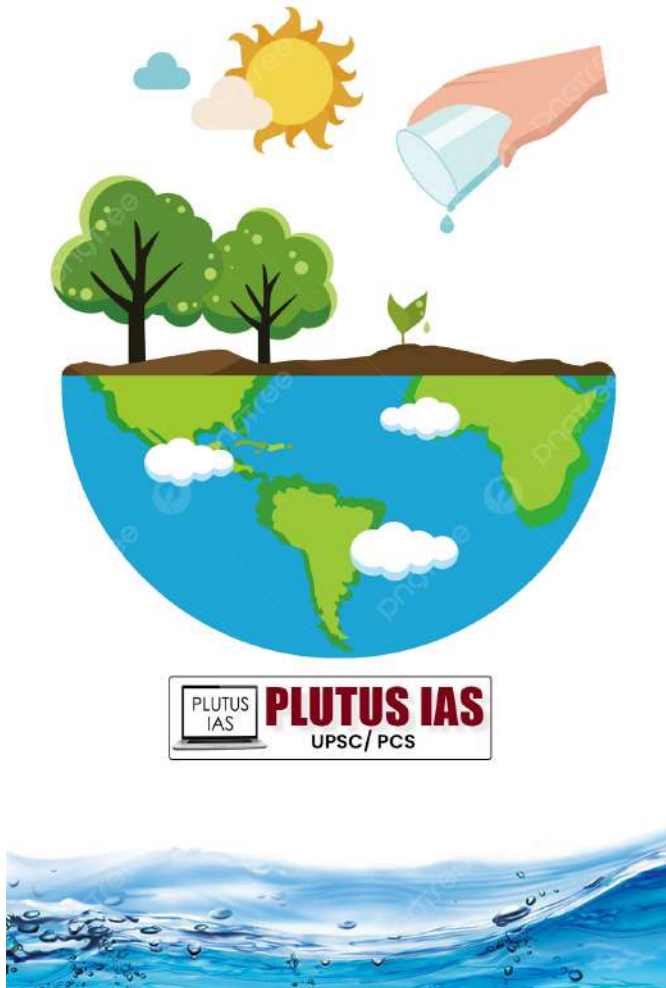
### Challenges For Water Management in India:

#### The following challenges exist before water management in India –

- To reduce the gap between demand and supply of water.
- Providing sufficient water for food production and balancing use among competing demands.
- To meet the growing demands of metros and other big cities.
- Treatment of wastewater.
- Sharing of water among neighboring countries

as well as among the states.

### WAY FORWARD:



- India is home to 18 percent of the world's population, but only about 4 percent of the people have access to adequate water resources.
- Nearly 90 million people in India do not have access to safe water. The normal annual rainfall of India is 1100 mm which is more than the world average rainfall of 700 mm.
- According to data released by the India Meteorological Department, the south-west monsoon has been below normal in 42 percent of the districts during June to August 2023. In August 2023, rainfall in the country was 32 percent below normal and 62 percent below normal in the southern states.
- India received the least rainfall in August last year after 1901 i.e. in the last 122 years.

- Less rainfall in India will not only have a serious impact on Indian agriculture, but it can also lead to severe water shortage in various areas of the country.
- The net quantity of water that can be used in a year in India is estimated at 1,121 billion cubic meters (BCM).
- Data published by the Water Resources Ministry shows that the total water demand will be 1,093 BCM in 2025 and 1,447 BCM in 2050. As a result, there is a possibility of a huge reduction in water availability in the next 10 years.
- India exploits groundwater the most in the world. This quantity is more than the combined exploitation of the world's second and third largest groundwater exploiters (China and the United States).
- According to the Falkenmark Water Index, about 76 percent of the people in India are already facing water shortage.
- According to a NITI Aayog report, by the year 2030 the country's water demand will double compared to the current available supply.
- Water consumption can be measured and limited using modern technologies like Artificial Intelligence, Remote Sensing etc.
- Expanding water sources, improving water efficiency, and protecting water resources can improve water availability and quality in India.
- Technological measures like buried clay pot plantation irrigation can also be used to overcome water crisis in India and for water conservation, thereby saving water and improving crop productivity.
- To overcome the water crisis in India and for water conservation, it is extremely important to improve policies at the government level to conserve water resources and expand micro irrigation techniques to ensure accurate and correct consumption of water. Can go.
- Watershed management can prove to be a good option for water conservation and groundwater

recharge in India.

- The main objective of development of water harvesting in India is to conserve every drop of rain water, control soil erosion, increase soil moisture and recharge, water harvesting per unit area and per unit water despite adversities of weather. Productivity has to be maximized.
- Special emphasis should also be given to the traditional system of water conservation in India.
- In order for the rivers flowing in different areas of India to remain perennial, it is very important to make policies at the government level and make efforts for water conservation.
- It is extremely important to establish a water bank in each area along with creating a clear framework for water budgeting and water auditing in rural areas of India.
- In water conservation, symposiums and seminars should be organized from time to time with groundwater scientists to create awareness about water conservation in the society. In the present situation, for a permanent solution to this problem, everyone will have to make collective efforts for water conservation and promotion.
- Bureaucratic, non-transparent and non-participatory approach still persists in the functioning of water governance institutions in India. Therefore, it cannot be denied that there is a need for improvement in the water administration of the country.
- It is necessary that reliable information and related data about natural disasters like drought and flood are available to us as soon as possible so that they can be dealt with in time and possible damage can be reduced. Therefore, important decisions regarding increasing the groundwater level and regulating groundwater use in India need to be taken urgently.
- The condition of rivers in the country is pathetic. Therefore, the condition of rivers can be seriously considered.

- There are policies related to water management or conservation in India, but the problem lies at the level of implementation of those policies. The laxity in the implementation of water conservation policies in India should be removed and better implementation should be ensured so that the biggest problem of water mismanagement in the country can be tackled.
- In low and middle income countries like India Climate change will have a more lethal impact by creating multiple crises simultaneously. While this process will change the way weather events co-evolve, it will also affect their frequency such that two events will be more likely to occur simultaneously than before – for example, drought and disease. outbreak, which will further worsen the socio-economic conditions of marginalized groups.
- Governments and policy makers need to keep in mind that other future crises may not just be due to climate change but will be connected to water.

## PRELIMS QUESTIONS

**Q.1 Consider the following statements regarding water conservation management and promotion in India in relation to climate change.**

1. India's monsoon is also affected by external factors like El Nino.
2. Watershed management is a good option for water conservation and groundwater recharge in India.
3. The main theme of World Water Day 2024 is 'Leveraging Water for Peace'.
4. The main theme of World Water Day 2024 in India was Water Power through Women Power.

**Which of the above statement /statements is/are correct ?**

- (a) Only 1, 2 and 3.
- (b) Only 2, 3 and 4.
- (c) None of these.



(d) All of the above .

## ANSWERS

| S. No. | Answers |
|--------|---------|
| 1.     | D       |

## MAINS QUESTIONS

**Q.1. Underlining the various threats arising from climate change, Discuss in detail the challenges and their solutions to water conservation, management and promotion in India.**

# INTERNATIONAL RELATIONS

## KATCHATHEEVU ISLAND CONFLICT

### Why in the News?

The small island of Katchatheevu has become a source of tension between India and Sri Lanka, highlighting the challenges of managing fishing rights and maritime borders in the region.

### About Katchatheevu Island

- Katchatheevu, a **285-acre deserted landmass situated in the Palk Strait** between India and Sri Lanka, lies northeast of Rameswaram, about 33 km from the Indian shoreline and approximately 62 km southwest of Jaffna, Sri Lanka's northernmost point. It was **formed as a result of volcanic activities during the 14th century**.
- This island **lacks essential resources like drinking water, making it unsuitable for permanent human habitation**. The **only construction on Katchatheevu is St. Anthony's church**, a Catholic shrine established in the early 20th century. Annually, Christian clergy from both nations conduct a festival service there, drawing devotees from India and Sri Lanka.



### History of the Island

- **During British colonial rule**, the 285-acre territory was **jointly administered by India and Sri Lanka**. Katchatheevu island was owned by the Raja of Ramnad, which eventually became part of the Madras Presidency.
- **In 1921, both India and Sri Lanka asserted ownership over the island** for fishing purposes, leading to an ongoing dispute.
- Following India's independence, efforts were made to address the territorial dispute between Ceylon and the British. Presently, Sri Lanka administers the uninhabited island.

### What is the Conflict Around Katchatheevu Island?

- For decades, the waters surrounding Katchatheevu Island served as a shared bounty for Indian and Sri Lankan fishermen. This **harmonious dynamic shifted dramatically in the 1970s with the signing of a series of maritime boundary agreements** between the two nations.
- These agreements, intended to establish clear maritime borders and facilitate resource management, inadvertently sowed the seeds of conflict.
- **Shifting the control:** A key point of contention is the ownership of Katchatheevu Island itself. **In 1974, India ceded control of the island to Sri Lanka under the "Indo-Sri Lankan Maritime Agreement."** While Indian fishermen retained limited access to resting and drying nets, their fishing rights were restricted.
- **Limited Fishing Zone:** The agreements carved out exclusive economic zones (EEZs) for each country, restricting fishermen from venturing into the other's territory. This posed a challenge for Indian fishermen, particularly as fish stocks in their own waters dwindled.
- **Depleting resources:** Depleted fish populations within the Indian continental shelf pushed Indian fishermen further into Sri Lankan waters

in search of better catches. This influx raised concerns about overfishing and the potential ecological damage caused by modern fishing practices like trawling.

- **Strain in diplomatic relations:** The increased presence of Indian fishermen in Sri Lankan waters has led to numerous incidents of apprehension by Sri Lankan authorities. This ongoing friction strains diplomatic relations and jeopardises the livelihoods of fishermen on both sides.

### Difference Between the Central Government's and Tamil Nadu's Stands.

#### Tamil Nadu's Claim on Katchatheevu Island

- Tamil Nadu has a long history of contesting the ceding of Katchatheevu to Sri Lanka. As early as 1973, the state's Chief Minister argued that the island rightfully belonged to India, not just Tamil Nadu.
- The issue flared up again in 1991. The then Chief Minister initially called for reclaiming the island entirely. Later, the demand softened to a request for a long-term lease (perpetual lease) of Katchatheevu.
- Notably, both the Chief Minister and the Leader of the Opposition in Tamil Nadu joined forces to approach the Supreme Court on this matter.

#### Central Government's Position

- The Indian government's stance centres around the **1974 and 1976 agreements** that established the maritime boundary between India and Sri Lanka. In 2013, **they argued before the Supreme Court that the question of reclaiming Katchatheevu was irrelevant.** They maintained that these agreements were settlements of historical disputes and no Indian territory was ceded in the process.
- However, the central government's position seems to acknowledge some nuance. While citing the same agreements in 2022, **they clarified in the Rajya Sabha that Katchatheevu lies on the Sri Lankan side of the established maritime boundary.**

- The central government's position seems to be that the agreements are valid and the island belongs to Sri Lanka. However, the legal challenge by Tamil Nadu is still pending in the Supreme Court. This indicates that the domestic debate on Katchatheevu is far from settled.

## PRELIMS QUESTIONS

### Q1. Consider the following statements:

1. The value of Indo-Sri Lanka trade has consistently increased in the last decade.
2. "Textile and textile articles" constitute an important item of trade between India and Bangladesh.
3. In the last five years, Nepal has been the largest trading partner of India in South Asia.

### How many of the statements above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

### Q2. Consider the following pairs:

| Regions      | Country     |
|--------------|-------------|
| 1. Catalonia | Spain       |
| 2. Crimea    | Hungary     |
| 3. Mindanao  | Philippines |
| 4. Oromia    | Nigeria     |

### How many of the pairs given above are correctly matched?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

**ANSWERS**

| S. No. | Answers |
|--------|---------|
| 1.     | A       |
| 2.     | B       |

**MAINS QUESTION**

**Q1. Assess the potential socio-economic consequences of resolving the dispute over Katchatheevu Island for the livelihoods of fishermen and the diplomatic relations between India and Sri Lanka.**