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# CURRENT AFFAIRS MONTHLY

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**By CivilsTap Himachal**

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## GENERAL STUDIES 2.

### POLITY AND CONSTITUTION

#### WELCOME ASSERTION

##### Context:

- ❖ Supreme Court (SC) of India has fixed a deadline for the Maharashtra Assembly Speaker to adjudicate on petitions seeking the disqualification of members who had broken away from the leadership of the Shiv Sena and the Nationalist Congress Party (NCP).

##### Disqualification of legislators

- ❖ Constitutional provisions consist of Articles 102 & 191: The basic disqualification criteria for an MP are outlined in Article 102 of the Constitution, while those for an MLA are outlined in Article 191.
- ❖ Grounds for disqualification under the Constitution include conditions like holding a profit-making position in the Government of India or a state government, Being of unsound mind, being an unpaid insolvent, not being an Indian citizen, or acquiring citizenship of another country.
- ❖ Article 102 also empowers the Parliament to enact legislation governing the conditions of disqualification.

##### Anti-defection law (ADL) and 10th schedule

- ❖ Parliament added 10th schedule to the Constitution via the 52nd Amendment Act, 1985. Grounds of Disqualification under the law are:
- ❖ If an elected member voluntarily gives up his membership of a political party.
- ❖ If s/he votes or abstains from voting in such House contrary to any direction issued by his political party or anyone authorized to do so, without obtaining prior permission.
- ❖ If any independently elected member joins any political party.
- ❖ If any nominated member joins any political party after the expiry of 6 months.

##### Role of Speaker:

- ❖ Pressing officers of the legislature are empowered to take the final decision in matters of disqualification of legislators under 10th schedule, although after Kihoto Hollohan case (1992), their decision in the matter is now subject to judicial review (eg, on grounds of mala fide/bad intent etc).
- ❖ There is no clarity in the law about the timeframe for the action of the House Chairperson or Speaker in the anti-defection cases. In the Maharashtra assembly case, it has been pending since July 2022.
- ❖ Long experience shows that Speakers tend to treat disqualification issues with great alacrity or supine indifference, depending on their political affiliations. Despite being reminded from time to time of their duty to remain neutral and demonstrate a sense of urgency in dealing with questions arising out of the Tenth Schedule of the Constitution, presiding officers appear to place political loyalties above their constitutional duty.

##### Role of the judiciary

- ❖ It is quite fitting, therefore, that the apex court has asked Speaker Rahul Narwekar to decide the disqualification petitions against Chief Minister Eknath Shinde's camp by December 31 and those concerning the NCP's breakaway group headed by Deputy Chief Minister Ajit Pawar by January 31, 2024.
- ❖ The directions are a natural follow-up to the outcome of a Constitution Bench decision on May 11, 2023, in which the Speaker was asked to decide the disqualification issue "within a reasonable period".
- ❖ None can dispute that the Speaker has had enough time to decide the matter, even though a few procedural aspects and the clubbing of petitions may account for some delay. In an earlier order in September, the Court had observed that it expected the Speaker to show deference to its directions, especially when he is acting as a tribunal under the Tenth Schedule.

- ❖ Even without judicial orders, the issue of whether a member has incurred disqualification is not a matter which can be dealt with in a leisurely or partisan manner. Recent political history is rife with instances of ruling parties casually recruiting members of the Opposition in several States without any fear of disqualification, as they know that friendly Speakers will not disqualify them.

### Way forward

- ❖ So long as the Speaker is vested with the authority to adjudicate disqualification issues, it will be difficult to free matters of defection from the thicket of politics.
- ❖ India may examine following the UK model regarding the position of the Speaker, whereby a legislator elected as Speaker to the House resigns from his/her political party membership in order to remain neutral in his/her functions.

## ACTION AND AUTHORITY

### Context

- ❖ Governors should not give scope for criticism they challenge elected regimes.

### About

- ❖ That two States have approached the Supreme Court of India against the conduct of their Governors once again flags the problem of political appointees in Raj Bhavan using their authority to delay the implementation of decisions by elected regimes, if not undermine them.

### The question

- ❖ Tamil Nadu and Kerala have questioned the delay in the granting assent to Bills passed by the legislature.
- ❖ Tamil Nadu is also aggrieved that proposals related to grant of remission to some convicts, sanction for prosecution of some former Ministers and appointments to the State Public Service Commissions have not been acted upon.
- ❖ Governors need not rubber stamp any decision, but one can question the practice of Governors, especially in States not governed by the ruling party at the Centre, blocking decisions and Bills.
- ❖ For instance, some Governors appear to be hostile to the very idea of amendments to university laws if they seek to leave out Chancellors, invariably the Governors themselves, from the process of appointing vice-chancellors, or establishing new universities in which Governors are not chancellors.
- ❖ The idea of having Governors as ex-officio vice-chancellor of most universities is only a practice and is actualised through their founding statutes.
- ❖ However, Governors seem to be labouring under the misconception that they have a right to be chancellors and tend to delay assent to any Bill that clips or removes their power.
- ❖ It is time to have a national prohibition on Governors being burdened with the role of chancellor of any university, as recommended by the Justice M.M. Punchhi Commission on Centre-State relations.

### The glitches

- ❖ It is unfortunate that absence of a time-frame for giving assent is used by some Governors to stymie laws passed by the legislature.
- ❖ One would have thought the Supreme Court's observations, arising out of the Telangana government's petition, reminding constitutional authorities that the phrase "as soon as possible" appearing in Article 200 of the Constitution contains significant "constitutional content" would have driven into them a sense of immediacy in considering Bills.
- ❖ What the Court meant was that it would be constitutionally impermissible for Governors to indefinitely hold on to Bills without conveying a decision.
- ❖ The States, too, ought to be prudent in their decision-making without leaving scope for questions on the merit of their decisions.

### Conclusion

- ❖ The absence of any laid-down process to seek applications and assess the relative merits of applicants before appointing the chairperson and the members of the Tamil Nadu Public Service Commission is a case in point.

The larger point that none should forget is that Governors are explicitly restricted in their functioning by the 'aid and advice' clause in the Constitution and ought not to misuse the discretionary space available to them.

## STATES IN COURT AGAINST THEIR GOVERNORS

### Context:

- ❖ Some States ruled by political parties in opposition to the party in power at the Center have approached the Supreme Court (SC) accusing their Governors of using a non-existent discretion to unreasonably delay the passing of crucial Bills into law. The Bills in limbo cover sectors such as public health, higher education, Lokayukta and cooperative societies.

### The accusations

- ❖ For example, Tamil Nadu has accused its Governor of sitting on the Bills by neither assenting nor returning them.
- ❖ Kerala, in its separate petition, said that eight proposed laws passed by its Legislative Assembly were pending with the Governor, not for months, but years.
- ❖ Kerala has asked the Supreme Court to form a 7-judge Bench to review a 5-judge Bench judgement in the 1962 Purushothaman Nambudiri case which held the view that Article 200 did not provide "for a time limit within which the Governor..... should come to a decision on the Bill referred to him for his assent". The State said that, at the time, the court did not consider the possibility of Governors holding back Bills for an indefinite time.
- ❖ SC had to intervene in April for the Telangana Governor to clear Bills pending since 2022, compelling the advocate appearing for the State to submit that legislatures in Opposition Ruled States were at the mercy of the Governors, who had become a law unto themselves.

### The process of granting assent

- ❖ Article 200 of the Constitution enables the Governor, when a Bill passed by both Houses of the Legislature, to either declare his assent to the Bill or withhold the assent if it is not a Money Bill, or reserve the law for the consideration of the President.
- ❖ Article 163 There shall be a Council of Ministers with the Chief Minister at the head to aid and advise the Governor in the exercise of his functions except in so far as he is by or under the Constitution required to exercise his functions or any of them in his discretion.
- ❖ The top court in the Shamsher Singh case verdict has held that as a formal head of the State a "Governor exercises all his powers and functions conferred on him by or under the Constitution on the aid and advice of his Council of Ministers save in spheres where the Governor is required by or under the Constitution to exercise his functions in his discretion." The assent or return of the Bill does not involve the discretion of individuals occupying the Governor's post.

### By when should Bills be returned?

- ❖ The first proviso of Article 200 says it should be "as soon as possible". The Constitution is silent on what exactly this phrase means. Justice Rohinton F. Nariman, in his 2020 judgement in the Keisham Megha Chandra Singh case, said a 'reasonable time' would mean 3 months.

### Conclusion

- ❖ The States have urged the court to interpret the phrase in the proviso and fix a time limit by which Governors should assent or return a Bill. The 1988 Sarkaria Commission report on Centre--State relations had suggested consultation with the Governor while drafting the Bill and fixing a deadline for its disposal.

## KERALA MOVES SC AGAINST GOVERNOR AGAIN

### Context:

An ongoing case before the Kerala High Court on restricting negative reviews of films in the first few days of their release constitutes an interesting as well as challenging free speech issue.

### Introduction



- ❖ The court has taken on the task of distinguishing genuine film criticism from attempts to destroy a movie's prospects of success through malicious comments, or by threatening to post negative reviews with a view to extorting money.
- ❖ It appears that the court is aware of the implications of any move to restrict or curb disparaging reviews for free speech and freedom of expression, but it remains to be seen how it will be able to balance the commercial interests of film-makers and the freedom of reviewers.

### Free speech

- ❖ Freedom of expression is a fundamental human right, enshrined in Article 19 of the Universal Declaration of Human Rights. But around the world, there are governments and those wielding power who find many ways to obstruct it.
- ❖ They impose high taxes on newsprint, making newspapers so expensive that people can't afford to buy them. Independent radio and TV stations are forced off the air if they criticize Government policy. The censors are also active in cyberspace, restricting the use of the Internet and new media.

### Article 19 (1) Of the Indian Constitution

- ❖ Article 19(1) (a) of the Constitution of India states that, all citizens shall have the right to freedom of speech and expression.
- ❖ The philosophy behind this Article lies in the Preamble of the Constitution, where a solemn resolve is made to secure to all its citizen, liberty of thought and expression.
- ❖ The exercise of this right is, however, subject to reasonable restrictions for certain purposes being imposed under Article 19(2) of the Constitution of India.

### Key features of the right

- ❖ This right is available only to a citizen of India and not to foreign nationals.
- ❖ The freedom of speech under Article 19(1) (a) includes the right to express one's views and opinions at any issue through any medium, e.g. by words of mouth, writing, printing, picture, film, movie etc.
- ❖ This right is, however, not absolute and it allows Government to frame laws to impose reasonable restrictions in the interest of sovereignty and integrity of India, security of the state, friendly relations with foreign states, public order, decency and morality and contempt of court, defamation and incitement to an offence.

### Recent issue

- ❖ Film director Mubeen Rauf had approached the court for a direction to the Information and Broadcasting Ministry and the State Information Technology Department, among others, to ensure that social media influencers and film reviewing vloggers do not publish any reviews of his film Aromalinte Adyathe Pranayam in social media for at least seven days from the date of its release.
- ❖ Remarks and observations made so far in interlocutory orders suggest that the court's focus is mainly on those who either post anonymously or vloggers with unknown credentials who trash films within hours of their release with apparently malicious intent, and do not threaten the freedom of film reviewers with acknowledged expertise and experience.

### Court's order

- ❖ In an order on October 25, Justice Devan Ramachandran directed that "a close watch on the online platforms shall be maintained, to ensure that anonymous mala fide content is not allowed to circulate; and necessary action under the provisions of the "IT Act" [Information Technology Act] shall be taken and implemented scrupulously without delay". Interestingly, the order also notes that apparently due to the very pendency of these proceedings, the film made by the petitioner had a good run at the box office as it was spared "review bombing", the term that has gained currency for the phenomenon of deliberate spoiling of a film's prospects.

### Conclusion

- ❖ The court's observation in its latest order that the freedom of those involved in making a film should not be sacrificed at the altar of the "unbridled freedom of expression" of those acting under the impression that they are not governed by any parameters or regulations should not lead to a verdict either curbing the

freedom to critically analyze a film or an attempt to restrict the art of criticism. After all, making and reviewing a film are both two aspects of the same right to free speech.

## OVER THE TOP

### Context: On Mahua Moitra and panel's disqualification recommendation

#### Introduction

- ❖ The alacrity with which the Lok Sabha Ethics Committee went about recommending the expulsion of Trinamool Congress Member of Parliament (MP) Mahua Moitra from the lower House is certainly not a sign of any fidelity to ethics, or fairness. The recommendation is a brazenly partisan attempt to silence a critic of the government.

#### Ethics Committee- Lok Sabha

- ❖ A Presiding Officers' Conference held in Delhi in 1996 first mooted the idea of ethics panels for the two Houses.
- ❖ Then Vice President (and Rajya Sabha Chairman) K R Narayanan constituted the Ethics Committee of the Upper House on March 4, 1997, and it was inaugurated that May to oversee the moral and ethical conduct of members and examine cases of misconduct referred to it. The Rules applicable to the Committee of Privileges also apply to the ethics panel.
- ❖ In the case of Lok Sabha, a study group of the House Committee of Privileges, after visiting Australia, the UK, and the US in 1997 to look into practices pertaining to the conduct and ethics of legislators, recommended the constitution of an Ethics Committee, but it could not be taken up by Lok Sabha.
- ❖ The Committee of Privileges finally recommended the constitution of an Ethics Committee during the 13th Lok Sabha. The late Speaker, G M C Balayogi, constituted an ad hoc Ethics Committee in 2000, which became a permanent part of the House only in 2015.
- ❖ The members of the Ethics Committee are appointed by the Speaker for a period of one year.
- ❖ The 15-member Committee's function is to examine every complaint relating to unethical conduct of a Member of Lok Sabha referred to it by the Speaker and make such recommendations as it may deem fit.

#### Concerns

- ❖ It is also a warning shot meant to intimidate MPs from doing their job of holding the executive accountable. Neither the process nor the conclusions of the committee are grounded in any decipherable principle.
- ❖ The committee, with the help of the Ministry of Electronics and Information Technology found that the MP's credentials were used online from Dubai 47 times to access the Parliament portal.
- ❖ Parliamentary questions were submitted from abroad. As Opposition members in the committee have pointed out, the drafting and the submission of questions are routinely done by aides of MPs.
- ❖ And MPs raise questions in Parliament based on representations from various constituents. To assume without solid evidence that any question is in exchange of material favours and then to expel an elected MP, is an assault on parliamentary democracy itself.
- ❖ The committee is calling upon the government to investigate the allegation of 'quid pro quo' raised by one of its members against Ms. Moitra, after holding her guilty, turning the principle of natural justice on its head.
- ❖ If MPs are barred from sharing their login credentials with others, the rule must equally apply to one and all. Now that the committee has taken this extreme step of calling for the expulsion of an elected member from the House, thereby depriving the voters of her constituency representation, it should also investigate how other MPs prepare and submit parliamentary questions.
- ❖ The selective investigation of one MP, based on insinuations and conjectures, clearly comes out as what it is — intimidation. It is also in stark contrast with the tardy response of the Lok Sabha Committee of Privileges to a serious complaint against Bharatiya Janata Party MP Ramesh Bidhuri who used derogatory communal slurs against a fellow member in the Lok Sabha.

#### Conclusion

- ❖ That said, Ms. Moitra's act of allowing a person who is not employed by her to execute official work on her behalf betrays a lack of discretion and judgement. This should act as a lesson for all those who seek to hold the government accountable: to keep themselves beyond reproach.

## REVAMPING THE CRIMINAL JUSTICE SYSTEM TO FIT THE BILL

**Context:** There needs to be proper parliamentary scrutiny of the new Bills replacing the IPC, the CrPC and the IEA to ensure a fair, just and efficient criminal justice system.

### Introduction

- ❖ The Government has introduced three Bills to replace the core laws, i.e., the Indian Penal Code (IPC), 1860, the Code of Criminal Procedure (CrPC), 1973, and the Indian Evidence Act (IEA), 1872, which form the basis of the criminal justice system.
- ❖ These Bills are being examined by the Parliamentary Standing Committee on Home Affairs. (The Bharatiya Nyaya Sanhita Bill will replace the IPC; the Bharatiya Nagarik Suraksha Sanhita Bill will be in place of the CrPC, and the Bharatiya Sakshya Bill will replace the IEA.)

### Criminal Justice System

- ❖ The criminal justice system is the network of government and private agencies intended to manage accused and convicted criminals. The criminal justice system is comprised of multiple interrelated pillars, consisting of academia, law enforcement, forensic services, the judiciary, and corrections.
- ❖ These pillars are fashioned to support the ideals of legal justice. Legal justice is the result of forging the rights of individuals with the government's corresponding duty to ensure and protect those rights – referred to as due process.
- ❖ These constitutional entitlements cannot be given and protected without the abiding commitments of those professionals working in the criminal justice system. Consequently, such professionals must submit themselves to the ethical principles of the criminal justice system and evidence persistent integrity in their character.
- ❖ This is accomplished with the help of a worthy code of professional ethics that signals competence, reliability, accountability, and overall trustworthiness – when properly administered.

### Questions raised by the Bills

- ❖ As these Bills replace the entire Acts — and are not merely Amendment Bills to fix some gaps — they provide an opportunity for an overhaul of the laws underlying the criminal justice system. This raises the following questions — Do they update the law to reflect the concepts of modern jurisprudence? How do these Bills relate to various special laws? Do they help unclog the criminal justice system? Are various definitions and provisions drafted well without ambiguity?

### Issues related to modernising jurisprudence

- ❖ First, whether these Bills exclude civil law. Usually, criminal law deals with issues that are seen as an offence against the broader society or state while civil law deals with loss to a person.
- ❖ However, the CrPC includes provisions for maintenance of wife and children after divorce. It also allows compounding of some offences by the affected person, which means the accused person is acquitted.
- ❖ Second, whether these Bills create a reformatory system rather than a punitive system. There is a move towards this by making community service as a form of punishment. However, several minor offences (such as keeping an unauthorised lottery office, which carries a maximum penalty of six months imprisonment) are not compoundable, which means they will go through the process of trial and conviction.
- ❖ Third, whether maintenance of public order and the process of criminal prosecution should be in the same law. The CrPC has provisions charting out the process of arrest and trial as well as items such as Section 144 that empower the district magistrate to impose various restrictions. The new Bill retains this structure.



- ❖ Fourth, whether various directions of the Supreme Court of India have been codified in these proposed laws. The Bill codifies the procedure for mercy petitions. However, there is no codification of various directions related to arrests and bail.
- ❖ Fifth, whether the Bills try to ensure consistency of implementation. Typically, penalties for offences specify a range, with the judge expected to specify the sentence within the range based on the circumstances of each case.
- ❖ Sixth, whether the age provisions have been updated for modern norms. The IPC specifies that a child below the age of seven years cannot be accused of an offence. It provides such exemption until 12 years of age, if the child is found not to have attained the ability to understand the nature and consequences of his conduct.
- ❖ Seventh, whether gender related offences have been updated. The Bill is in line with the Supreme Court judgment which struck down the offence of adultery. Section 377 of the IPC, which was read down by the Court to decriminalise same sex intercourse between consenting adults has been dropped; consequently, the parts retained by that judgment including rape of a male adult and bestiality have also been removed.

### Duplication as well as inconsistency across the laws

- ❖ The IPC was enacted in 1860 as the principal law specifying offences and penalties. Since then, several laws have been enacted to deal with specific offences. However, the IPC and the Bill to replace it continue to specify some of these offences and the applicable penalties. This leads to duplication as well as inconsistency across these laws. In some cases, the penalties are different; also, a person may face prosecution under different laws for the same action.
- ❖ In some cases, this has been addressed. For example, the Legal Metrology Act, 2009 states that provisions of the IPC related to weights and measures will not apply; the Bill removes these provisions.
- ❖ However, the Bill (like the IPC) overlaps with several other Acts such as those related to food adulteration, sale of adulterated drugs, bonded labour, and rash driving. Abortion continues to be an offence though it is permitted under certain conditions under the Medical Termination of Pregnancy Act, 1971. The Bill replacing CrPC retains the provision requiring maintenance of a parent though a special Act was passed in 2007 regarding this.

### Definitions and Drafting

- ❖ The Bill replacing the IPC provides a person suffering from mental illness as a general exception from being an offender (this was called unsound mind earlier).
- ❖ The definition of mental illness is the same as in the Mental Healthcare Act, 2017.
- ❖ That Act aims to provide medical treatment to persons suffering from mental illness, and, therefore, excludes mental retardation or incomplete development; it also includes abuse of alcohol or drugs. Consequently, the new Bill will provide full exemption to someone who is addicted to alcohol or drugs but not to a person who is unable to understand the consequences of their actions due to mental retardation.
- ❖ The three laws had a number of illustrations from daily life to clarify their provisions. Some of these illustrations have become obsolete but have still been retained. These include people riding chariots, firing cannons and being carried on palanquins. It may be useful to update these illustrations to events from modern life.

### Conclusion

- ❖ These Bills will become the basis of the criminal justice system. Parliament should examine them with great care so that they create a fair, just and efficient criminal justice system.

## CHALLENGING THE ELECTORAL BOND SCHEME

### Introduction:

- ❖ Civil society has been campaigning for long to empower the voter by improving her access to background information on the candidates in the electoral fray, and to bring about greater transparency in the obscure domain of political funding.
- ❖ In this, the instrument of public interest litigation (PIL) has been deployed to good effect. The campaign is premised on the citizen's democratic right to information (RTI), which is integral to the fundamental right to speech and expression under the Constitution.

### A veil over the corporate donor

- ❖ Electoral Bond Scheme (EBS) was touted as a sincere effort to clean up electoral democracy by incentivising political donations through banking channels.
- ❖ To begin with, the Foreign Contribution (Regulation) Act (FCRA) was retrospectively amended through the Finance Act of 2016 to permit Indian subsidiaries of foreign companies to donate to political parties. This was followed by an overhaul of the regulatory framework comprising the Representation of the People Act (RPA), the Companies Act, 2013, the Income Tax (IT) Act and the RBI Act through the Finance Act of 2017, despite strident protests from the RBI, the Election Commission of India (ECI) and Opposition parties.
- ❖ The device of incorporating the amending Bills in the Finance Bill effectively short circuited the consideration of the legislative proposals by the Rajya Sabha and ensured their smooth passage.
- ❖ Months before the EBS was promulgated, the Association for Democratic Reforms (ADR) and Common Cause filed a PIL to challenge the constitutionality of the amendments made in the Finance Act of 2017. The petition contended that these amendments infringed the citizen's fundamental 'Right to know' under Article 19(1)(a), and were not saved by any of the permissible restrictions under Article 19(2).
- ❖ The petition held that the impugned amendments jeopardised the country's autonomy, militated against transparency, incentivised corrupt practices by lifting the caps on corporate donations and allowing contributions by loss making and shell companies. Consequently, the nexus between politics and big business was rendered more opaque.
- ❖ The instrument would enable special interest groups, corporate lobbyists and foreign entities to secure a stranglehold on the electoral process and influence the country's governance to public detriment.
- ❖ By relieving the political parties of the duty to disclose the particulars of their donors, the amendments eroded the ECI's constitutional role and deprived citizens of vital information concerning electoral funding. Further, the recourse to a money bill to amend the relevant laws subverted the legislative scheme envisaged in the Constitution.

### Bonds, the favoured mode

- ❖ Over time, electoral bonds have become the favoured mode of political donation. Bonds worth ₹13,791 crore have been sold in 27 tranches until July 2023. The ADR's research has shown that electoral bonds accounted for 55.9% of the donations.
- ❖ As per ADR report, BJP got the lion's share of 74.5% of electoral bonds redeemed until 2020-21. INC was a distant second, at 11%, followed by the Biju Janata Dal, the YSR Congress Party and the Trinamool Congress.
- ❖ Over 94% of the electoral bond sales are in the denomination of one crore rupees — a sum beyond the capacity of individual donors. Moreover, particulars of individuals contributing ₹20,000 and above are duly disclosed in party accounts.
- ❖ The expenditure on the last general election to the Lok Sabha has been estimated at between ₹55,000 to ₹60,000 crore. Most dealings of political parties continue to be in cash, but the receipts from electoral bonds enable them to meet their transactions with the formal economy, such as the costs of infrastructure expansion, equipment and publicity in the print, electronic and digital media. This gives them an enormous advantage over their rivals in influencing voter behaviour and electoral outcomes.
- ❖ Meanwhile, a general election to the Lok Sabha and 30 elections to State Assemblies have been held. In most of these contests, the political formations in power have enjoyed the advantage of augmented inflow of corporate contributions, thanks to the EBS that inherently favours the incumbent.
- ❖ Supreme Court (SC) of India did not take kindly to the petitioners' repeated pleas to stay the impugned scheme, pending determination of the weighty issues raised in their petition. Solicitor General has argued that anonymity is central to the right to privacy of political donors, even though this fundamental right is not available to artificial legal persons.

### Conclusion:

- ❖ Based on the Supreme Court's stellar record in expanding the scope of the right to freedom of speech and expression and empowering the voter to make an informed choice, one may hope that the next round of elections will be contested on a reasonably level playing field.

## UNHEEDED ADVICE

### Context:

- ❖ Ongoing proceedings before the Supreme Court raise concerns about the conduct of some Governors. The key issue that has forced State governments to approach the court for redress is the perverse manner in which incumbents in Raj Bhavan have used the absence of a timeframe for granting assent to Bills to harass and frustrate elected regimes.

### Recent trends:

- ❖ When the court raised the question, “What was the Governor doing for three years?” with respect to the Tamil Nadu Governor, R.N. Ravi, it was underscoring the fact that he disposed of pending Bills only after the court’s observations about the delay in an earlier hearing.
- ❖ The Governor’s reluctance to act until an aggrieved government approached the court seems deliberate. The hearing was marked by some questions and answers about the implications of the Governor’s action in withholding his assent to 10 Bills, and the response of the State Assembly in passing the Bills for a second time.
- ❖ Preliminary observations by the court suggest that the scheme of Article 200 of the Constitution, which deals with the presentation of Bills passed by the legislature to the Governor for assent, will come under a good deal of scrutiny in this matter.

### The larger issue:

- ❖ With the court noting that the Governor cannot refuse assent to the reenacted Bills, the present legislative impasse can be given a quick resolution if Mr. Ravi acts on the observation. However, the matter should not end there. The larger issue requires a clear enunciation of the law.
- ❖ The tenor of Constituent Assembly debates indicates that it intended to make the power of granting or withholding assent to Bills, or even returning them for reconsideration, exercisable solely on the advice of the Council of Ministers. However, in practice, many Governors have acted on their own, especially in reserving Bills for the President’s consideration.

### Article 200

- ❖ Supreme Court must now come up with an authoritative decision so that uncooperative Governors do not use such grey areas to their advantage. It must also be clarified whether ‘withholding assent’ is a final act of rejection of a Bill or it needs a follow up action in the form of returning the Bill with a message for reconsideration by the House, as stated in the first proviso to Article 200.
- ❖ It is a settled position in Indian law now that Governor, while declaring that s/he withholds assent to a bill, will have to disclose the reason for such refusal; being a high constitutional authority, s/he cannot act in an arbitrary manner.
- ❖ A constitution bench of the Supreme Court in Rameshwar Prasad and Ors. vs Union Of India and Anr held that if the grounds for refusal disclose mala fide or extraneous considerations or ultra vires, the Governor’s action of refusal could be struck down as unconstitutional.
- ❖ Article 200 of Indian Constitution states that “When a Bill has been passed by the Legislative Assembly of a State or, in the case of a State having a Legislative Council, has been passed by both Houses of the Legislature of the State, it shall be presented to the Governor and the Governor shall declare either that he assents to the Bill or that he withholds assent therefrom or that he reserves the Bill for the consideration of the President.”
- ❖ The proviso bars Governors from withholding assent to any Bill they had returned for reconsideration and has been adopted again by the legislature.
- ❖ The issue has also highlighted constitutional ambiguities on the role of Governors. The ‘aid and advice’ clause that is at the core of parliamentary democracy is somewhat undermined by clauses that allow Governors to give themselves discretion they were never meant to have. Such provisions need wholesome reconsideration.

### Conclusion



- ❖ The refusal of assent by a 'rubber stamp' or nominal head is not followed in other democratic countries (eg USA, UK). In some cases, the Constitution provides a remedy so that a Bill passed by the legislature can become law despite the refusal of assent. In this context, Indian Parliament should examine the role of Governor and end this constitutional deadlock.

## NO VOTE FOR VETO

### Context:

- ❖ In a parliamentary democracy, Governors do not have a unilateral veto over Bills passed by the legislature. This is the crux of the Supreme Court's ruling in a case arising from Punjab after Governor Banwarilal Purohit withheld assent to some Bills passed by the State Assembly on the pretext that these were adopted in an illegal session of the House.

### Constitutional provision

- ❖ The Court's reading of the scheme of Article 200, which deals with grant of assent to Bills, is in line with the core tenet of parliamentary democracy: that an elected regime responsible to the legislature runs the State's affairs.
- ❖ **Article 200 reads:** "When a Bill has been passed by the Legislative Assembly of a State or, in the case of a State having a Legislative Council, has been passed by both Houses of the Legislature of the State, it shall be presented to the Governor and the Governor shall declare either that he assents to the Bill or that he withholds assent therefrom or that he reserves the Bill for the consideration of the President."
- ❖ **However, the Article has a caveat:** it says that the Governor "may, as soon as possible" return Bills other than money Bills, with a message requesting that the House reconsider it in parts or in whole. But once the Legislative House reconsiders the Bill and sends it to the Governor once again, the Governor "shall not withhold assent therefrom".
- ❖ The Supreme Court (SC) has now read the power to withhold assent and the proviso in conjunction, holding that whenever the Governor withholds assent, he has to send the Bill back to the legislature for reconsideration. This effectively means that the Governor either grants assents in the first instance or will be compelled to do so after the Bill's second passage.
- ❖ The Court has done well to point out that Governors, in a system that requires them to function mainly on the aid and advice of the Council of Ministers, cannot withhold action on Bills and must act as soon as possible.
- ❖ This is a clear reprimand administered to Governors who believe they can endlessly delay action on Cabinet or legislative proposals because of the absence of a prescribed time frame.

### Present case and way forward

- ❖ Mr. Purohit's stand that the particular session of the Assembly was illegal — because an adjourned House was reconvened by the Speaker on his own — has been rejected. The Court has ruled that the earlier session had only been adjourned and not prorogued.
- ❖ The verdict should not give any further scope for controversy over the role played by Governors in the law-making process that culminates with their granting assent to Bills, and must end the tussle between elected regimes and the Centre's appointees.
- ❖ There is still some residual scope for controversy if, as a result of Governors being divested of the power to reject Bills unilaterally, they start referring Bills they disapprove of to the President. Such an eventuality should not be allowed to arise.

### Relevant judicial verdicts and commissions

- ❖ The landmark case of *Shamsher Singh v State of Punjab*, decided in 1974 by a Constitution bench of the Supreme Court, established that a Governor is required to exercise their formal constitutional powers solely upon and in accordance with the aid and advice of their ministers, except in some exceptional circumstances. These exceptions pertain to the removal of a government that no longer holds a majority, as well as the decision to invite a party to assume governance

- ❖ The 1983 Sarkaria Commission on Center-state relations put forth several modifications aimed at augmenting the responsibilities and influence of Governors. There is a suggestion that Governors ought to possess a non-partisan and impartial disposition, while also maintaining a fixed tenure to uphold stability and continuity.
- ❖ The 2010 Punchhi Commission proposed that the appointment of governors should involve consultation with the Chief Minister of the respective state, and that governors should be granted enhanced responsibilities in domains such as tribal welfare, regional development, and the promotion of cooperative federalism such as tribal welfare, regional development, and promoting cooperative federalism.
- ❖ Most court verdicts as well as commissions have recommended governor's position as a neutral one between Center and states, without having any extraordinary or parallel legislative powers to that of the state legislature. This is also essential for cooperative federalism.

## IT'S TIME TO REVAMP THE STRUCTURE OF THE SUPREME COURT

### Context

- ❖ Supreme Court (SC) of India has three jurisdictions under the Constitution: original, appellate, and advisory. The Supreme Court serves as a Constitutional Court as well as a Court of Appeal. The Court sits in benches of varying sizes, as determined by the Registry on the directions of the Chief Justice of India (CJI), who is the Master of the Roster.

### Constitution Benches of the Supreme Court

- ❖ Article 145(3) of the Constitution provides for the setting up of a Constitution Bench. It says a minimum of five judges need to sit for deciding a case involving a "substantial question of law as to the interpretation of the Constitution", or for hearing any reference under Article 143, which deals with the power of the President to consult the Court.
- ❖ A constitution bench typically comprises 5, 7 or 9 judges who deliberate on a specific issue related to constitutional law. Usually, cases before the SC are heard by Division Benches (2 judges) or full Benches (3 judges) to examine a wide range of topics.
- ❖ Under its very broad jurisdiction, the Supreme Court has entertained frivolous public interest litigations (PILs), such as demands that passages be deleted from the Quran or secularism be removed from the Preamble to the Constitution.
- ❖ This is why, at present, there are 79,813 cases pending before the 34 judges of the Supreme Court. It is therefore understandable that there has been demand time and again for a structural change in the top court.
- ❖ Recently, CJI D.Y. Chandrachud announced his intent to create Constitution Benches of varied strengths as a permanent feature of the Court.

### Discourse on a separate Constitution Bench

- ❖ In 1984, the Tenth Law Commission of India proposed that the SC be split into two divisions: the Constitutional Division and the Legal Division. The proposal stated that only issues pertaining to constitutional law would be brought to the proposed Constitutional Division.
- ❖ It was reported that appeals in the top court mostly comprised matters from High Courts that are closer to the Supreme Court. That is, appeals from the Punjab and Haryana High Court, Allahabad High Court, and Delhi High Court formed the major chunk of matters, whereas courts far away from the apex court had fewer appeals filed, due to both difficulties in accessibility and costs.
- ❖ Earlier, in Bihar Legal Support Society case (1986), the SC stated that it was "desirable" to establish a National Court of Appeal that would be able to entertain special leave petitions. This would allow the SC to only entertain constitutional and public law related questions.
- ❖ The 229th Law Commission Report (2009) recommended four regional benches to be located in Delhi, Chennai or Hyderabad, Kolkata, and Mumbai to hear non constitutional issues. It recommended 6 judges from each region at four regional benches take up appellate responsibility, with a Constitution Bench in New Delhi working on a regular basis. By dividing the heavy backlog of nonconstitutional cases among regional

benches, the SC, it said, could “deal with constitutional issues and other cases of national importance on a day-to-day basis.”

### Evolution of SC

- ❖ During colonial times, there were three Supreme Courts: in Bombay, Calcutta, and Madras. SC, as we know it now, was founded on January 28, 1950, under Article 124 of the Constitution, two days after India became an independent, democratic republic. It came into being in Delhi as a result of Article 130.
- ❖ The first Supreme Court included 8 judges, including the CJI. As the workload rose year after year and arrears of cases began to accumulate, Parliament periodically kept increasing the number of judges; the latest being 34 in 2019.
- ❖ An overburdened court Today’s Supreme Court issues around 810 decisions each year through Constitution Benches of five or more judges. It serves primarily as an appeals court. Only 4 of the 1,263 decisions issued in 2022 were issued by a Constitution Bench.

### Way forward

- ❖ SC hears matters between the Centre and the States, as well as between two or more States; rules on civil and criminal appeals; and provides legal and factual advice to the President. Any person can immediately petition the Supreme Court if they consider their basic rights have been infringed.
- ❖ The work of the SC could be split so that there is a Final Court of Appeal and a permanent Constitution Bench. This would ensure greater judicial stability and consistency by explicitly distinguishing cases filed under constitutional authority from those filed under appellate and review jurisdiction. A Constitution Bench (Vasanth Kumar v. H.C. Bhatia case) is analysing these issues and contemplating measures to protect a citizen’s basic right to access the Supreme Court.

### Conclusion

- ❖ Under the guidance of the CJI, there is an opportunity to address this structural gap in the Supreme Court by designating several of the court’s appeal benches as regional benches.

## A NON-STARTER

### Context:

Good intentions do not always make for sound policy. President Droupadi Murmu’s suggestion that the creation of an All India Judicial Service (AIJS) will help diversify the judiciary by allowing bright youngsters from varied backgrounds to become judges through a merit based process revives the debate on whether a national system of recruitment at the district judge level is desirable.

### All India Judicial Service (AIJS) :

- ❖ AIJS is a proposed service at all India level, on same lines as IAS, IPS etc, to recruit and nurture talented individuals into judicial service, ensuring representation from underrepresented social groups.
- ❖ Currently, under Articles 233 and 234 of the Constitution, states manage district judge appointments. State Public Service Commissions conduct recruitment, supervised by High Courts.
- ❖ The idea of AIJS has been part of discussions on official policy in the Union government for years. However, as the Union Law Minister disclosed last year in the Rajya Sabha, there is no consensus on the proposal. Only two High Courts agreed to the idea, while 13 were against it.

### Advantages/ need for AIJS:

- ❖ Clear pendency of cases: The lower judiciary faces about 5400 vacancies and a backlog of 2.78 crore cases.
- ❖ Financial Incentives: State services often fail to attract top talent due to lower salaries.
- ❖ Training and Subjectivity: State-run institutions lack adequate training resources;
- ❖ Prevent favouritism and nepotism in selection of judges: current appointments are marred by subjectivity and nepotism.
- ❖ Ensure quality of justice: The declining quality of judicial officers necessitates a better mode of recruitment.



- ❖ Other advantages: AIJS aims to enhance judicial efficiency, standardise compensation, expedite recruitment, and ensure uniform training.

#### Arguments against AIJS:

- ❖ The AIJS may not be the panacea it appears to be. The current system of recruitment of district judges through the respective High Courts and other subordinate judicial officers through public service commissions is more conducive to ensuring diversity, as there is scope for both reservation and a clear understanding of local practices and conditions.
- ❖ Unlike the civil service, judges are not assisted by an experienced lower bureaucracy in decision making, and they require to be well versed in the issues involved for judicial functioning.
- ❖ Article 312 of the Constitution, as amended by the 42nd Constitutional Amendment, provides for the creation of an AIJS, and requires a resolution adopted by the Council of States with two thirds majority, and a parliamentary law. This Constitution recognises that rules governing the subordinate judiciary in the States will have to be superseded by a central law for this proposal to achieve fruition. It is unlikely that all States will agree to one more subject from their domain being consumed by centralisation.
- ❖ On the face of it, it may appear that a national service for judges not inferior to the post of district judges, with a superannuation age of 60, will be an attractive proposition for young lawyers to apply for it. However, it cannot be forgotten that legal education lacks country wide uniformity.
- ❖ After enrolling, lawyers typically consider judicial service based on practical experience rather than academic brilliance. Toppers, especially from the few elite law schools, are unlikely to sit for a national judicial service recruitment examination. In comparison, options such as litigation, joining law firms and going into the corporate sector will appear more beneficial.
- ❖ Further, given that the number of district judges elevated to the High Courts is much lower than those from the Bar, the lack of certainty on career progression may also render a national judicial service unattractive.

#### Conclusion:

- ❖ The idea of AIJS has been recommended over the years by many law commissions, Parliamentary panels, and recently, by NITI Aayog as well. Parliament and the Supreme Court should together deliberate on the merits and demerits of the same and take a policy decision.

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## INTERNATIONAL

### TAIWAN, A MALACCA BLOCKADE AND INDIA'S OPTIONS

#### Context:

There are limitations to what India can do in the event of a U.S.-China conflict over Taiwan.

#### Introduction

- ❖ With China frequently intimidating Taiwan over the past year through deployment of its air force and navy in the surrounding areas, there is the oft-posed question whether India would take action in the Strait of Malacca or the Andaman Sea in the event of a conflict between the United States and China over Taiwan.
- ❖ Any speculative action in the Strait of Malacca or the Andaman Sea would involve either a naval blockade against commercial shipping or China's key trade and energy sea lines of communication or military action against Chinese naval vessels.

#### Strait of Malacca

- ❖ The Strait of Malacca Connects the Andaman Sea (Indian Ocean) and the South China Sea (Pacific Ocean).
- ❖ It runs between the Indonesian island of Sumatra to the west and peninsular (West) Malaysia and extreme southern Thailand to the east.

#### Constraints in regard to India's options in the Strait of Malacca

- ❖ First, "distant blockades" away from a belligerent nation's geography can be challenged under international law.
- ❖ Second, the trade that passes through the Strait of Malacca is not just China's economic and energy lifeline. An overwhelming volume of the trade of Japan, South Korea and even India itself passes through the same Strait.
- ❖ Third, the channel of the Strait of Malacca is long, nearly 500 miles, and involves the sovereignty of other states such as Indonesia, Malaysia, Thailand and Singapore who would all be affected adversely by a naval blockade. The affected countries are unlikely to support a naval blockade.
- ❖ Fourth, commercial shipping is extremely complex to identify in terms of the sovereignty of the vessel, flag, registration, insurance and ownership of cargo. And these are often multinational in nature and can also be changed as convenient through transshipment at any port in Southeast Asia.
- ❖ Fifth, apart from the fact that it is difficult to interdict China's trade and energy supplies, the additional reality is that even if the Strait of Malacca were "choked", shipping can take a detour either through the Sunda or the Lombok Straits to reach China.
- ❖ Sixth, China also has a huge onshore and floating Strategic Petroleum Reserves (SPR) which can help it tide over disruptions, especially with growing overland energy supplies from Russia and Central Asia.

#### Consequences of Naval blockade

- ❖ A naval blockade or unilateral action against an adversary's naval vessels would tantamount to a declaration of war; at the very minimum, it could lead to a conflict, not necessarily limited to the maritime sphere.
- ❖ Regional countries which are adversely affected by disruption in the Strait of Malacca, including friendly countries, are unlikely to endorse any unilateral action. China would use its permanent seat in the United Nations Security Council and regional influence to good effect to thwart any such effort.

#### Past Learnings

- ❖ It is also relevant to note that in both the First and the Second World wars, a naval blockade and sanctions led to conflagrations.
- ❖ During the First World War, the British blockade of Germany which lasted from 1914-19 saw Germany retaliating against British shipping on the high seas with its submarines (U-boats) with deadly effect.
- ❖ Subsequent developments, including the Battle of Jutland in 1916 and the sinking of U.S. merchant vessels by German U-boats eventually drew the U.S. into the First World War.

- ❖ During the Second World War, the U.S. had embargoed Japan's energy supplies which ran through the maritime commons, which probably played a key role in Japan's decision to launch the attack on Pearl Harbour in December 1941.

### Different conflict scenarios

- ❖ The larger question in the context of the Strait of Malacca that remains to be answered is whether any of India's strategic partners, especially the U.S., would support any interdiction of Chinese vessels in a bilateral conflict between India and China, unless the U.S. itself were involved in a kinetic conflict with China. Even in such a scenario, there is perhaps no guarantee of support by other stakeholders in the region, especially the South-East Asian nations.

### What India needs to do?

- ❖ To the extent that a full-blown U.S.-China conflict over Taiwan sends ripples across the Indian Ocean, India's primary role may be limited to a proactive defence of its territorial interests and the security of its sea lines of communication and those of its strategic partners in the eastern and western India Ocean. In any such eventuality, India's primary focus would remain on its continental borders with China.

### Conclusion

- ❖ India has traditionally faced China's military threats on its borders essentially on its own. The new U.S.-India partnership in the economic, high-tech and military areas is expected to strengthen in the years ahead.
- ❖ The U.S. increasingly regards India as regional ballast for stability in the region. A robust India with a strong economy, nuclear deterrence capability and a credible military can contribute to multi-polarity in the Indo-Pacific.

## THE QATAR DEATH ROW AND INDIA'S OPTIONS

### Context

- ❖ On October 26, Qatar's local court handed down the death penalty to eight former Indian Navy officers. The case has garnered international attention.

### Similar incidents

- ❖ The case shares similarities with other incidents involving the arrest of Indian nationals by foreign authorities.
- ❖ For instance, Kulbhushan Jadhav, an Indian national, was sentenced to death in 2017 in Pakistan on charges of espionage and sabotage. Pakistan accused him of acting at the behest of India's intelligence agency, which India denies.
- ❖ The case proceeded in a military court with no transparency. India moved the International Court of Justice (ICJ), which found that Pakistan had breached Article 36 of the Vienna Convention requiring immediate notification of an arrest to the national's consulate.
- ❖ In a separate incident, Indian Air Force pilot Wing Commander Abhinandan Varthaman's aircraft was shot down by Pakistani fighter jets after he took down a Pakistani F-16 fighter jet.
- ❖ He was captured on the Pakistani side of the Line of Control, but was released about 60 hours later following intense back-channel communications between India and Pakistan.
- ❖ In both instances, the individuals involved were reluctant to disclose their identities, mirroring the present situation.
- ❖ India either mitigated their sentences or brought them back to their home country through diplomatic means.

### India's options

- ❖ India has the option to initiate legal appeals within the Qatari legal system.
- ❖ Espionage is legally defined as the act of collecting or transmitting confidential information or documents to a foreign state or its agents with the intent to harm Qatar's national security or interests.



- ❖ It is noteworthy that Qatar has not disclosed information about the verdict. India can pursue a legal battle with the aim of reducing the sentence to imprisonment.
- ❖ In 2015, India and Qatar signed an agreement pertaining to the transfer of sentenced prisoners. Under the agreement, Indian citizens who are sentenced in Qatar have the choice to serve their prison sentence in their home country.
- ❖ If the legal appeals in Qatar's judiciary do not yield the desired outcome, India could turn to the ICJ as a means of redress.
- ❖ The Vienna Convention on Consular Relations provides the framework for consular relations between sovereign states.
- ❖ The Convention's Optional Protocol grants the ICJ compulsory jurisdiction over disputes arising from its interpretation or application.
- ❖ India has the capacity to initiate diplomatic efforts aimed at resolving the case. The relationship between India and Qatar has yielded significant economic ties. Qatar is the largest provider of liquefied natural gas to India.
- ❖ While India's defence collaboration with Qatar has been somewhat limited, it still offers an avenue for diplomatic engagement.
- ❖ The Indian community represents the largest expatriate group in Qatar.
- ❖ Moreover, a steady stream of Indian artists performs in Qatar at events organised by community associations affiliated with the Indian Cultural Centre.
- ❖ By harnessing these robust ties with Qatar, New Delhi can exert pressure on the Qatari government to adopt a more lenient approach towards the detained individuals, potentially offering them some relief.

#### Way forward

- ❖ Numerous global human rights organisations have been actively combating unlawful imprisonment, capital punishment, and other violations of human rights.
- ❖ Amnesty International, for instance, has consistently championed human rights on a global scale. These organisations also have the potential to mobilise and advocate for the Indian Navy officers who are facing the death penalty.

#### Conclusion

- ❖ This is a challenging diplomatic issue that requires careful consideration and strategic action. India's response should take into account the implications of the Vienna Convention on Consular Relations, international precedents, and the broader context of India-Qatar relations. Whether through diplomatic dialogues, political interventions, legal appeals, or a blend of these strategies, India has the potential to seek a resolution.

## THE GEOPOLITICAL FALLOUT OF THE ISRAEL-HAMAS WAR

### Introduction:

- ❖ The United States, the reigning superpower of the region since the end of the Second World War, had begun shifting its strategic focus to more conventional rivals such as Russia and China. But, to maintain its hold over and interests in the region, what the U.S. sought to do was to bring two of the pillars of its regional policy, Israel and the Gulf Arabs, closer. The Abraham Accords were a result of this policy.

### A common Jewish-Arab front

- ❖ In a relatively peaceful West Asia, a common front would allow the U.S. to free up resources from the region which it could use elsewhere. On the other side, the U.S.'s deprioritisation of West Asia led Gulf Arabs to make their own tactical changes in foreign policy for a more predictable and stable relationship in the region. This opened an opportunity for China.

### Role of China

- ❖ China, which has good ties with countries across the Gulf, played the role of a peacemaker. The result was the Iran-Saudi reconciliation agreement. The U.S.'s response to the Saudi- Iran détente was to double down on the Abraham Accords.
- ❖ The Biden administration invested itself in talks between the Saudis and the Israelis. It was so confident about prospects of a deal that it unveiled the India-Middle EastEurope Economic Corridor (IMEC) proposal earlier this year, which hinged on Arab-Israeli peace deal, and sold it as an alternative to China's outreach into the region, the Belt and Road Initiative (BRI). Then came the October 7 Hamas attack on Israel.

### Re-regionalisation of Palestine

- ❖ Hamas, a Sunni Islamist militant group which has been controlling Gaza since 2007, looked at these two realignments differently. For Hamas, the coming together of Iran, a Shia theocratic republic which also has been its patron for years, and Saudi Arabia, a Sunni monarchy that has been wary of the Hamas brand of political Islam, is a welcome development. But Hamas saw Saudi Arabia normalising ties with Israel, which has been occupying Palestinian territories at least since 1967, as a setback.
- ❖ In 1978, when the Camp David Agreement was reached, Egypt got the Israelis to sign the Framework For Peace Agreement, which became the blueprint for the Oslo process in the 1990s. Jordan signed its peace treaty with Israel only after the first Oslo Accord was signed in 1993.
- ❖ But when the United Arab Emirates (UAE), Bahrain and Morocco signed the Abraham Accords in 2020, Israel did not make any concessions for the Palestinians. This was the clearest sign yet that Arabs were ready to delink the Palestine question from their engagement with Israel, which boosted Tel Aviv's efforts to localise the Palestine issue — to treat it as a mere security nuisance while continuing the occupation without consequences.
- ❖ When Saudi Arabia and Israel were in talks, nobody expected the Benjamin Netanyahu government, the most far right government in Israel's history, to offer concessions to the Palestinians. So, understandably, one of the goals of the October 7 Hamas attack was to break the walls of localisation, re-regionalise the Palestine issue, and thereby scuttle the Saudi-Israeli peace bid.
- ❖ Israel's vengeful onslaught on the Gaza Strip, which followed the Hamas attack, killing at least 11,500 Palestinians, a vast majority of them women and children, made sure that Hamas met its goal, at least for now.

### The way Arabs see it

- ❖ Both the Arabs and Israel were ready to sidestep the Palestine question and chart a new course of partnership. But new regional realities emerged after October 7. The Palestine issue has now come back to the fore of the West Asian geopolitical cauldron.
- ❖ Second, Israel's disproportionate and indiscriminate attack on Gaza has triggered massive protests across the Arab Street, mounting enormous pressure on monarchs and dictators.
- ❖ Third, there is always the Iran factor. Ever since the Palestine issue got re-regionalised, Iran has stepped up its proPalestine rhetoric and called for collective action against Israel, while its proxies, the Houthis in Yemen and Hezbollah in Lebanon, have launched limited attacks on Israel. Iran is trying to claim the leadership of the Islamic world, bridging the ShiaSunni divide.
- ❖ Mohammed bin Salman, the Saudi Crown Prince, has relinked the Palestine issue with peace talks with Israel. This is a setback for both America and Israel. The U.S. might still hope that the situation would be conducive to reboot the Abraham Accords once the dust settles. This is entirely possible.
- ❖ But a key challenge is that it is still not clear what Mr. Netanyahu's endgame is in Gaza. He has already signalled that Israeli troops would continue to play an overall security role in the enclave — which means, Israel would reoccupy the territory from where it withdrew in 2005.
- ❖ The U.S. had proposed that post the war, the Palestinian Authority, which runs parts of the West Bank with limited powers, should take over Gaza as well. But Mr. Netanyahu has shot down that proposal.
- ❖ So, if Israel reoccupies the territory, home to 2.2 million people living in distress and misery, the current wave of violence would only be the beginning of a long spell.

### Regional dynamics

- ❖ The Iran-Saudi reconciliation, under Chinese mediation, itself was a setback for the U.S. In recent years, Arab countries have also shown an increasing hunger for autonomy. The UAE and Saudi Arabia refused to join American sanctions against Russia after the Ukraine war.
- ❖ Saudi Arabia continued its Organization of the Petroleum Exporting Countries (OPEC) Plus cooperation with Moscow, defying Washington's requests and diktats.
- ❖ China is playing an increasingly greater role in the Gulf, which includes secret plans to build a military facility in the UAE. The current crisis is expediting these changes in the regional dynamics

### Conclusion

- ❖ The situation in Gaza is effectively back to the pre-2005 days, but the geopolitical reality is entirely different from the early 2000s when the U.S. was the sole superpower in the region. Russia and China may not replace America in West Asia in the near future given the U.S.'s huge military presence, but the growing footprint of other great powers is offering space for better manoeuvrability for regional players.

## INDIA, JAPAN CONVERGE IN SOUTHEAST ASIA

### Context:

- ❖ Upon dropping a series of Chinese-led infrastructure projects due to sustainability and geopolitical concerns, the Philippines is now redirecting its attention to Japan and India as alternative sources of development and security.

### India and Philippines strategic ties

- ❖ Manila now shows the desire to deepen and broaden its security and economic partnerships with like minded partners amidst Beijing's growing unwillingness to act and behave like a responsible neighbour.
- ❖ Under the leadership of President Ferdinand Marcos Jr., Philippines has been steadfast in securing its sovereignty and sovereign rights in the West Philippine Sea against China's revisionist interests in the Indo-Pacific (IP) Region.
- ❖ Accordingly, Manila's attribution of both Tokyo and New Delhi as important partners allows all three democracies to explore new opportunities for multifaceted strategic cooperation.
- ❖ Bilateral partnership between the Philippines and India has witnessed noteworthy advancements as Manila is now more willingly incorporating New Delhi in its strategic calculations.
- ❖ The recent signing of a Memorandum of Understanding (MoU) between the Philippine and Indian Coast Guards will allow both sides to improve their interoperability, intelligence sharing, and maritime domain awareness. India has also offered to supply the Philippine Coast Guard with seven indigenously manufactured helicopters based on a soft loan agreement with extended payment terms. This comes at the heels of the BrahMos supersonic cruise missile delivery to the Southeast Asian country later this year.
- ❖ Thus, Japan and India's bolstered engagements in Southeast Asia complement the interest of resident countries like the Philippines to lessen their susceptibility to China's expanding economic clout and deepening power projection capabilities.
- ❖ Forging robust ties with friendly regional powers is crucial to Southeast Asian countries' hedging strategies, especially as the U.S.-China competition continues to intensify.
- ❖ As per the State of Southeast Asian Survey of 2023, Japan and India are the top two choices of Southeast Asian countries for alternative Indo-Pacific strategic partners. Therefore, the contemporary structural conditions serve as an opportunity for Japan and India to operationalise their shared vision for the IndoPacific.

### India-Japan Special Strategic and Global Partnership

- ❖ is best defined through the robust ties they share. In terms of security, New Delhi and Tokyo constantly engage in varied platforms ranging from regular bilateral military exercises and 2+2 meetings to multilateral frameworks such as the Quad and the G20.
- ❖ Both countries share similar threat perceptions — an increasingly assertive and disruptive China. Beyond defence cooperation, New Delhi and Tokyo have also embarked on a third country cooperation model in the Indo-Pacific and beyond.



### **Asia Africa Growth Corridor (AAGC): an example of third country cooperation model:**

- ❖ In 2017, Indian Prime Minister Narendra Modi and his former counterpart Shinzo Abe welcomed collaborative efforts in establishing industrial growth and development networks across Asia and Africa, creating the AAGC.
- ❖ While the project eventually slowed down due to geopolitical turbulence and the economic constraints posed by the COVID19 pandemic, both countries have recently explored new third country cooperation models throughout the region.
- ❖ Among them are the emerging trilateral partnerships between India, Japan, and Bangladesh and a similar framework between India, Japan, and Sri Lanka.

### **Conclusion**

- ❖ As India is significantly deepening and broadening its ties with Southeast Asian countries, such as the Philippines, New Delhi should consider taking its third country developmental model with Tokyo into the subregion of the greater IndoPacific at a time when resident countries are looking for alternative sources of development and security amidst the polarising dynamics of the U.S. China power competition.

## **THE MANY GRAVE RISKS CONFRONTING THE WORLD TODAY**

### **Introduction**

- ❖ Europe, Asia, and Africa seem to be in a state of permanent dissonance today, while North and South America are plagued by problems of varying magnitude. All this has set the stage for multipolar disorder.

### **Multipolar disorder**

- ❖ The attack on the State of Israel by Hamas, a Palestinian terror outfit, however, represents a new high in the evolution of terrorism. That a little acknowledged Palestinian terror outfit could take on Israel, which boasts of one of the most powerful armies in the world, is having a seismic impact across the world. Hence, there appears to be no end in sight to the challenges posed by fanatic groups intending to achieve their ends and reinforce their beliefs.
- ❖ The attack on Ukraine by Russia starting February 2022, though, falls into a different category, viz., of conventional conflicts, but is nevertheless highly disconcerting. The prolongation of the conflict, which was not expected to last for more than a few weeks, to well over 18 months, represents an even more disturbing trend.
- ❖ Even as the war continues to fester, neither Russia nor Ukraine (including NATO) is willing to consider a pause. A plethora of new technologies and strategies have proved insufficient to sort out matters on the battlefield. With each month, the risk of a wider conflagration is going up, and the conflict shows few signs of reaching a resolution.
- ❖ A new battleground has opened up very recently in West Asia, following the terror attack by Hamas on Israel, which is turning into an all out conflict. Several weeks into the conflict, the threat of an all out war (in a region that has seldom had long periods of peace) looms large. The two state solution for resolving the Palestinian conflict has, in turn, been confined to the detritus of history and the region is all set for another half a century of conflict.
- ❖ Abraham Accords and other peace accords have fallen like ninepins. A massive United States Naval deployment, from the Mediterranean to the Gulf of Oman, in the wake of the Hamas-Israel conflict, has the potential of bringing Iran- backed Shia militant organisations (such as the Hezbollah) directly, and Iran at a later date, into the conflict. This would substantially alter the nature of the conflict and could lead to unpredictable consequences.

### **Uneasiness in the Indo-Pacific region**

- ❖ Notwithstanding the West Asia imbroglio, it is the uneasy situation in the IndoPacific region that contains even greater potential for a wide ranging conflict — one that could well involve the U.S. and China directly. This region is already a byword for strategic competition and contestation.

- ❖ As it is, the U.S. and China have little space for cooperation here, as elsewhere, but both now seem intent on enlarging the scope of their conflict. The U.S. appears to think that with China's growth having slowed, accompanied by its inability to get advanced technology from the West, it now has the upper hand.
- ❖ China, for its part, is vigorously pursuing its two contradictory goals viz., to checkmate the 'U.S.-dominated world order' and in turn ensure the success of a China-dominated order. Issues such as Taiwan are, hence, not receiving the attention they deserve.
- ❖ As of now, the West is merely intent on replicating the tactics it employed in Ukraine to stymie Russia's advance, in the IndoPacific, ignoring the fundamental difference that exists between the situation in Europe and in the IndoPacific at present.
- ❖ The East, for instance, has no military arrangement like the NATO and has at best some loose untested security arrangements (such as AUKUS and the Quad) to confront China. Equally important is that few countries in Asia are ready for a military confrontation with China.

### Technology risks

- ❖ Additionally, in the category of grave risks that confront the world today are many that belong to the technology domain — more specifically Artificial Intelligence (AI) and cyber. Even as the digital threat scene has verily exploded, digital uncertainty is making a mockery of the established order.
- ❖ As growing numbers of people, cognitively and psychologically, become dependent on digital networks, many critical aspects of their thinking and functioning would be conditioned by AI. The emergence of generative AI will be the real game changer, and experts predict that the situation could become even more critical in the near future. The real risk is that it could alter the very fabric of nation states, with truth itself becoming a casualty — the deepfake syndrome.
- ❖ The use of AI, especially for military and security purposes, is cause for utmost concern. AI is capable of being vitiated, and subject to different types of 'adversarial attacks' viz. 'poisoning' (which typically aims to degrade a module's ability to make relevant predictions), 'backdooring' (which involves a malicious trigger input that causes the AI module into misclassifying inputs), 'evasion', etc.
- ❖ The need for extreme caution, hence, cannot be overemphasised. The cyber domain and the cyber threat again pose serious security risks. The world is already aware of threats such as Ransomware and Phishing, as also the Zero day syndrome, but there is much more to come.
- ❖ Digital trackers logged more than 5.5 trillion cyberattacks worldwide in 2021 (over 14.5 billion attacks per day). Since then, the scale of attacks has been increasing in geometrical progression. The twin threats from AI and cyber are thus poised to emerge as the biggest dangers we face and will be the critical elements in future wars.
- ❖ Meanwhile, quantum computing is another dimension that is likely to transform the world. Quantum's unique ability to crunch stacks of data is already reshaping certain designated sectors. Quantum AI simulation denotes a mind boggling degree of effectiveness and efficiency but there are equally intrinsic risks attached to it.
- ❖ Another domain of global risk is health, for as humanity advances, health has become a critical factor of everyday existence. The COVID-19 pandemic has been characterised as among the world's worst epidemics. The health forecast is that more such epidemics are slated to occur.

### Conclusion

- ❖ In the final reckoning, many experts are of the view that climate change and climate change health issues will be among the biggest global risks as the 21st century advances

## SOCIAL ISSUES

### IMPACTING A WOMAN'S FREEDOM TO REPRODUCTIVE CHOICES

#### Context

- ❖ On October 16, in *X vs Union of India*, the Supreme Court of India declined permission to a woman who was seeking to terminate a 26 week-long pregnancy.

#### About

- ❖ A Bench presided over by the Chief Justice of India (CJI), D.Y. Chandrachud, held that the woman's case fell outside the scope of the Medical Termination of Pregnancy (MTP) Act, 1971. The Court said the statute permitted the termination of pregnancy beyond 24 weeks only in cases where the foetus exhibited substantial abnormality, or where the woman's life was under direct threat.

#### Viable foetus versus woman's right

- ❖ The judgment falls short of bestowing any explicit rights to the unborn. But the upshot of its conclusion is just that: when a foetus becomes viable, and is capable of surviving outside the mother's uterus, the woman's right to choose stands extinguished, barring circumstances where the specific conditions outlined in the MTP Act are met.
- ❖ In so holding, the judgment suffers from at least two errors. The judgment does not engage with these questions and, as a result, places the rights of a foetus at a pedestal, above that of the rights of a pregnant woman to her privacy and dignity.
- ❖ Second, the Court fails to examine whether the MTP Act is merely an enabling legislation. Had these questions been posed and answered, the Court may well have considered whether a woman ought to be allowed to terminate her pregnancy outside the terms spelled out in the legislation. If the right to freely make reproductive choices is fundamental, flowing from the Constitution, the Court ought to scarcely feel enjoined from issuing directions beyond the MTP Act's remit.

#### Foetuses and rights

- ❖ Even more damaging, though, is the judgment's implicit assertion that foetuses have constitutional rights. Our jurisprudence on abortion has been built on a converse premise. The guarantees of Articles 14 and 21 of the Constitution — the rights to equal protection and life — are conferred on persons, and the Constitution decidedly does not award personhood to a foetus. As it happens, even the MTP Act makes no such assertion. For if it did, it could not plausibly create an exception from the timelines it stipulates to cases where a pregnant woman's life is under immediate and direct threat.

#### Conclusion

- ❖ There is no place within our constitutional structure to see a foetus as anything but dependent on the mother. To see it as a separate, distinct personality would be tantamount to conferring a set of rights on it that the Constitution grants to no other class of person. Such a reading would efface altogether a jurisprudence that grants primacy to a woman's freedom to make reproductive choices — a right that is intrinsic in Articles 14 and 21 of the Constitution.

### LOW ON SALT: TURNING THE SPOTLIGHT ON KIDNEY DONORS

#### Context

- ❖ There is a great deal of attention paid to the recipient of an organ transplant, and rightly so, but the backbone of live kidney transplantation for transplant surgeons is also to make sure that donors do not face the same problem in the future.

#### Before the donation

- ❖ Before donating the donor is fully evaluated to make sure the person is completely normal. Age-matched kidneys may be ideal but usually 18 to 60 years is accepted. Between 60- 70 years, an exceptional kidney



function and health may permit donation. Blood group matching is usually required but O can donate to any group.

- ❖ Minor ailments may not be a contraindication for donating. Diabetes or pre diabetes, obesity, hypertension, kidney stones, etc. require special attention. Medical evaluation is always biased in the donor's favour. Diabetes in the donor is usually an absolute contraindication. Hypertension with easy control with a single tablet is permitted.
- ❖ It is also essential that the kidney function on special test is at least 75 ml per minute. There should be no protein leak. Metabolic workup in persons having small stones is a must. Those with multiple stones should be rejected. Normally the evaluation should favour the donor and the better working kidney should be left behind with the donor.

### After the donation

- ❖ After the donation the person requires life long follow-up. Immediately after the surgery the kidney function drops by almost half and the single kidney starts working more to compensate for the loss of the other. This is a process of hyperfiltration at the microscopic level and compensatory hypertrophy at the gross level.
- ❖ Donors require to periodically monitor blood pressure. Kidney function and protein loss should be checked at least once a year. Almost one third of donors would develop hypertension over several years but this is almost the same incidence as in the general population. A small percentage would develop protein leak in the urine.
- ❖ It is essential that the donors are instructed properly with regards to diet, exercise and avoidance of drugs toxic to the kidneys. DASH diet (dietary approaches to stop hypertension) would be ideal. Sufficient vegetables, fruits, whole grains, lean meat, moderate restriction of salt and sugar, and avoidance of trans fats is essential.

### Salt and Kidney

- ❖ The WHO and other medical associations caution on the importance of salt restriction to 5 gms per day in the general population. The 5 gms includes salt present in natural food, salt added during cooking and hidden salt present in preserved or packed food like bread and noodles. Restriction of salt reduces not only blood pressure but also strokes and kidney failure.

### Calculating kidney function

- ❖ Creatinine is produced by muscles in the body and excreted by the kidneys. Since normally only kidneys remove the creatinine, its measurement in blood reflects kidney function.
- ❖ Mathematical formulae adjusting for age, weight and sex are used to calculate kidney function and express as eGFR (Glomerular function rate).
- ❖ Proteinuria or protein leak is a more sensitive test and 85% of the kidney diseases are detected earlier than creatinine estimation. Protein has a large molecular weight and does not appear in the urine unless the microscopic vessel (glomerulus) in the kidney is damaged or it is secreted by tubules.
- ❖ The quantity of protein loss in the urine reflects the kidney damage and is used as a measure to see the response for treatment.
- ❖ Proteinuria unlike creatinine is not only a marker of kidney disease but also a cause for progression of kidney disease.
- ❖ This understanding has led to the development of several groups of drugs which would lower protein loss to reduce damage to the kidneys. They include the anti renin system (ACE and ARB) group of drugs, the SGLT2 inhibitors, anti aldosterone drugs etc.

### Conclusion

- ❖ A recent study from MIOT international on the salt intake in renal donors has highlighted the importance of monitoring salt intake in kidney donors. Chronic Kidney disease (CKD) affects almost 10% of the world's population. So it is essential to detect CKD early and intervene to halt the disease. It is high time we realise the importance of this, and implement salt reduction globally.

- ❖ The Indian Institutes of Technology (IIT) are globally recognised as the crown jewels in India's higher education system. Indeed, they are often the only Indian higher education institutions known internationally at all. They have produced leaders in high tech and related fields in India and abroad. The IITs may be the most difficult higher education institutions to gain entry in the world. Yet, the IIT system is in serious trouble at the same time that some of them are building campuses abroad as part of India's soft power efforts. It is worth taking a careful look at current realities to understand a looming crisis.

### Foreign adventures

- ❖ A branch campus of IIT-Madras has just opened in Zanzibar and IIT Delhi will be launching programmes from its Abu Dhabi campus in 2024.
- ❖ Some of the screening test centres offered to potential applicants were located not only in Tanzania but also in Ethiopia, Nigeria, Kenya, Uganda and the United Arab Emirates (which has a strong presence of the Indian diaspora).
- ❖ Initially the Zanzibar campus is offering only two programmes: a Bachelor's Degree (BS) in Data Science and Artificial Intelligence and M. Tech in Data Science and Artificial Intelligence. They are open to students from across the globe.

### Overexpansion at home

- ❖ The first IIT was established in 1950 at Kharagpur in West Bengal, with four more following in a decade.
- ❖ Most of these partnered with top foreign technological universities in the United States, the Soviet Union, the United Kingdom and Germany to get started, and they quickly achieved both excellence and top reputations.
- ❖ They hired Indians trained at the best foreign universities who were eager to contribute to national development.
- ❖ After 2015, the government expanded the IIT system, adding seven institutions in the following decade, most located away from major metropolitan centres.
- ❖ These new IITs have struggled to meet the high standards of the traditional institutes.

### Faculty challenges, future prospects

- ❖ At the heart of any academic institution are the professors. Attracting the best and the brightest is increasingly difficult.
- ❖ Salaries are dramatically below international standards.
- ❖ Foreign trained Indians are generally reluctant to return to uncompetitive salaries, often inferior work environments, and more academic bureaucracy.
- ❖ Top Indian talent is increasingly attracted to the burgeoning IT sector, emerging biotech, and related fields — and not to academe — both within India and abroad.
- ❖ It would not be an exaggeration to say that the IITs are in crisis.
- ❖ Building quality in the new IITs is a significant challenge, and in the long run if this is not done, the prestige of the entire system will suffer.
- ❖ Maintaining faculty quality and attracting young professors committed to the IIT idea and to India's development are both serious tasks.

### Way forward

- ❖ Expanding the system domestically may not have been a wise idea — and building overseas branch campuses is highly problematical. One might question if overseas expansion is a good idea under any circumstances, but in the context of the domestic challenges facing the system, such expansion seems particularly ill-considered.

## THE ZIKA GENOME AND INSIGHTS INTO THE ERA OF EMERGING OUTBREAKS

### Introduction

- ❖ The dengue virus and its equally infamous cousin, the Zika virus, together infect up to around 400 million people every year. The Zika virus and genomic studies of it have opened fascinating windows into our knowledge of the infectious disease and its relevance in the context of emerging outbreaks.

### The Zika virus

- ❖ The Zika virus is a mosquito-borne flavivirus.
- ❖ Most infections in humans are asymptomatic or with mild symptoms, including fever, rash, and joint pain.
- ❖ The outbreak was characterised by an alarming increase in the number of microcephaly cases in newborns, prompting the World Health Organisation to declare it a public health emergency of international concern in early 2016.
- ❖ From Africa, the Zika virus has spread to Asia, Pacific islands, to the Americas, and beyond. The disease has of late been in the headlines with multiple outbreaks in the last few years in multiple Indian states, including, more recently, Kerala and Karnataka.
- ❖ A significant number of insights have come from the Zika virus's genome.
- ❖ Researchers sequenced the complete genome first in 2007. It has more than 10,000 bases of single-stranded RNA.
- ❖ **The genome is also peculiar:** it encodes for a large polyprotein, which is further cleaved into capsid, membrane precursor (prM), envelope, and seven non-structural proteins.
- ❖ The diagnosis of a Zika virus infection is mostly through genetic testing.
- ❖ An antibody-based test would be complicated because antibodies produced by the infection can cross-react with those of the dengue (DENV), yellow fever, and West Nile viruses.

### Epidemiology and surveillance

- ❖ The Zika virus has an RNA genome, and thus a very high potential to accumulate mutations. The tools, techniques, and modalities we've developed to track the evolution, genetic epidemiology, and molecular underpinnings of transmission and pathogenesis could be extended to Zika virus outbreaks as well.
- ❖ Genomic studies have suggested that the Zika virus has two lineages: African and Asian.

### Zika and microcephaly

- ❖ The small heads of children born to infected mothers has been one of the more alarming complications of a Zika virus infection.
- ❖ Earlier, based on studies with mice, researchers had suggested that a mutation in one of the precursor membrane proteins, called prM, of the Zika virus was associated with microcephaly.
- ❖ However, while the large outbreak in South America was caused by lineages of the virus with the specific mutation, only a subset of the relevant pregnancies resulted in microcephaly.
- ❖ The Zika-microcephaly hypothesis also suffered when researchers recorded microcephaly in Thailand following infections of the Asian lineage of the Zika virus that lacked the mutation.
- ❖ Foetal Zika virus infections were associated with heavy viral loads during pregnancy, and the viral load strongly influenced foetal growth.
- ❖ Taken together, the findings underscore the importance of the viral load and DENV infections for the occurrence of microcephaly.

### Making it attractive

- ❖ Zika virus and DENV infections are interesting in their own right.
- ❖ In a recent study in Cell that infections of two viruses in primates encourage specific microbes to grow on the skin by suppressing an antimicrobial peptide, RELM, on the skin.
- ❖ These microbes produce acetophenones, which are volatile molecules that could provide a chemical cue to mosquitoes, attracting them towards the individual and supporting forward transmission of the viruses.
- ❖ The researchers also reported that administering isotretinoin could upregulate RELM and reverse this phenomenon.

### Conclusion

- ❖ Zika virus and DENV interactions have also been an interesting area of research.



- ❖ A significant body of evidence suggests that a Zika virus infection can significantly increase the risk for severe dengue.
- ❖ As climate change helps drive the spread of vector borne diseases, and global warming brings environmental conditions that favour them to new places, our genomic technologies and such deep insights into the molecular pathogenesis of these viruses will be an important guiding light.

## WOMEN IN RED

### Context: A menstrual hygiene policy should provide a range of services

#### Introduction

- ❖ Only in an 'unseeing' world would the judiciary need to set the government a deadline to do the obvious. The Supreme Court of India gave the Centre four weeks to finalise an optimum menstrual hygiene policy with focus on the distribution of sanitary napkins.

#### Directions by the Chief Justice of India

- ❖ The Chief Justice of India, D.Y. Chandrachud, further directed the government to set down a national model for the number of girls toilets per female population across government-aided and residential schools in the country.

#### India and Menstrual hygiene

- ❖ Menstruation is the reality for women of a particular age demographic, naturally involving a substantial percentage of half the population in the country.
- ❖ It is only now, over three quarters of a century after Independence, that India has come closest to even drawing up a menstrual hygiene policy.
- ❖ While advancements over the years, and expanding urbanisation, have brought menstrual hygiene products within reach of a larger group of young women, affordability is still an issue; access hurdles stand in the way of a wide swathe of women in semi-urban and rural areas.

#### Effects of poor Menstrual health

- ❖ Poor menstrual health can affect school attendance, performance, and retention of girls and transgender students due to lack of facilities, products, information, and support.
- ❖ It can lead to infections, irritation, dermatitis, alteration in pH balance, and increased risk of cervical cancer.
- ❖ This has an effect on the sexual and reproductive health and rights of women, girl students drop out of school, are pushed into child marriage, and are more like to experience domestic violence, infections, reproductive illnesses, malnourishment, and poor mental health.
- ❖ It can affect the productivity, income, and career opportunities of women.
- ❖ Important data points and findings from National Family Health Survey-5
- ❖ As per the latest National Family Health Survey-5 (NFHS), 73% of rural women and 90% of urban women use a hygienic method of menstrual protection.
- ❖ There was a significant improvement in the percentage of women aged 15-24 who use a hygienic method of protection during their menstrual cycle, this rose from 58% in NFHS-4 to 78% in NFHS-5, primarily sanitary napkins, cloth and locally prepared napkins.
- ❖ The survey also revealed the close link between education and preference for hygiene — women who have received 12 or more years of schooling are more than twice as likely to use a hygienic method compared to those with no schooling.
- ❖ An irrefutable link has been established between menstruation and dropping out of school, because of stigma, and patchy or no access to sanitation (in terms of access to products, toilets and water).

#### Way forward

- ❖ A policy is only half a revolution; to complete the circle, it is crucial the government ensures access to affordable menstrual hygiene products for all menstruating girls, but also clean toilets and water wherever the women may need them.

- ❖ Besides, the policy should also cater to the entire lifecycle of menstruation, providing for the entire range of health and social sequelae that result from it. The government must see, cognise, and commit to serve India's women.

## REMISSION OF DIABETES, DESIRABLE, BUT NOT ESSENTIAL

**Context:** It may not be possible to make India 'diabetes free', but a 'diabetes complications free India' is within reach.

### Introduction

- ❖ The concept of a reversal of diabetes has become very popular recently. Several commercial organisations have jumped on the bandwagon of a 'reversal of diabetes' and are making tall claims. Therefore, it is important to consider the pros and cons of a reversal of diabetes.

### ❖ Diabetes

- ❖ Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces.
- ❖ Insulin is a hormone that regulates blood glucose. Hyperglycaemia, also called raised blood glucose or raised blood sugar, is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the body's systems, especially the nerves and blood vessels.

### Type 1 diabetes

- ❖ Type 1 diabetes (previously known as insulin-dependent, juvenile or childhood-onset) is characterized by deficient insulin production and requires daily administration of insulin. In 2017 there were 9 million people with type 1 diabetes; the majority of them live in high-income countries. Neither its cause nor the means to prevent it are known.

### Type 2 diabetes

- ❖ Type 2 diabetes affects how your body uses sugar (glucose) for energy. It stops the body from using insulin properly, which can lead to high levels of blood sugar if not treated.
- ❖ Over time, type 2 diabetes can cause serious damage to the body, especially nerves and blood vessels.
- ❖ Type 2 diabetes is often preventable. Factors that contribute to developing type 2 diabetes include being overweight, not getting enough exercise, and genetics.

### 'Remission' of diabetes

- ❖ First, the term 'reversal' of diabetes is scientifically incorrect; the appropriate term is 'remission' of diabetes. Reversal implies that the condition has permanently reverted to normal and a cure has been achieved. 'Remission' implies that diabetes has only gone away temporarily. We know for instance that cancer can go into remission, but can come back in a more virulent form.

### Remission and type 2 diabetes

- ❖ Diabetes is not a single condition but consists of several types. When we talk of remission of diabetes, we are referring most often to type 2 diabetes. However, there are other forms of diabetes such as type 1 diabetes where long-term remission is very unlikely to occur.
- ❖ There are certain individuals with type 2 diabetes who are more likely to achieve remission. This can be identified by the letters ABCDE.
- ❖ A refers to A1c (glycated haemoglobin) which should not be very high;
- ❖ B refers to Body Mass Index (BMI) or body weight. If it is high, you are more likely to achieve remission due to weight loss;
- ❖ C stands for C-Peptide, a measure of insulin secretion. If it is good, you can achieve remission more easily;
- ❖ D stands for Duration of diabetes; the shorter the duration, the greater the chances of remission; and
- ❖ E stands for an Enthusiastic individual who is keen to achieve remission.

### Good Legacy Effect

- ❖ One should remember that even if one achieves remission of diabetes only for a few months or years, it is still worthwhile because it leads to a good 'legacy effect' which provides protection from complications caused by diabetes.

### Data on India

- ❖ According to our recent Indian Council of Medical Research–India Diabetes (ICMR-INDIAB) study, there are currently 101 million people with diabetes and 136 million people with prediabetes in India.
- ❖ In those with prediabetes, preventing the majority of these individuals from developing diabetes for a considerable number of years is possible with just lifestyle modifications.
- ❖ In those who already have diabetes, we should, of course, try to achieve remission of diabetes. But if this is not possible, meeting the ABCD guidelines of the treatment of diabetes will ensure that they can all live a long and healthy life without any diabetes-linked complications.

### Conclusion

- ❖ Even though we may not be able to make India 'diabetes free', my dream is that we can at least have a 'diabetes complications-free India'. On the occasion of World Diabetes Day (November 14), let us rededicate ourselves to achieve this dream.

## LIFE OVER DEATH

### Context

- ❖ Amid the cooler headline inflation, food price pressures pose a risk.

### The rise in prices

- ❖ In October, India's consumer price inflation eased to a four-month low of 4.87%, while wholesale prices declined year-on-year for the seventh successive month by a minor 0.5%.
- ❖ Although only marginally lower than the 5% retail inflation in September, October's price rise pace — which is exactly the same as that in June — surely represents some relief for the third successive month from July's 15-month high pace of over 7.4%.
- ❖ Rural consumers still face a higher inflation of 5.1%, though.
- ❖ Core inflation, which excludes energy and food costs, has eased further and household services inflation dropped below 4% after several months above.
- ❖ The rise in prices of vegetables, which had surged over 37% in July, eased to 2.7% in October.
- ❖ However, the overall uptick in food costs for households stayed firm at 6.6%, virtually unchanged from September, as other essential edibles saw faster price hikes or remained at elevated levels.
- ❖ Some of these — like pulses (up 18.8%) and cereals (10.7%) — may be attributed to worries about the kharif output and uncertain rabi prospects as well as hikes in minimum support prices for crops.
- ❖ Pulses prices were up 19.4% at the wholesale level, signalling that more pass-through to retail prices is likely.

### The committee

- ❖ The Monetary Policy Committee of the Reserve Bank of India, which meets early December for its next review, will not be too swayed by the October tidings.
- ❖ As per its 5.6% average inflation projection for this quarter, down from 6.4% in the previous quarter, November and December may well see an average inflation of 5.95%, fractionally short of the central bank's upper tolerance threshold.
- ❖ Excluding edible oils, whose 13.7% year-on-year drop in prices played a key role in moderating the Consumer Price Index, would have meant a 5.6% rise in prices.
- ❖ Base effects from last year, when the Ukraine conflict had spiked edible oil prices, will start to dissipate in coming months.
- ❖ Similarly, while the 6.8% inflation recorded in October 2022 helped cool price rise last month, those base effects will surely ebb this month.
- ❖ Retail inflation had eased to 5.88% last November, with the food price index rising just 4.7%, from 7% in the previous month.



- ❖ Households that seem to have adjusted to the continuous recent rise in living costs, by pulling back on discretionary spends and downsizing essential consumption as per industrial output trends, are likely to remain cautious rather than loosen their purse strings anytime soon.

### Conclusion

- ❖ For an economy whose resilience relies on its domestic demand buffer against global shocks, reluctant or budget-cramped consumers are the biggest headwind for policymakers to strive to address

## MAKING PUBLIC EDUCATION INCLUSIVE

### Context

- ❖ A recent study by IIM Ahmedabad's Right to Education Resource Center confirmed that parents lack trust in government schools due to poor quality of education and prefer to admit their children into private schools even if that means spending significantly more on tuition and other fees.

### Case study

- ❖ However, the Odisha government's revolutionary reforms in the State's public education sector through the Odisha Adarsha Vidyalayas (OAV), the 'Mo School' Abhiyan, and the 5T High School Transformation Programme are on their way to making government schools better than private schools in all parameters — infrastructure, affordability and quality.

### English medium education

- ❖ Education World India School Rankings 2022-23 ranked the OAV in Polasara block of Ganjam district the 5th best school in the government run day school category, and two more OAVs among the top 10.
- ❖ In order to address the struggle faced by students in securing admission to the Kendriya Vidyalaya (KV) schools after the first standard, the OAVs provide admission at the secondary stage.
- ❖ Odisha's OAV model aims to bridge the rural urban gap by providing accessible, qualitative and affordable English Medium education. There are 315 English medium coed OAVs in all 314 blocks in rural and semi urban areas of Odisha as of now. They ensure representation for Scheduled Caste, Scheduled Tribe, and female students through reservations. This has led to a higher enrolment of female students compared to males.
- ❖ Many vulnerable children who had been victims of child abuse, trafficking, child labour, and child marriage were rescued and prepared for the OAV entrance in 2021. OAVs also provide different types of coaching facilities to enable students to crack national level tests.
- ❖ OAVs have promoted social equity by providing a level playing field to students from rural and poor socioeconomic backgrounds. To address pedagogical gaps, the OAV model focuses on continuous teacher education programmes and maintains a teacher pupil ratio of 1:25.
- ❖ It has also leveraged digital technology to enhance the accountability and transparency of the system. The Enterprise Resource Planning system and OAV Sangathan website help track the academic and nonacademic progress of each child alongside monitoring the performance of each school, enabling timely strategic interventions.
- ❖ Plans are afoot to transform the OAVs into scientifically upgraded Centres of Excellence (CoEs) to foster an ecosystem of innovation and inquiry driven learning.

### The alumni connect

- ❖ In 2017, Odisha launched the Mo School Abhiyan, a one-of-its-kind initiative that strives to motivate and mobilise the alumni community to contribute towards revamping the government schools in Odisha.
- ❖ Founded on five pillars — connect, collaborate, contribute, create and celebrate — the programme connects the schools with alumni from various fields and promotes alumni mentorship for the students. School Adoption Programme (SAP), under the above programme, enables the alumni to make financial contributions to the schools adopted by them.

### High school transformation

- ❖ The 5T High School Transformation Programme is rooted in the 5T concept of transparency, technology, teamwork, and timeliness leading to transformation. Launched in 2021, the programme focuses on the adoption of educational technology, in the form of smart and digital classrooms, e-libraries, modern science laboratories, improved sanitation facilities, and sports facilities in all high schools.
- ❖ The programme also caters to the needs of specially abled children. It provides assistive devices and tailored teaching learning materials for students with autism, cerebral palsy, and intellectual disabilities.
- ❖ The government has also launched campaigns like 'Mo School Hockey Clubs' and 'Football for All', thus enabling holistic development of students' personalities.
- ❖ This proactive approach to transforming the education system has led to an unprecedented shift in enrolment patterns. In 2019-20, private schools had 16 lakh students; in 2021-22, this number dwindled to 14.6 lakhs. Currently, 81% of students in the State are studying in government schools.

### Conclusion

- ❖ The interventions by the Odisha government have ensured that education is treated as a public good in essence and spirit and have created a strong legacy of an education model founded on equality and excellence. This model can be followed at the national level.

## RECOGNISING THE IMPACT OF CLIMATE CHANGE ON HEALTH

### Context:

- ❖ As India gets ready for the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP28), it is important to examine how climate change affects the country's health.

### Climate change and health systems in India

- ❖ India's inadequate health systems make our population particularly vulnerable to the impact of climate risks on health. Climate change affects health directly, causing more sickness and death. In more indirect ways, it affects nutrition, reduces working hours, and increases climate induced stress.
- ❖ All nations during the Paris Agreement agreed to cap the rise in temperature at 1.5°C. Clearly, we have failed. The year 2023 saw the highest temperatures and heat waves in recorded history.
- ❖ Climate emergencies — extreme heat, cyclones, floods — are expected to occur with increasing regularity. These will interfere with food security and livelihoods and sharpen health challenges.
- ❖ As per the latest report of UNFCCC (2023), the world is already on the path to cross the Paris climate deal threshold soon. One estimate suggests that if global temperature were to rise by 2°C, many parts of India would become uninhabitable.

### Double burden

- ❖ The double burden of morbidity that India faces from communicable and noncommunicable diseases (NCDs) will be worsened by climate change. Heat also alters the virulence of pathogens.
- ❖ It could facilitate the growth of vectors such as mosquitoes, sandflies, ticks, and as yet unknown ones, and change the seasonality of infection through changes in their life cycle. It could also facilitate the introduction of vectors and pathogens into areas where they did not exist before, such as mosquitoes in the Himalayan States.
- ❖ Reduced availability of food and water and the decrease in nutritional value of food increases vulnerability to diseases. Epidemics commonly occur after floods, but extended warm periods also promote the proliferation of water and foodborne pathogens and diseases.
- ❖ Less well recognised is the impact of climate change on NCDs and mental health, both of which are poorly managed in India. Heat, physical exertion, and dehydration, a constant state for labourers, could lead to kidney injuries, which are rising in India due to uncontrolled diabetes. Chronic Obstructive Pulmonary Diseases are exacerbated by increased and extended episodes of air pollution.
- ❖ Depression, aggravated by stress generated by the change in weather conditions, and Post Traumatic Stress Disorder (PTSD) invariably accompany a climate emergency.

### Climate change and urban India

- ❖ India is urbanising at a rapid pace, in an unplanned manner. Urban areas, not tempered by urban greenery and open spaces and filled with asphalt roads and heat retaining buildings that physically block air circulation, bear the worst ill effects of climate change due to the urban heat island effect. (Urban areas are warmer than surrounding rural areas, especially at night).
- ❖ Climate change puts further pressure on the weak urban primary health system, already suffering the ill effects of air pollution; urban planning that discourages physical activity; and work related and cultural stress.

#### Way forward: Mitigation efforts

- ❖ It begins with understanding the direct and indirect pathways by which climate change impacts health and assessing the burden. Currently, the health information systems are not modified to gather this data.
- ❖ Since the impact is accentuated by socioeconomic conditions, having systems in place for social support and health services will reduce the impact.
- ❖ We need to take interventions that focus on better urban planning, green cover, water conservation, and public health interventions will be much larger — not only for health but for many determinants of health.
- ❖ Action to control climate change needs to happen at global, regional, and local levels. Pathways of climate change and their impact will determine the appropriate area of intervention. To achieve this, India has to recognise climate change and its impact on health as a problem that can be and needs to be addressed.

#### Conclusion

- ❖ National, State, and local governments have to decide to act on the policy options that have been generated by research. Only when the three streams of problematisation, policy options, and political decision making come together is meaningful change likely to happen

## HEALTH ISSUES RELATED TO CHILDREN

### Context

- ❖ A new report from the World Health Organization (WHO) and the U.S. Centers for Disease Control and Prevention (CDC) said measles cases in 2022 have increased by 18%, compared to 2021.

### Findings on measles in India

- ❖ India's Union Health Ministry has refuted a part of the report which said that globally 22 million children did not get their first measles shot in 2022 and that half of them live in 10 countries including India, where an estimated 1.1 million infants did not get the first dose of the vaccine.
- ❖ According to the WHO, measles vaccination averted 56 million deaths between 2000 and 2021. Additionally in 2022, about 83% of the world's children received one dose of measles vaccine by their first birthday through routine health services — the lowest since 2008.
- ❖ Health Ministry maintains that just over 21,000 Indian children did not get the shot in FY 2022-23 and that catchup vaccinations are going on in the states. The ministry also said that the WHO data is based on an estimated number, reported under the WHO UNICEF Estimates National Immunization Coverage (WUENIC) 2022 report.

### About measles

- ❖ Measles is a contagious disease caused by a virus, which spreads through the air when an infected person coughs or sneezes. Measles starts with a cough, runny nose, red eyes, and fever. Then a rash of tiny, red spots break out. It starts at the head and spreads to the rest of the body.
- ❖ Measles can be prevented with the MMR vaccine. The vaccine protects against three diseases — measles, mumps and rubella. Two doses of MMR vaccine are about 97% effective at preventing measles; one dose is about 93% effective.

### Universal Immunisation Programme

- ❖ India's UIP is one of the largest public health programmes in the world targeting close to 2.67 crore newborns and 2.9 crore pregnant women annually.



- ❖ However, due to interruption of routine vaccination during and post-COVID pandemic, India did see several outbreaks of measles in different parts of the country. While the pace of routine immunisation has slowed down due to Covid-19, IMI 4.0 is filling the gaps towards universal immunisation.
- ❖ **Intensified Mission Indradhanush (IMI) 4.0 :**
- ❖ Mission Indradhanush was launched to fully immunize children who are either unvaccinated or partially vaccinated under UIP.
- ❖ IMI provides vaccination against 12 Vaccine-Preventable Diseases (VPD) i.e. diphtheria, Whooping cough, tetanus, polio, tuberculosis, hepatitis B, meningitis and pneumonia, Haemophilus influenzae type B infections, Japanese encephalitis (JE), rotavirus vaccine, pneumococcal conjugate vaccine (PCV) and measles-rubella (MR).
- ❖ IMI 4.0 was launched in 2022 to ensure that Routine Immunization (RI) services reach unvaccinated and partially vaccinated children and pregnant women. Children up to two years are being covered in this drive.

#### Impact of COVID-19 on the vaccination programme

- ❖ The WHO notes that the pandemic has led to setbacks in surveillance and immunisation efforts across the globe leaving millions of children vulnerable to diseases like measles.
- ❖ “No country is exempt from measles, and areas with low immunisation encourage the virus to circulate, increasing the likelihood of outbreaks and putting all unvaccinated children at risk,” WHO notes.
- ❖ In India, as recently as late last year, Maharashtra and Kerala saw a spike in cases of measles. While Maharashtra recorded over 800 cases and over 10 deaths linked to the disease, Kerala’s Malappuram district reported 160 cases of measles.

#### Conclusion

- ❖ The stakeholders of children’s healthcare must take extra measures for routine and catch up measles vaccination to contain the disease in India.

## HOW UNIVERSITIES AND INDUSTRY CAN COLLABORATE

### Introductions

- ❖ It is well known that collaborations between industry and academia can be mutually beneficial. However, most Indian higher education institutions (HEIs) have not focused on such collaborations or on intellectual property rights (IPRs) and transfer of technology (ToT).

### Issues with Indian HEIs

- ❖ While universities conduct and encourage basic research, many of them do not capitalise on the same research by commercialising their IPR; they miss out on likely gains from patents, licensing, or startup companies. Determining and managing impediments to collaborations between industry and academia requires a multipronged approach.

### Industry- Academia collaboration

- ❖ First, HEIs and industry can only collaborate if they evolve shared goals. HEIs predominantly seek to educate students and conduct research. They often focus on creating theoretical knowledge. On the other hand, industries are profit driven and pursue practical applications of knowledge to enhance productivity and innovation.
- ❖ To resolve these issues, the two parties must engage in an open dialogue, develop a flexible attitude, and find common ground where theoretical knowledge and practical applications can coexist.

### Cultural differences

- ❖ Second, there are cultural differences between how HEIs and industrial partners approach the issue of collaboration.
- ❖ Let us say an HEI is collaborating with an industrial partner (a renewable energy company) on a research project associated with sustainable energy. When researchers at the HEI scrutinise the data furnished by the company, they may find that it needs more academic rigour and theoretical profoundness. Consequently, they might suppose that the data is of restricted use for publishing in a prestigious academic journal.
- ❖ Conversely, the company will focus more on practical outcomes. It may not have the time or expertise to have theoretical discussions since its immediate concern is to implement solutions in the real world by

improving processes or by devising new products. So, both sides must find a middle path to bridge this cultural gap.

- ❖ HEI researchers could refine their findings into practical recommendations that the industrial partner can understand and implement, while the industrial partner could provide more context to the data.

#### **Communication and training**

- ❖ Third, Indian HEIs must establish good communication channels with the industry. If a research team from a university is partnering with a pharmaceutical company, it needs to be acquainted with the industry's regulatory processes.
- ❖ Training programmes could be implemented so that researchers and industry professionals get familiar with the other's language and expectations.

#### **Trust building**

- ❖ Fourth, Indian HEIs must focus on building trust. Let us suppose a university and a tech company are collaborating to develop a new software application. A professor may be an expert in developing algorithms, but the industrial partner may want solutions that can be implemented in real world products. Both parties can work out a mutually agreeable IPR arrangement to address this.
- ❖ Such an arrangement will also help alleviate certain fears. For instance, the university might agree to fasttrack the development of a prototype software application that the company can use and refine for commercial purposes.
- ❖ But the industrial partner may fear that the university researchers will publish the research results without considering the commercial implications of their research. To overcome this, the university and the industrial partner can sign nondisclosure agreements to ensure that sensitive information shared during collaboration remains confidential.
- ❖ Both parties can also agree on which results may be earmarked for academic publications and which may be kept confidential or jointly published.

#### **Types of collaborations**

- ❖ Colleges or universities with minimal research facilities can focus on short term collaborations with local manufacturing companies facing technical problems in their production line that need a quick resolution. A team of students and faculty members from a college can provide a tangible solution that benefits the industry and brings returns to the college.
- ❖ On the other hand, universities with good research facilities and faculty expertise can partner with an industry for long term research collaborations that aim to develop cutting edge technologies. The additional benefit of such long term collaborations is that students can work as interns on research projects. They will then learn to handle deadlines, navigate failures, and collaborate with colleagues in the industry. HEIs and industries should, therefore, work on developing a symbiotic relationship.
- ❖ Industries in specific domains should collaborate with research groups across different universities in the same domain to keep themselves abreast of new research developments.

#### **Conclusion**

- ❖ All this will become easier if government funding agencies announce suitable research grants and call for joint project proposals from HEIs and industry partners. There should also be critical annual reviews by a team of experts appointed by the funding agency to examine the deliverables promised by the stakeholders.

## GENERAL STUDIES 3.

### ECONOMY

#### UNDERSTANDING WORKER PRODUCTIVITY

##### Context

- ❖ Infosys founder N.R. Narayana Murthy sparked a debate last week by urging young Indians to work 70 hours per week, citing Japan and Germany as examples of countries that grew because their citizens worked harder and for longer hours to rebuild their nations in the aftermath of the Second World War. He further noted that India's worker productivity is one of the lowest in the world.

##### Worker productivity vs labour productivity

- ❖ The only conceptual difference between the two is that the 'work' in worker productivity describes mental activities while the 'work' in labour productivity is mostly associated with manual activities.
- ❖ Productivity of an activity is usually measured as the quantum of output value per unit of labour (time) cost at a micro level. At a macro level, it is measured in terms of the labour-output ratio or change in Net Domestic Product (NDP) per worker in each sector (where working hours are assumed to be 8 hours per day).
- ❖ However, in certain types of services, especially ones involving intellectual labour, measuring the value of the output independently is very difficult, so the income of workers is usually taken as proxies to suggest productivity.
- ❖ Productivity in a more sophisticated usage is an attribute not of time but of skill.
- ❖ Human capital including education, training, nutrition, health etc., enhances the ability of labour to become more productive, or churn out greater quantum of value within the same number of working hours.
- ❖ Based on this understanding, the reduction in the number of working hours does not hamper the value of output produced, but in turn enhances the leisure and quality of life of workers in real terms, while the value added to the economy could still be increasing, nominal wages remaining the same.

##### Link between worker productivity and economic growth

- ❖ While an increase in productivity made through any sector is likely to affect the value added and the accumulation or growth in the economy, the relationship between the two could be quite complex.
- ❖ If by prosperity we intend to suggest prosperity of the workers, this may or may not be true.
- ❖ It is noted that the increase in incomes or the prosperity of the richest people is not quite explained by their productivity.
- ❖ On the contrary, this prosperity is either linked to hereditary transfers of wealth upon which the rich are earning yields (he called this patrimonial capitalism) or to the 'super managerial' class who seem to be deciding their own exorbitant pay packages, quite arbitrarily, not related in any way to their productivity.

##### India and worker productivity

- ❖ As incomes are seen as a proxy for productivity, there is a fallacious inference about productivity of workers in India being low.
- ❖ A U.S based multi-national workforce management firm, has in fact observed that Indians are among the most hard working employees in the world.
- ❖ On the other hand, Picodi.com an international ecommerce platform has observed that India ranks one of the lowest in terms of average wages per month globally.
- ❖ Informal employment in both the unorganised as well as the organised sectors has been on the rise through the course of economic reforms.
- ❖ The dubious claim of increased formalisation has been limited only to bringing activities under the tax net. This has however had no impact on improving labour standards or working conditions.
- ❖ Even in the formal manufacturing sector you find an overwhelming presence of Micro-Small-Medium Enterprises (MSME) which are labour intensive.



- ❖ Studies have also found that there is a systematic process of cost cutting through wage cutting in these enterprises.

#### Way forward

- ❖ Japan and Germany are neither comparable in terms of the size and quality of labour force nor in terms of the nature of their technological trajectories or their socio-cultural and political structures.
- ❖ India presents a unique case and any arbitrary comparison would only lead to dubious analytical inferences and fallacious policy prescriptions.
- ❖ Enhancing social investments, focusing on exploring domestic consumption potential for increased productivity with a human centric assessment of development achievements is the way to a more sustainable and desirable outcome.

## WHERE DO DOMESTICATED SILKWORM COCOONS GET THEIR WILD COLOURS FROM?

### Introduction

- ❖ Silk, the queen of fibres, is drawn or reeled from cocoons of the silk moth (*Bombyx mori*). Humans domesticated it more than 5,000 years ago in China, from the wild moth (*Bombyx mandarina*). India is the world's second largest producer of raw silk after China.

### Silkworms

- ❖ Caterpillars, also known as silkworms, of both these species feed exclusively on leaves of mulberry plants (genus *Morus*).
- ❖ The domesticated moth is much larger than its wild progenitor, and thus extrudes a longer silk fibre to build its larger cocoon, up to 900 metres long.
- ❖ But it depends wholly on human care for its survival and reproduction.
- ❖ Since having been domesticated, it has lost the ability to fly, and since its need for camouflage no longer exists, it has also lost its caterpillar and adult-stage pigmentation.

### Carotenoids and flavonoids

- ❖ 'Wild' silks – which include the muga, tasar, and eri silks – are obtained from other moth species: namely, *Antheraea assama*, *Antheraea mylitta*, and *Samia cynthia ricini*.
- ❖ These moths survive relatively independently of human care, and their caterpillars forage on a wider variety of trees.
- ❖ Non-mulberry silks comprise about 30% of all silk produced in India.
- ❖ These silks have shorter, coarser, and harder threads compared to the long, fine, and smooth threads of the mulberry silks.
- ❖ The ancestral mulberry moth makes brown-yellow cocoons. In contrast, domesticated silk moth cocoons come in an eye-catching palette of yellow-red, gold, flesh, pink, pale green, deep green or white.
- ❖ Human handlers selected the differently coloured cocoons whenever they emerged, possibly in the hope of breeding for coloured silks.
- ❖ We know today that the cocoon's pigments are derived from chemical compounds called carotenoids and flavonoids, which are made by the mulberry leaves.
- ❖ Silkworms feed voraciously on the leaves, absorb the chemicals in their midgut, transport them via the hemolymph – arthropods' analogue of blood – to the silk glands, where they are taken up and bound to the silk protein.
- ❖ Mature caterpillars then spin out the silk proteins and associated pigment into a single fibre. The caterpillar wraps the fibre around itself to build the cocoon.

### Mutant strains

- ❖ The adult moth hatches from the cocoon. In this process, the fibre is broken in many places.
- ❖ Superior quality silk however comes from an unbroken fibre, so unhatched cocoons are used for reeling.
- ❖ The differently coloured cocoons arise from mutations in genes responsible for the uptake, transport, and modification of carotenoids and flavonoids.
- ❖ The mutant strains have become a valuable resource for scientists to study the molecular basis of how, in a relatively short span of 5,000 years, artificial selection generated such spectacular diversity.

### The gene called *apontic-like*

- ❖ Domesticated and ancestral mulberry silk moths can be interbred to produce hybrid offspring.
- ❖ The hybrid caterpillars, like their wild parent, made the pigment called melanin.
- ❖ But when the B. mandarina-derived copy of apontic-like was mutated, the hybrid failed to make melanin.
- ❖ Both versions of the apontic-like gene make the same protein. Therefore, the difference between them was attributable to differences in sequences that regulate when and where the gene was turned 'on' or 'off'.

### Conclusion

- ❖ Silk is an acme of domestication, comparable in its success to basmati rice, alphonso mangoes, and the golden retriever. Today, the tools are at hand for scientists to make and compare genetically identical hybrid silk moths that differ only in which of a gene's two parental versions is inactivated: domesticated or ancestral.
- ❖ This paves the way for scientists to work out – gene by gene – all the key steps that led to silk moth domestication. Hopefully, someday soon, similar techniques will become available for us to analyse domestication in rice, mangoes, and dogs.

## CHIP OFF THE BLOCK

### Context: As incentives for semiconductors sputter, course corrections are due

#### Introduction

- ❖ As funds for production-linked incentives (PLI) for manufacturing semiconductors lie under-utilised by upwards of 80%, the Union government must be far clearer on what it has achieved — and aims to accomplish — by continuing to spend crores of rupees on bringing more semiconductor fabrication capabilities to India.

#### Semiconductor chips

- ❖ These are the materials which have a conductivity between conductors and insulators. They can be pure elements, silicon or germanium or compounds, gallium, arsenide or cadmium selenide.
- ❖ They are essential to almost all sectors of the economy including aerospace, automobiles, communications, clean energy, information technology and medical devices etc.
- ❖ These chips are the basic building blocks that serve as the heart and brain of all modern electronics and information and communications technology products.
- ❖ India has become the hub for semiconductor design with nearly 2,000 chips being designed per year and more than 20, 000 engineers working in various aspects of chip design and verification.

#### India's semiconductor mission

- ❖ India Semiconductor Mission (ISM) has been setup as an Independent Business Division within Digital India Corporation.
- ❖ ISM has all the administrative and financial powers and is tasked with the responsibility of catalysing the India Semiconductor ecosystem in manufacturing, packaging and design.
- ❖ ISM has an advisory board consisting of some of the leading global experts in the field of semiconductors.
- ❖ ISM is serving as the nodal agency for efficient, coherent and smooth implementation of the programme for development of semiconductor and manufacturing ecosystem in India.

#### Existing schemes and domestic implications

- ❖ While the PLI scheme for IT hardware has a ₹17,000 crore outlay, the one for semiconductors and displays has ₹38,601 crore earmarked. On the employment and substantive value addition fronts, existing schemes in and of themselves show little promise: while chips are important for most hardware and appliances, making them employ advanced and automated systems, and manufacturing facilities employ few people for the value generated in sales.
- ❖ Not all big-ticket spending in the national interest translates into domestic employment, as import-heavy defence spending shows. But the central wager with these schemes, at much cost to the exchequer, lies in attracting an "ecosystem" that will increase the value addition of India's electronics manufacturing sector.

- ❖ This is far from a guaranteed outcome, even if PLI benefits are availed optimally. The wager also relies on global manufacturing giants giving other benefits of a globally distributed supply chain a go-by, including cheap and accessible international transport facilities for chips.

#### Need of other incentives

- ❖ The constellation of PLI schemes must be bolstered by other efforts to strengthen India's hand — encouraging semiconductor design talent to develop domestically. Some efforts here, such as the design-linked incentive scheme, show promise.
- ❖ But the bulk of the capital remains focused on the assembly and subsidising of large manufacturing plants, with much of the raw and even intermediate material still being imported.
- ❖ And with the limited scope of what the PLI funds are incentivising, multinational chipmakers are staying away from making substantive commitments, despite incentives. Private capital is also in a state of flux, with advancements in chips and emerging technologies such as artificial intelligence leaving policymakers guessing on how best to allocate resources to boost their technological position for the coming decade.

#### Issues faced

- ❖ And with the limited scope of what the PLI funds are incentivising, multinational chipmakers are staying away from making substantive commitments, despite incentives. Private capital is also in a state of flux, with advancements in chips and emerging technologies such as artificial intelligence leaving policymakers guessing on how best to allocate resources to boost their technological position for the coming decade.
- ❖ India still lags in the establishment of semiconductor wafer fabrication (FAB) units due to a weak ecosystem and shortage of resources as compared to more competitive bases like China and Vietnam.

#### What needs to be done?

- ❖ These outlays must, therefore, be pegged to a tangible outcome: is this a matter of safeguarding cyber sovereignty to protect India from another pandemic-style supply chain shock, encouraging the domestic electronics industry to make electronics cheaper for Indian consumers, or asserting India as a global electronics manufacturing centre? Clarity on desired outcomes would make failures easier to spot. It would also make it possible to course correct before massive PLI spending has already taken place with little to show for the outflow.

## INDIAN ECONOMY AND ISSUES RELATING TO PLANNING, MOBILIZATION, OF RESOURCES, GROWTH, DEVELOPMENT AND EMPLOYMENT.

### Context: Slowdown in industrial output growth shows low consumer confidence

#### Introduction

- ❖ In September, the Index of Industrial Production or IIP rose 5.8%, almost half the 14-month-high 10.3% growth in August.
- ❖ Most economists anticipated a 7% to 8% uptick in the month that marks the onset of India's packed festive calendar.
- ❖ September's factory output growth was the slowest in three months, but also marked a 2.4% drop in production levels compared to August.
- ❖ Index of Industrial Production (IIP)
- ❖ Index of Industrial Production data or IIP as it is commonly called is an index that tracks manufacturing activity in different sectors of an economy.
- ❖ The IIP number measures the industrial production for the period under review, usually a month, as against the reference period. IIP is a key economic indicator of the manufacturing sector of the economy.
- ❖ There is a lag of six weeks in the publication of the IIP index data after the reference month ends. IIP index is currently calculated using 2011-2012 as the base year.
- ❖ In the case of Index of Industrial Production India, IIP data is compiled and published by CSO every month. CSO or Central Statistical Organisation operates under the Ministry of Statistics and Programme Implementation (MoSPI). The IIP index data, once released, is also available on the PIB website.



### What is more worrying!

- ❖ In August, just seven of 23 manufacturing sectors had clocked a contraction but that list expanded to nine in September, with furniture dropping 20% and apparel production almost 18%.
- ❖ What is more worrying is that 12 sectors recorded a sequential decline in output this September, belying hopes that firms would ramp up inventories in anticipation of festive spending. Producers' lack of confidence in consumers' impulses is reflected in consumer durables and non-durables, which were up just 1% and 2.7%, respectively, on top of a 5.5%-plus contraction last September.
- ❖ Sequentially, consumer non-durables, what one may broadly consider as fast-moving consumer goods involving smaller-ticket spends, were down 3.5% with the lowest output levels seen since November 2022. Electricity generation also fell 6.6% sequentially in September, perhaps due to the higher rainfall recorded over August.

### Looking at the broader picture

- ❖ On the whole, September's IIP takes average factory output growth to 7.4% in the second quarter, lifting the uptick in the first half of 2023-24 to 6%.
- ❖ This may still weigh in well with the central bank chief's hopes of Q2 GDP growth outpacing their official projection of 6.5%. But spliced up, the IIP indicates an asymmetry in the economy and a fresh fork lies in the road ahead.
- ❖ Consumer goods' output was just 0.3% higher than pre-COVID-19 levels this September, with durables being the only use-based segment to record a contraction so far this year. By contrast, output has been more resilient in investment-linked sectors such as infrastructure/construction goods and capital goods, up 12.1% and 6.7%, respectively, this year.
- ❖ Public capex on infrastructure sectors has surely lifted output of items such as steel and cement through the first half of the year, while high inflation has eaten into all but the high-income consumers' propensity to spend.

### Way forward

- ❖ Going forward, capex spends that have been front-loaded this year may moderate and additional revenue spends ahead of the Lok Sabha election are likely, especially with sensitive commodities such as fuel, urea and food facing fresh volatility in prices.
- ❖ That infrastructure and construction goods' output in September was the lowest since March 2023, suggests one growth tide may be ebbing, which makes the other, more fragile consumption story even more critical to watch.

## THE ECONOMY OF A WORLD WITHOUT WORK

### Context

- ❖ At the recently concluded Bletchley Park summit on Artificial Intelligence (AI), billionaire Elon Musk highlighted the disruptive potential of AI and a future where AI would substitute for all human labour — both physical and cognitive — and hence individuals would face no pressing need for a job, but would only seek work for personal fulfilment.

### The need for work

- ❖ The history of economic thought reveals different ways in which a human's relation with work has been theorised.
- ❖ Here one looks at two thinkers with diametrically opposite views on the nature of work — John Maynard Keynes and Karl Marx.
- ❖ Keynes was a liberal thinker who extolled capitalism but wished to save it from its worst excesses. He believed that at its heart, work represented a form of drudgery, and a world in which the hours of work could be reduced was one that unequivocally increased welfare.

- ❖ Keynes theorised that technological change under capitalism would eventually lead to a reduction of working hours.
- ❖ Mr. Musk's comments can be seen as an extension of Keynes' thinking, where improvements in technological change, if taken to its theoretical extreme, could eliminate the need for work altogether, representing an unambiguous positive outcome.
- ❖ Karl Marx had a more nuanced analysis. For him, the essence of humanity lies in our ability to materially manipulate nature; work therefore provides meaning to human life.
- ❖ The problem arises within the economic system of capitalism, as the product of human labour is not the labourers' to enjoy, but is seen as the property of capital to dispose of in the market for profit.

### The impact of AI on the economy

- ❖ Yet the views of the above thinkers reveal an important problem in the current discussions around AI — the neglect of the economic system.
- ❖ Assume a situation where AI has advanced to the point that it is capable of substituting all kinds of labour.
- ❖ Under our current system of capitalism, the only way an individual can access material resources such as food and shelter is through income derived from work.
- ❖ In such a system, a world without work does not imply a world without drudgery, but one where individuals who cannot find work cannot access basic resources.
- ❖ One can make the caveat — as Mr. Musk has — that work would be available for those who desire it for personal reasons.
- ❖ However, in a capitalist world, labour has no choice but to seek out work if they are to feed and clothe themselves. The world as sketched out by Mr. Musk cannot emerge under modern-day capitalism.

### A world without work

- ❖ Imagine an economy where a part of the surplus generated in the productive sphere — where AI is the only productive factor — is transferred to human individuals to meet their basic needs.
- ❖ There is nothing wrong, of course, with postulating such a world. But this is not a capitalist world. It is a world with very different institutional arrangements regulating production and distribution, one where a universal basic income is a major source of income and not wage labour.
- ❖ This throws up several important questions, such as what determines the amount individuals receive, what determines the division of the net product between those who own the machines and those who don't and what determines the division between future growth versus current consumption.
- ❖ More importantly, is our current society open to devising new institutional arrangements to bring such a future to fruition, given that the current system has led to the emergence of rising inequality and a powerful billionaire class.

### Conclusion

- ❖ A situation where AI reigns supreme may never come to pass, and one may dismiss this article as speculative fiction. Yet the world economy will face disruptions, and it is imperative for us to fully understand the nature of these challenges. The impact of technological innovations cannot be seen in isolation from prevailing economic institutions.

## STATE OF THE ECONOMY — TEMPER THE EUPHORIA

### Context:

- ❖ In its semiannual report, World Economic Outlook, 'Navigating Global Divergences' October 2023, the International Monetary Fund (IMF) has revised its projected GDP growth rate for India for 2023-24 to 6.3%, up from the earlier 6.1%. For India's policymakers, it is a vindication of their short term economic management. Official spokespersons have sought the IMF's endorsement to silence its critics.

### Performance of Indian economy

- ❖ That the economies that were worst affected during the COVID19 pandemic were also the ones to record a steep recovery is widely acknowledged. India, which was one of the worst affected, has followed the pattern.
- ❖ During the second quarter of 2020, India's GDP contracted by 25.6%, quarter on quarter, the worst among the world's major economies in 2020. Taking a slightly longer view, India's real (inflation adjusted) annual GDP growth rate slowed down from 6.8% in 2016-17 to 2.8% in 2019-20, immediately prior to the pandemic.
- ❖ Real per capita income level in 2021-22, at ₹1.09 lakh, was higher than that in 2019-20 by about ₹600. In the following year, 2022-23, recovery gained momentum as domestic supplies were restored and global supply chains were straightened out.

### Effects are cause for concern

- ❖ Surely, output recovery is welcome, yet its effects on employment, its quality and persistence of inflation of essential food items affecting the poor the most remain causes of concern — as many critics have highlighted. However, even focusing on output recovery, a sectoral view with trade dimension, would perhaps expose chinks on the armour.
- ❖ Policymakers need to temper their optimism by taking a slightly longer view with a wider angle — appreciating the fast changing geopolitical underpinnings of economic policy making. It perhaps bears repetition that 2022-23 heralded the end of globalisation as we knew it (since the Berlin Wall's collapse in 1989) with tectonic shifts in the world geopolitical order, revealing India's persistent vulnerabilities of oil and food shocks.

### Growing deficit with China

- ❖ However, the immediate concern is India's susceptibility to its soaring deficit with China. India's economic frailty has increased even as the net exports (exports minus imports) to GDP ratio has declined sharply.
- ❖ India's dependence on Chinese imports of manufactures seems structural, and not easily corrected by changes in relative prices. In May 2020, the government initiated the Atmanirbhar Bharat Abhiyan, amidst the Galwan crisis to curb Chinese imports of critical industrial products. China accounts for: 15%- 16% of India's imports and a third of India's trade deficit.
- ❖ Willy nilly, India undid many import restrictions, as domestic production was getting throttled for lack of critical Chinese inputs. Industrial growth rates as per the Index of Industrial Production (IIP), despite its limitations, shows an alarming regression over a longer period. During the boom period (2004-05 to 2013-14), manufacturing grew at an annual average rate of 5.7%.
- ❖ From 2011-12 to 2021-22, gross fixed capital formation (GFCF) to GDP ratio at current prices, declined steadily from 34.3% to 28.9% — an unprecedented fall in post independent India. And its public sector share has remained constant at 8% (National Accounts).
- ❖ Net foreign direct investment (FDI excluding disinvestment and outward foreign direct investment), to current GDP ratio fell from 3.6% in 2008 to 2.4% in 2022 (World Development Indicators). The official optimistic picture of public investment growth since FY22, based on budgetary statistics, seems suspect.

### Public investment has three parts:

- ❖ Investment by government
- ❖ Central public sector undertakings (PSUs)
- ❖ State PSUs
- ❖ Public investment by State governments, based on the Centre's loans and advances to States, is conditional upon policy reforms. The widely reported rise in the Centre's investment is apparently due to the merging of extrabudgetary borrowing by central PSUs with the Centre's own Budget. Hence, the projected boost in public investment seems illusory. Combining the three items, public investment seems around 6% of GDP — perhaps similar to its pre-COVID-19 levels.

### Credibility of the HDI

- ❖ On social development, official spokespersons and critics have battled over the veracity of multidimensional poverty measure (MPI), and the unrepresentativeness of the Global Hunger Index (GHI). Instead, the UN



Development Programme's Human Development Index (HDI) may be more credible and an acceptable measure.

- ❖ The value of India's HDI index moderated from 0.645 in 2018 to 0.633 in 2021; and, its global rank went down by one rank during 2015 to 2021 — meaning that other countries have performed better than India.

### Concerns

- ❖ To sum up, our economic recovery is weak with following concerns:
- ❖ Strategic threat posed by an unrelenting rise in trade deficit with China, despite government's best efforts
- ❖ Its mirror image is a decline in industrial output growth rates, especially capital goods' decimation
- ❖ A decade long, unprecedented, decline in the economy's fixed investment rate; with an unchanging public sector's share in it,
- ❖ India's HDI ranking slipping.

### Conclusion

- ❖ Official commentators would perhaps do well to engage with its critics in appreciating the gravity of economic setbacks in recent years than scoring brownie points over the IMF's short term growth projections.

## MAKING SENSE OF THE EMPLOYMENT CHALLENGE

### Context

- ❖ By proposing that Indians work longer to achieve a larger national output, N.R. Narayana Murthy, the founder of India's iconic business house, Infosys, has issued something akin to a challenge to his compatriots. He proposed a 70 hour work week. To strengthen his case he has pointed to the experience of Japan and Germany after the Second World War, when citizens worked longer hours than we do on average in India today.

### Output, demand and labour

- ❖ Ever since the Keynesian Revolution in economics, we know that output is determined by aggregate demand (AD), which is the demand for the total volume of goods and services produced in an economy.

### (AD- AS Model)

- ❖ The demand for labour is entirely dependent upon this demand. There is no demand for labour independent of the demand for goods. Firms that employ more labour while aggregate demand has not increased will find themselves with unsold goods.
- ❖ So, an offer by workers to work longer hours will not ensure that they will find employment so long as firms are unwilling to hire them. Firms are guided by the profit motive and will employ more labour only if there is increased demand for their product. Unemployment reflects just that — workers willing to work but firms unwilling to employ them for it would be unprofitable for them.
- ❖ The role of demand for goods and services in determining the demand for labour may be seen in the layoffs in the 'tech' sector globally at the beginning of this year. Since then, Google and Amazon have shed hundreds of employees hired during the COVID19 pandemic, when the demand for their products was high due to the lockdown or the work from home (WFH) arrangement.
- ❖ In a variant of the 'just in time' strategy, whereby manufacturing firms are hesitant to hold an inventory of materials for long, software services companies optimise the number of employees 'on the bench', i.e., waiting to be deployed in production. So, when there is unemployment, to exhort workers to work longer hours is somewhat irrelevant, even when it is not meant to be callous.

### The case of South Korea :

- ❖ South Korea was recovering from a war, though a different one from world war, and its resurgence was supported by considerable foreign aid received from the U.S., of which it was an ally. However, a strong nationalistic element accompanied their postwar reconstruction after a shared catastrophe imposed by 'foreigners'.

- ❖ There was an additional dimension in Korea though — a dictatorship that saw the commandeering of able bodied men to work in the countryside on large scale projects of preparing the land for raising agricultural productivity.
- ❖ There is insufficient recognition of the fact that the manufacturing success of the east is underpinned by prior success in agriculture. The high working hours that contributed to this are unlikely to have been witnessed in a system in which labour was allocated according to consideration of profit.
- ❖ The case of high working hours in Germany and East Asia in the middle of the last century, backed by public funding and coercion, is not an experience helpful to understanding the present in India (a market economy where firms are driven by consideration of profit and coercion is ruled out).

### Economic strategies for India

- ❖ Does it mean, then, that there is an iron law of the market pinning us down helplessly to high unemployment through low aggregate demand in India? Not at all. There are two strategies economic policy here can attempt.
- ❖ The first is to use the global market or world demand to grow the domestic economy, but India's goods would have to be globally competitive. Here, the experience of South Korea is relevant.
- ❖ As most of the produced inputs into production are available to all countries via trade, a country's competitiveness is ultimately determined by the productivity of its workforce and the physical infrastructure that complements labour. The strength and dexterity of a workforce, manifested as productivity, is related to its health and skill. In both these categories, India's workers are at a disadvantage compared to the most successful economies of Asia.
- ❖ A second route to greater output and employment is to expand the domestic market — and thus aggregate demand. To see how this can be done, recognise that the economy produces both food and non- agricultural goods and services. These are placed differently in relation to our consumption needs.
- ❖ If food can be produced at lower cost, the real income of the majority of Indian households would rise. They would now have more to spend on non-agricultural goods and services having satisfied their need for food. This would generate the demand needed to spur production in the rest of the economy. And with this, output will also grow, and in turn employment, with or without the longer hours in question.

### Conclusion:

- ❖ The proposal that Indians work for 70 hours a week is surely meant for those in the formal sector, where specified work hours and a minimum wage stipulation exist. Ethnographic studies of India's informal sector show that in some of its segments, unorganised workers are already labouring this long at very low wages and without any such protection.
- ❖ Here, the challenge is to activate the long arm of the law to ensure acceptable working conditions that encompass fewer hours, higher wages, and more equipment to lessen the physical burden of labouring.

## LISTEN TO THE PEOPLE, NOT THE NUMBERS

### Context:

- ❖ Indian economy has an income problem, not a growth problem. Incomes are not growing sufficiently or sustainably for very large numbers of people. Even though overall GDP growth is good, there is increasing pressure for reservations of jobs for all "economically weaker" sections regardless of caste or religion.

### Growth and employment:

- ❖ Economists on both sides, for the government and those against it, are debating whether the economy is creating enough jobs and are questioning the veracity of the government's data. Those against the government also want to show that the problem of growth with insufficient jobs has been created by the policies of the present government and not the previous one.

### Jobs that are not 'good'

- ❖ The overall problem of incomes in India, according to economists, is that insufficient numbers have moved out of agriculture into manufacturing. This has been the historical pattern for sustainable growth in all countries, including the U.S. a hundred years ago, and China more recently.
- ❖ India's policymakers thought they had found a shortcut in the 1990s, directly from agriculture to services, with the boost in the growth of exportable Information Technology services.
- ❖ But there is very little room in high end services to absorb the large numbers of young Indians in need of jobs. Moreover, these jobs require levels of education that people in rural areas do not have. Therefore, when they move out of agriculture, they need work that fits their present abilities, and puts them onto a ladder that they can climb. They need jobs where they can learn higher skills and earn more.
- ❖ Labour intensive manufacturing, services, and construction provide them the first step. The millions of Indians who have moved out of agriculture in the last three decades moved into such jobs.
- ❖ The problem is that the jobs they have, irrespective of the sector, are not "good" jobs: they do not pay enough, they are temporary or on short contracts, and they do not provide social security or assistance to develop further skills.
- ❖ Even in large, modern, manufacturing enterprises, workers are employed through contractors to provide employers with "flexibility" to reduce costs. Contract workers are paid much less than regular workers. They have insecure employment and are not assisted to develop higher skills.

### The world at a turning point

- ❖ New ideas of economics are required to create a more environmentally sustainable and socially harmonious future. New concepts of work are required; also new designs of enterprises in which the work is done; as well as new evaluations of the social and economic relationships between participants in these enterprises. The drive for green, organic, and "local" to reduce carbon emissions and improve care of the environment will make small enterprises beautiful again.
- ❖ "Economies of scope" will determine the viability of enterprises rather than "economies of scale". Denser, local, economic webs will develop, rather than long, global supply chains through which specialised products made on scale in different parts of the world are connecting producers with consumers in other distant parts.

### The economic value in caregiving

- ❖ Attention will shift towards creating genuine "social" enterprises, rather than enterprises for creating economic efficiencies and surpluses which corporate enterprises are designed for.
- ❖ Those who provide care, and their work of caregiving, must be valued more than economists value them today. In the present paradigm of economic growth, caregivers, traditionally women, are plucked out of families — which are a natural social enterprise — to work in factories, offices, and retail, in enterprises designed to produce monetary economic value.
- ❖ When economists measure women's participation in the labour force, they value only what women do in formal enterprises for money. They seem to assign no value to the "informal" work they do outside their homes to earn money, whether as domestic caregivers in others' homes or on family farms.
- ❖ The prevalent paradigm of economic theory is distorting social organisations, which families are, to suit the requirements of corporations, which are formal economic organisations. Thus, the money measured economy (GDP) grows, while the care that humans can and should give each other reduces.

### Measurements of economic growth and employment

- ❖ It must not be mired any longer in 20th century concepts of economic growth. They must be reformed to reflect forms of work and enterprises we want more of in the future. For this paradigm shift, the process of policymaking must begin with listening to those who have not been given much value in the present economic paradigm: to workers, smallholding farmers, small entrepreneurs, and women. Presently, their views are overruled by those who have power in the present paradigm: experts in economics, large financial institutions, and large business corporations.

### Conclusion:



- ❖ The lesson for policymakers is this: “Don’t count on historical statistics to guide good policy for the future: listen to the people and what matters to them.”

## A \$5 TRILLION ECONOMY, BUT FOR WHOM?

### Context

- ❖ Recently Indian Prime Minister announced the extension of the Pradhan Mantri Garib Kalyan Anna Yojna (PMGKAY), a scheme providing 5 kg of foodgrains free every month to beneficiaries of the National Food Security Act (NFSA), by five years because he does not want any citizen to sleep hungry. This means that 80 crore Indians will still be receiving free foodgrains to stave off hunger in 2028.
- ❖ This is the year the government expects India to become the third largest economy in the world, with a GDP of \$5 trillion. Will large swathes of Indians still be hungry with a GDP of \$5 trillion? Who will benefit from the five year dash to these targets?

### The story of Japan and China

- ❖ For reference, let’s take a look at Japan today, the third largest economy by GDP in the world. For 40 years, Japan was the world’s second largest economy, powered by manufacturing and exports. But after the 2008 world financial crisis, the wheels came off the Japanese economy. Japan’s population started spending less, exports shrank, and government incentives dried up.
- ❖ On the other hand, China enjoyed a manufacturing boom and dislodged Japan to become the world’s second largest economy by GDP. On losing rank, however, Japan displayed remarkable ego free economic diplomacy. As soon as the economy plunged to the third position, Japan’s leadership publicly welcomed China’s ascent, stating that sustained demand from the (then) most populous country could only be good for Japan’s exports.
- ❖ However in Japan, as the high value industrial economy took centre stage, the strength of personal and professional relationships withered and the multigenerational family and social structure became atomised. They fell through the cracks into financial collapse and social withdrawal.

### A deep divide

- ❖ Today, the Government of India claims that the country is on the cusp of an economic tsunami. How does the sprint to the target of \$5 trillion bode for citizens, especially the 80 crore who will still be on free rations in 2028?
- ❖ India’s economic growth pivots on capital, productivity and labour, and data show that for over 4/5th of Indians, the \$5 trillion economy is a bridge too far.
- ❖ Consider capital: in 2021, 1% of the population owned about 41% of the nation’s wealth, while 50% owned 3% of its wealth, according to Oxfam. In such an environment, the dash towards a \$5 trillion economic trophy lies in the grip of the resource rich power brokers who will seize the initiative.
- ❖ But ironically, it is the low resource citizens who are funding the investment for the proposed \$5 trillion economy: approximately 64% of the total Goods and Services Tax (GST) came from the bottom 50% of the population, and the top 10% contributed 3% of GST.
- ❖ At the same time, the contribution of labour, the other driver of growth, is hamstrung due to dubious educational and skill attainments and halting digital literacy. Productivity is just beginning to get a boost through the creation of digital and physical infrastructure.
- ❖ There are also other issues with Mr. Modi’s guarantee that India will be the third largest economy in five years. First, with a per capita income of \$2,400, India ranks 149 among 194 countries in 2022. Since per capita income is a keen index of a population’s wellbeing, note that the average Japanese at \$34,000 is considered better off than the average Chinese at a \$13,000, even though China has outstripped Japan in world GDP rankings.
- ❖ What is India’s per capita income projected to be at \$5 trillion? There are no official estimates available.
- ❖ Second, the nub of the chase to \$5 trillion GDP is in its distribution, or the inequality index, generated by World Economics. A high value indicates a more egalitarian society. The values of both China and Japan are

more than 50. These countries appear to be sharing their economic fortunes more evenly than India, which has a value of 21.9.

### Conclusion

- ❖ Will the divide between the two Indias deepen with the \$5 trillion target? India might be on its way to achieving this goal, but most of the population still remains marooned in the slow lanes of an older India, watching as the new caravan's storm past.

## SECURITY

### TELCO DOUBLE DIP ATTEMPT THAT THREATENS NET NEUTRALITY

#### Context:

- ❖ In July this year, the Telecom Regulatory Authority of India (TRAI), at the request of the government, invited a comprehensive consultation on the need and possible mechanisms for regulation of 'OTT services', which became controversial.

#### Over The Top (OTT) services:

- ❖ It refers to media service offered directly to viewers via the Internet. OTT bypasses cable, broadcast, and satellite television platforms—the types of companies that have traditionally acted as controllers or distributors of such content.

#### Examples: content providers such as Netflix, Amazon Prime, and Disney+ Hotstar.

- ❖ For more than a decade now, telecom companies have seen revenue from traditional streams such as voice calls and SMS come under pressure, as competing OTT services are often free. At the same time, they have had to invest heavily in upgrading their infrastructure to handle increased data traffic, without necessarily seeing an equivalent rise in revenue.
- ❖ They also complain that OTT services are not subject to the same level of taxation and licensing fees, leading to an uneven playing field. On the flip side, the use of OTT services has led to a surge in data consumption, which is a growing revenue stream for telecom companies.

#### Flawed argument that affects net neutrality

- ❖ The OTT consultation has renewed the clamour from the telecom companies that OTT platforms/ content providers be asked to share in the costs of bandwidth. They argue that streaming platforms are free riders, benefiting from the infrastructure built and maintained by the telecom companies.
- ❖ However, this argument is fundamentally flawed and sets a dangerous precedent that undermines the principle of net neutrality. Telecom companies do not own the Internet; rather, they provide access to it.
- ❖ Consumers pay the telcos for access services by purchasing data plans. By offering services that consumers desire, OTT platforms generate demand for Internet access. They also pay for the content delivery networks (CDNs) to create pathways that substantially augment the capacity of the internet to deliver their content.
- ❖ Telecom companies capitalise on this demand (and the availability of OTT content) by providing connectivity to the Internet and charging subscribers for it.
- ❖ If they fail to cover costs, telecom companies are at liberty to increase their prices, which should go towards maintaining and upgrading their infrastructure. One of the requirements for the operation of a fair market is that the costs and benefits of a transaction are fully accounted for in the exchange price.
- ❖ Therefore, any attempt to seek cross subsidise instead of fully accounting for the costs could warrant scrutiny from the Competition Commission of India (CCI).
- ❖ In the marketplace for Internet access, the consumers are free to choose the provider that offers them the highest bandwidth, data volume, and reliability at an affordable price. These are distinct markets because services from one are not substitutable for services in the other.
- ❖ Therefore, it is logical to maintain a separation of costs between these two markets. The attempt of telcos to double dip by charging both consumers and content providers is not only avaricious but also undermines net neutrality.

- ❖ If OTT platforms were to acquiesce to the demands of the telcos, the incurred costs would trickle down to subscribers, either through increased subscription fees or degraded service quality for those platforms unwilling or unable to pay the toll. This outcome can only be detrimental to consumers who have come to rely on OTT services for entertainment, education, and professional pursuits.

### Net neutrality principle

- ❖ It says that Internet access providers (ISPs) must treat all traffic originating from and terminating to the Internet in the same way. Professor Tim Wu, who coined the term “net neutrality” in a 2003 paper, proposed the purpose of net neutrality is to promote an even playing field on the Internet, ensuring that all data is treated equally without discrimination by ISPs.
- ❖ Net neutrality draws from earlier notions and principles concerning common carriage, which posit that service to all customers must be provided on a nondiscriminatory basis.

### Basis of TRAI regulation

- ❖ Net neutrality formed the basis of TRAI’s regulation on prohibition of discriminatory tariffs for data services brought out in 2016. The regulator’s action forced the withdrawal of Facebook’s Free Basics platform and some other offerings in India.
- ❖ In 2017, TRAI released its comprehensive recommendations, which have largely guided the adoption of this principle in India. These steps taken by TRAI were noted elsewhere in the world.
- ❖ Body of European Regulators for Electronic Communications (BEREC) and TRAI adopted a Joint Statement for an Open Internet in 2018. The two organisations agreed through this memorandum of understanding to cooperate in developing technological and policy initiatives for net neutrality. Many other countries have also adopted net neutrality, thereafter.

### Conclusion

- ❖ It is imperative for all stakeholders, including policymakers, to recognise the long-term ramifications of acquiescing to the shortsighted demands of telecom companies. Upholding the principles of net neutrality is not merely about preserving the ethos of an open Internet but is also intrinsic to fostering a conducive environment for innovation, competition, and consumer welfare, especially countries such as India where the Internet is going to be the carrier of all Digital Public Infrastructure (DPI).

## INFRASTRUCTURE:

### STEERING ROAD SAFETY IN INDIA BACK ONTO THE RIGHT LANE

#### Introduction

- ❖ Each year, 3 lakh people are estimated to be killed on the road in India, according to the World Health Organization (WHO). The number of people suffering life altering injuries in road crashes is exponentially higher even than that.

#### World Day of Remembrance

- ❖ As the planet commemorated the World Day of Remembrance for Road Traffic Victims on November 19 to provide a platform for road traffic victims and their families to remember, support and act, such figures should serve as a wakeup call to all of us. We need immediate, coordinated and evidence based interventions to boost road safety and drastically reduce the daily human tragedies behind the alarming statistics.
- ❖ This will require strategic investments in road safety measures, concerted political will at the national, State and local levels, and a change of collective mindset — after all, every one of us is a road user in some way — to understand and tackle the scale and importance of the challenge.

#### Road accidents in India

- ❖ In India, road crashes are estimated to cost between 5% and 7% of national GDP. Road safety is a global problem, with 1.3 million people killed in road crashes every year. But almost one in every four road deaths



around the world takes place in India. Last week, the Government released a report that 2022 was the most fatal year for traffic crashes in India.

### Focus areas for better safety

- ❖ Priority areas must include enforcing the use of seatbelts not just for drivers but also for their passengers. Wearing a seatbelt reduces the risk of death among drivers and front seat occupants by upto 50%, and among rear seat occupants by 25%.
- ❖ Similarly, helmet use must be enforced among motorcyclists as well as their pillion passengers. Correct helmet use can lead to a 42% reduction in the risk of fatal injuries. Indeed, vulnerable road users, who include pedestrians, cyclists and the riders of two wheelers, account for almost three quarters of road deaths in India. And passengers unbelted in the back seat are not only risks to themselves upon impact but also to those in the front seat.
- ❖ Speeding must be reduced and there can be no tolerance for drink driving; a recent report by the Government revealed that speeding led to 70% of India's road crash deaths.
- ❖ Road infrastructure should be enhanced — too many roads are not in a safe condition, although government programmes in recent years have led to rapid improvements.
- ❖ Large scale public awareness campaigns such as the new UN global campaign for road safety #MakeASafetyStatement, involving international celebrities, must be undertaken to secure behavioural changes.
- ❖ The call to action is not new. The Sustainable Development Goals, created in 2015, include a target (SDG 3.6) to halve the number of global deaths and injuries from road crashes and a call (SDG 11.2) to make public transport safer, more affordable and more accessible to all. The good news is that we are already seeing steps in the right direction in India.
- ❖ The national government's implementation of the Motor Vehicles (Amendment) Act, 2019, and enhanced data collection from road crashes, are impactful measures that will help experts better understand where and why crashes are occurring, and, therefore, how to reduce them.

### The UN helmet

- ❖ Police in the major cities, such as the capital, New Delhi, are adopting modern technologies such as intelligent traffic management systems to effectively regulate traffic flows in a much better way and minimise the potential for collision.
- ❖ To help increase access to safe helmets, the Special Envoy has worked with helmet producers to produce a low cost ventilated United Nations standard helmet, for under \$20, including here in India.
- ❖ Your chances of surviving a road crash can vary enormously depending on what State you live in and what access you have to high quality emergency care services and proper aftercare.
- ❖ We also need to look increasingly at international best practices and successes and then adapt them to India's specific needs and circumstances.
- ❖ Road safety is a complex and multidimensional challenge, but the benefits that come with addressing it can be equally profound. What we need is a comprehensive safe system approach as envisaged in the UN's Second Decade of Action for Road Safety 2021-2030, and full implementation of the MVA (Amendment) Act 2019.

### Conclusion

- ❖ Ending the silent pandemic of road injuries will not only save lives but also strengthen the economy and improve the quality of life for everyone.

## UNDERSTANDING RAT- HOLE MINING

### Current events of national and international importance.

#### Context

- ❖ Two scientific methods of mining — vertical drilling and auger or horizontal drilling — were employed to rescue 41 workers on November 28 after 17 days of being trapped in the partially collapsed Silkyara tunnel in Uttarakhand. The last leg of the rescue involved rat hole mining. In the coal mines of Meghalaya, this crude method was banned by the National Green Tribunal (NGT) in 2014.

### What is rat hole mining?

- ❖ Rat Hole mining, of two types, is so named as it involves digging tunnels 34 feet deep, barely allowing workers to crawl in and out. They have to squat while extracting coal with pickaxes. The side cutting type of mining is usually done on hill slopes by following a coal seam — dark brown or black banded coal deposited within layers of rock— visible from the outside.
- ❖ The second type called box cutting entails digging a circular or squarish pit at least 5 sq. metre in width up to a depth of 400 feet. Miners who drop down in makeshift cranes or using rope and bamboo ladders dig horizontally after finding the coal seam. The tunnels are dug in every direction from the edge of the pit, resembling the tentacles of an octopus.

### Why is such mining banned?

- ❖ The government has little control over the land in Meghalaya, a Sixth Schedule State where the Coal Mines Nationalisation Act of 1973 does not apply. The landowners are thus also the owners of the minerals beneath. Coal mining boomed after Meghalaya attained statehood in 1972.
- ❖ However, the terrain and expenses involved discouraged mine owners from employing advanced drilling machines. So, labourers mainly from Assam, Nepal, and adjoining Bangladesh risked the hazards of rat hole mining — to earn thrice or four times as much as working in farms or construction sites.

### Dangers and adverse impacts of rat hole mining:

- ❖ It includes asphyxiation because of poor ventilation, collapse of mines due to lack of structural support, and flooding.
- ❖ Apart from issues of safety and health, unregulated mining has led to land degradation, deforestation, and water with high concentrations of sulphates, iron, and toxic heavy metals, low dissolved oxygen, and high biochemical oxygen demand. At least two rivers, Lukha and Myntdu, became too acidic to sustain aquatic life.
- ❖ These factors led to the NGT banning rat hole mining in Meghalaya in 2014 while observing: “...there is umpteen number of cases where, by virtue of rat hole mining, during the rainy season, water flooded into the mining areas resulting in the death of many...”
- ❖ Illegal mining and transportation of coal, as mentioned in the interim reports of a one man committee appointed by the High Court of Meghalaya, has continued despite the ban and the loss of lives.

### What led to the NGT ban?

- ❖ Environmentalists and human rights activists began flagging the hazards of rat hole mining in Meghalaya two decades ago. The campaign intensified after Impulse, a Meghalaya based NGO, began addressing the issue of human trafficking and child labour in such mines. They estimated that about 70,000 children mostly from Bangladesh and Nepal were employed in these mines because they were the right size to work in them. The NGT ban came a year later.

### Current Status

- ❖ Unlike in Chhattisgarh and Jharkhand, coal seams in Meghalaya are very thin. This, miners say, makes rat hole mining more economically viable than open-cast mining. The State has an estimated reserve of 576.48 million tonnes of lowash, high sulphur coal belonging to the Eocene age (3356 million years ago).
- ❖ The stakes for a section of locals have been so high that the State government has been under pressure to facilitate the resumption of mining legally.
- ❖ In May 2023, Meghalaya Chief Minister said that the Coal Ministry approved mining leases for 4 of the 17 prospective licence applicants. This would lead to the commencement of ‘scientific’ mining ensuring minimal environmental impact through sustainable and legally compliant extraction procedures.
- ❖ Anti-Mining activists, who are assaulted by miners off and on, said that ‘scientific’ would eventually be a fancy tag in a State where profit has driven coal mining.

### Conclusion

- ❖ Government should examine completely banning rat hole mining except for use in rescue operations, as seen in the recent Silkyara tunnel rescue.

## SCIENCE AND TECHNOLOGY

### HAEMOGLOBIN ISN'T USED ONLY IN BLOOD, SCIENTISTS DISCOVER

#### Context

- ❖ Textbooks have said for decades that haemoglobin is found in the red blood cells (RBCs), that it makes blood red, carries oxygen, and is essential for our survival.

#### 'Haemoglobin bodies'

- ❖ A new and serendipitous discovery has revealed that haemoglobin isn't used by RBCs alone. In a study published in Nature, scientists from China have reported that chondrocytes – cells that make cartilage, the connecting tissue between bones – also make haemoglobin and seem to depend on it for their survival. Feng Zhang, a pathologist in China, had been working on bone development since 2010.
- ❖ In 2017, when he was studying growth plates –cartilaginous tissue at the end of certain long bones that allow the bones to become longer –he stumbled upon a few spherical blob-like structures. They seemed to bear an uncanny resemblance to RBCs, and they contained haemoglobin.
- ❖ Picture what happens when oil is mixed into water: the oil separates out into little globules in a process called phase separation. That's what seemed to be happening in the chondrocytes in the cartilage as well. Dr. Zhang ascertained that the chondrocytes within the growth plates of newborn mice were not only producing large amounts of haemoglobin, but also that it was coalescing and forming large blobs without a membrane. The scientists called these blobs haemoglobin bodies, or Hedy.

#### The haemoglobin does something

- ❖ Now that they knew chondrocytes were making haemoglobin bodies, the question was: were the Hedy functional or not. To test this, the scientists used genetically modified mice, in this case mice in which the gene making haemoglobin had been removed. These mice produced almost no haemoglobin molecules and they died as embryos. But it turned out that if one looked closely at the growth plate cartilage tissue from these mice, most of the chondrocytes were dying.
- ❖ Removing the gene that made haemoglobin specifically in the cartilage tissue also resulted in the same outcome: cell death among the chondrocytes. It was clear that Hedy was essential for the chondrocytes to live.

#### An oxygen store

- ❖ Now they knew that the absence of haemoglobin caused the chondrocytes to go through some sort of low-oxygen stress. They then wanted to see how normal and haemoglobin-free chondrocytes behaved when there is little oxygen in the cells' environment. The researchers proceeded to test the cells in a low-oxygen, or hypoxic, environment. In the presence of haemoglobin, the cells seemed to release more oxygen. But in the absence of haemoglobin, the chondrocytes started dying. This further confirmed their hunch that the haemoglobin in the chondrocytes was most likely storing oxygen and supplying it to the cells when required.

#### Conclusion

- ❖ What is important in this paper is that it breaks down barriers between haematology and skeletal biology, and shows that, in fact, these fields are more connected than it seems. The discovery of functional haemoglobin in cartilage also leads to the possibility that it plays a role in certain joint diseases. There are many bone deformities that develop from defects in chondrocytes. Scientists hopes this discovery can reinterpret the mechanisms underlying some joint diseases.

### UNDERSTANDING THE FUNDAMENTALS OF HOW ELECTRICITY IS TRANSMITTED

#### Introduction



- ❖ Energy exists in many forms, like light, sound, heat, etc., power and power transmission also exist in many forms. However, electric power transmission is more complicated because of the multiple phases of electric current, and factors like voltage, impedance, frequency, etc.

### Power supply

- ❖ Any power supply system has three broad components: generation, transmission, and distribution.
- ❖ Electricity is generated at power plants as well as at smaller renewable-energy installations.
- ❖ Then it is transmitted using a distributed network of stations, substations, switches, overhead and underground cables, and transformers, among other elements.
- ❖ Finally, it is distributed to consumers in a standardised way, befitting the needs of various machines and applications.

### Basics of transmitting electricity

- ❖ First, in any conductor that transports electric current, the transmission efficiency is higher at lower current and higher voltage.
- ❖ This is because the energy loss during transmission increases as the square of the current, whereas the amount of voltage increase corresponds on a 1:1 basis with the amount of current decreased.
- ❖ That is, if voltage is increased by five units, the amount of current will drop by five units, but the amount of energy lost will be reduced by 25 units.
- ❖ This is the purpose of transformers: they increase the voltage and reduce the current before feeding into transmission lines, and the reverse when receiving current to be supplied to consumers.
- ❖ Second, the cables that move the current still have some resistance, which results in some energy loss.
- ❖ The amount of loss can be controlled by adjusting the cable's thickness: the thicker it is, the less energy is lost, but the cost increases. So when the cost of the cable's material is high, the cables are thinner.
- ❖ Third, the longer the distance of transmission, the lower the transmission cost.
- ❖ All these factors are further complicated by the use of alternating current (AC).
- ❖ AC can be modified more easily in transformers than direct currents (DC) and also has higher transmission efficiency.
- ❖ But when the AC frequency is higher, the amount of resistance the current encounters in the material increases.
- ❖ Engineers model all these factors for a given network to understand how much electrical energy will be lost between generation and consumption.

### Power transmission

- ❖ In a three-phase AC circuit, each wire transmits an AC current in a different phase.
- ❖ From a power station, the wires are routed to transformers that step-up their voltage.
- ❖ Then, they are suspended from transmission towers, which must be stable and properly wired, as they travel long distances.
- ❖ Insulators in contact with the wires draw away some current if there is a surge in the line; circuit-breakers 'break' the circuit if there is too much.
- ❖ The towers are also grounded and equipped with arresters that prevent sudden increases in voltage — such as due to a lightning strike — from affecting the wires.
- ❖ Similarly, dampers prevent vibrations in the wires from affecting the towers' stability. Switches are used to control the availability of current and to move currents between different lines.

### Operation of grids

- ❖ As mentioned earlier, transmission is situated between production and distribution.
- ❖ A national grid includes all three components, and as a result transmission also has to account for the particulars of power production at different types of sources, at various locations, and how and where that power is consumed.
- ❖ For example, some sources — like coal-fired or nuclear reactors — can produce energy continuously, whereas renewable energy sources are intermittent.
- ❖ So grids also have storage facilities that store electrical energy when there's a surplus supply and release it in times of deficit.

- ❖ Grids also need to respond to failure in different parts of the network and prevent them from carrying over to other parts, adjust voltages in response to demand, control the AC frequency, improve the power factor etc.

### Conclusion

- ❖ A grid becomes a wide-area synchronous grid if all the generators connected to it are producing an AC current at the same frequency. India's national grid is also a wide-area synchronous grid. Such grids result in lower power cost but also require measures to prevent cascading power-supply failures.

## HOW WAS THE FIRST VACCINE FOR CHIKUNGUNYA APPROVED?

### Context:

- ❖ Recently, the world's first vaccine for chikungunya was approved by the Food and Drug Administration (FDA) in the U.S. The vaccine has been manufactured by Valneva under the brand name Ixchiq. It has been approved for administration in people who are 18 years or older, and are at increased risk of exposure to the virus.
- ❖ Ixchiq is administered as a single dose by injection into the muscle. It contains a live, weakened version of the chikungunya virus and may cause symptoms in the vaccine recipient similar to those experienced by people who have the disease.

### About chikungunya

- ❖ Chikungunya, is characterised by severe joint pain and impaired mobility, and comes with fever. It is a viral infection (CHIKV) transmitted primarily by the *Aedes aegypti* and *Aedes albopictus* mosquitoes and has been described as "an emerging global health threat."
- ❖ The WHO fact sheet says Chikungunya is prevalent in Africa, Asia, and the Americas; but sporadic outbreaks have been reported in other regions. As per the National Centre for Vector Borne Diseases Control, India had above 93,000 suspected chikungunya cases until September in 2023.
- ❖ Since 2004, outbreaks of CHIKV have become more frequent and widespread, partly due to viral adaptations allowing the virus to be spread more easily by the *Aedes albopictus* mosquitoes.
- ❖ The joint pain is often debilitating and varies in duration; it can last for a few days, but also be prolonged over months. Other symptoms include joint swelling, muscle pain, headache, nausea, fatigue and rash.
- ❖ While severe symptoms and deaths from chikungunya are rare and usually related to other coexisting health problems, it is believed that the numbers are generally underestimated, because chikungunya is often misdiagnosed as dengue or zika, as symptoms can seem similar.
- ❖ As of now, there is no cure, only symptomatic relief, with analgesics to help with the pain, antipyretics for the fever, rest, and adequate fluids. Prevention includes mosquito control activities, primarily falling under public health outreach and routine civic maintenance. Individuals are also advised to use medicated mosquito nets and ensure that there is no water stagnation in any containers at home, in order to prevent the breeding of mosquitoes.

### Indian Government Initiative to Control Chikungunya

- ❖ National Vector Borne Disease Control Programme (NVBDCP) is a comprehensive programme for prevention and control of vector borne diseases namely Malaria, Filariasis, Kala-azar, Japanese Encephalitis (JE), Dengue and Chikungunya. It works under the Ministry of Health and Family Welfare.
- ❖ Integrated Disease Surveillance Programme (IDSP) launched during 12th Plan (2012–17) under the National Health Mission, sets up a Central Surveillance Unit (CSU) at Delhi, State Surveillance Units (SSU) at all State/Union Territories (UTs) head quarters and District Surveillance Units (DSU) at all Districts. Its objectives are to strengthen/maintain decentralized laboratory based and IT enabled disease surveillance systems for epidemic prone diseases to monitor disease trends, to detect and respond to outbreaks in the early rising phase through trained Rapid Response Teams (RRTs).

### Conclusion

- ❖ Hopefully, inspired by the FastTrack pathway drawn up by research into COVID, this approval will fast track the roll out of vaccines in countries where chikungunya is more prevalent, including Brazil, Paraguay, India and parts of western Africa.

## A RENEWED FOCUS ON EMERGING TECHNOLOGIES

### Introduction:

- ❖ Emerging technologies, an euphemism for capabilities that rely on a combination of cyber technology, Artificial Intelligence (AI), unmanned systems, and advanced computing, is in vogue among most militaries.

### Emerging technologies for Indian armed forces:

- ❖ Recently, the Chief of the Army Staff said that the Army had identified 45 niche technologies in the field of military applications.
- ❖ Similarly, under 'UDAAN', the Indian Air Force (IAF) is using AI, cyber and virtual reality to address its operational, logistical, and training needs.
- ❖ Indian Air Force (IAF) Centre of Excellence for Artificial Intelligence (CoE for AI) under the aegis of UDAAN (Unit for Digitisation, Automation, Artificial Intelligence and Application Networking) was inaugurated in 2022.
- ❖ The Navy, too, says that it is moving forward with emerging technologies, which includes an Integrated Unmanned Roadmap, while also encouraging indigenisation under project 'Swavlamban', Indian Navy's Maiden Naval Innovation and Indigenisation Seminar.
- ❖ Not to be left out, the Defence Ministry, through 'AIDef'- 'Artificial Intelligence in Defence' (AIDef) symposium and exhibition- has showcased its initiatives in this realm, which includes the Defence AI Council and the Defence AI Project Agency. Both these efforts are aimed towards incorporating AI into various allied organisations, such as Defence PSUs (Public Sector Undertakings) and the Defence Research and Development Organisation (DRDO).

### A long way to go

- ❖ For these initiatives to be successful, the military must be cognisant that technology is not a silver bullet and should not be imagined as a 'plug and play' — readily adjusted to existing practices. Instead, it needs to be accompanied by organisational and doctrinal changes and a willingness to share data with the civilian environment.
- ❖ To some, emerging technologies is just the latest fad. Indeed, most accounts of the Russia-Ukraine war attest to the old fashioned dominance of the artillery, manoeuvre warfare, and infantry tactics.
- ❖ But emerging technologies represent a dilemma that militaries have faced since time immemorial — how to best respond to change. Effectively integrating emerging technologies requires the military to work more closely with civilians than ever before.
- ❖ Some call it "collaborative defence", whereby the military partners with scientists, academics, technologists, entrepreneurs and the wider industry, as critical in incorporating such capabilities. From that perspective, India's defence organisations and the military still have some way to go.
- ❖ To be fair, the Indian military's focus on these emerging technologies is not new. India's first drone platforms were inducted in the late 1990s by the Army followed by more procurements in the 2000s by the IAF and Navy.
- ❖ Military leaders have recognised the cyber threat for some time, pointing to issues such as 'information warfare'. Through its indigenous space programme, India has launched communication satellites to improve its military communications capabilities.

### Way forward: Change in approach

- ❖ First, jointness, defined as interoperability between the three services, remains problematic. Chief of Defence Staff (CDS) has an explicit mandate to create joint theatre commands (JTCs). While the strategic community waits for such a development, the need for interoperability is essential especially among the host of emerging technologies.
- ❖ Second, there is a need to revisit existing human resources practices in armed forces. For the most part, the Indian military prioritises generalisation over specialisation. This might work in conventional operations, but specialised technology requires greater technical expertise. The services should therefore give extended tenures and create promotion pathways for officers intellectually inclined towards this domain.
- ❖ Third, both civilian defence organisations and the military needs to be more open with sharing data, especially to fully realise the promise of AI. Traditionally, secrecy concerns have stymied data availability.



However, one can create a structure with adequate safeguards, which allows civilians to work alongside the military to overcome such concerns.

- ❖ Fully realising the potential of emerging technologies requires altering existing organisations and approaches. Such changes should begin from the Defence Ministry. Instead of letting its efforts be led by generalist officers, the Ministry should be more open to incorporating technocrats and qualified personnel, if necessary, from the private sector and wider industry.

### Conclusion

- ❖ The current efforts in defence reforms in India has put the military on the road to perhaps its biggest transformation yet. Realising the promise of this vision would require greater willingness to engage with the talent that resides outside existing defence organisations.

## ENVIRONMENT

### STOCKTAKING CLIMATE FINANCE — A CASE OF CIRCLES IN RED INK

#### Context

- ❖ Climate finance has a crucial role in retaining the trust of the developing countries in future climate change negotiations. The issues relating to climate finance are likely to be prominent in the United Nations Climate Change Conference or UNFCCC Conference of the Parties (COP 28) meeting (2023), in Dubai (UAE).

#### Climate Change 2023: Synthesis Report findings:

- ❖ It comes in the context of the Synthesis Report providing the main scientific input to the global stocktake at COP. The report says that the current temperature increase at 1.1° Celsius is responsible for frequent hazardous weather.
- ❖ Thus, the developed countries and climate vulnerable countries are likely to demand a ramping up of mitigation action by the developing countries — which is likely to be countered with the demand that the developed countries have not been able to meet the mark of a mobilisation of \$100 billion per year in climate finance by 2020 as committed at the Copenhagen summit of UNFCCC.
- ❖ The sum is inadequate in terms of the challenges faced by the developing countries in switching over to a low carbon development pathway and climate resilient development. Providing finance to developing countries is based on the principle of the Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC).

#### Estimating adequate climate finance

- ❖ The developed countries are required in mandatory terms to provide financial resources to developing country parties. Under Article 9 of the Paris Agreement on Climate Change, it is also mandatory for the developed countries to provide in their Biennial Update Reports (BUR), information relating to the financial resources which they have provided. At the Copenhagen Change Conference in 2009, the developed countries made the commitment to mobilise \$100 billion per year by 2020.
- ❖ Further, the developed countries are required, in accordance with the decision accompanying the atmosphere of Paris Agreement, to collectively mobilise \$100 billion through 2025, before a new collective quantified goal (NCQG) 'from a floor of \$100 billion per year is to be set at the end of 2024'.
- ❖ At the 26th UNFCCC in Glasgow in 2021, the developed countries noted, with deep regret, of being able to mobilise only a total of \$79.6 billion.
- ❖ The Paris Agreement is based on the self determined efforts of all the parties inscribed in the nationally determined contributions (NDCs), which contain the mitigation efforts to be made by a party for the next 5 years.

- ❖ Entire NDCs put together project a picture of overshooting the 1.5° C temperature goal. Going by the needs of countries in the Global South expressed in their NDCs, the amount quantified for the first time touches close to \$6 trillion until 2030.
- ❖ India's 3rd BUR says that its financial needs derived from its NDCs for adaptation and mitigation purposes for 2015--30 are \$206 billion and \$834 billion, respectively.

### Unclear burden sharing formula

- ❖ The developed countries are mandatorily required to provide financial resources to developing country parties, but there is no agreed approach among developed countries to share the burden of this goal. One analysis suggests that the United States provided just 5% of its fair share in 2020.
- ❖ Without any mandatory formula for collecting money, it is difficult to predict how the said money or the NCQG for climate finance will be mobilised. Neither the UNFCCC nor the Paris Agreement mention the criterion for mobilisation. Instead, the mobilisation is done with the help of a replenishment process.
- ❖ Global Environment Facility (GEF), a UNFCCC--designated funding agency providing grant and concessional loan to developing countries, is replenished every four years.
- ❖ A similar approach has been borrowed into the Green Climate Fund (GCF) by the developed countries to mobilise part of the \$100 bn finance for developing country parties to switch over to low emissions and climate resilient development path. GCF had its second replenishment recently in 2023, in which only 25 countries out of 37 developed countries met in Bonn, pledging to contribute \$9.3 billion.

### Replicate this action

- ❖ Strong political will, perceived urgency and enlightened self interest of the elite Global North were writ large in the case of a perceived collapse of global public good (global financial stability) in 2009--10 when the G-20 governments quickly responded to the global financial crisis, getting \$1.1 trillion in a few weeks to support the International Monetary Fund (IMF) and multilateral development banks to save the global financial system.
- ❖ Unfortunately, these factors are missing when it comes to the necessary climate finance transfers from developed to developing countries to safeguard another global common — the atmosphere.

## GIVING THE URBAN INDIAN A BETTER LIFE

### Context

- ❖ The theme of World Cities Day (October 31) this year was "Financing Sustainable Urban Future for All." Finances must be channelled in the right direction such that urban futures which are being cut short on account of flawed urbanisation are checked, and, in turn, cities made liveable and safe. It is atrocious that air pollution is taking away over 10% of our life expectancy.

### Pollution and India

- ❖ A report released by The Energy Policy Institute at Chicago (EPIC) shows that out of the 50 most polluted cities in the world, 39 are in India.
- ❖ Pollution directly affects the health of people, and an average Indian loses 5.3 years of his life expectancy due to this; for the residents of Delhi, it is 11.9 years.
- ❖ Pollution results in burning eyes, irritation of the nose and throat, coughing, choked breath, and asthma apart from causing cardiovascular diseases.
- ❖ Bad air is not limited to the Indo-Gangetic plains anymore where the argument of inversion of temperature and slowing down of wind speeds was considered as a factor for poor air quality.
- ❖ The situation is getting to be bad even in India's coastal cities.

### The expansion of 'grey' infrastructure

- ❖ The overall development strategy of urban development in India — apart from proper execution of enforcement by agencies — needs a paradigm shift.
- ❖ The need now is to turn to sustainable and "ecological urbanization".

- ❖ The trajectory of urban development, where the focus is more on real estate development, a widening of roads, allowing large fuel guzzling vehicles on them, in turn squeezing the space meant for pedestrians, and redevelopment are the major reasons for increased pollution in Indian cities.
- ❖ Road dust, concrete batching, polluting industrial units and their extension in the cities, and vehicular emissions are key factors too.
- ❖ It is estimated that motorised transport alone is the cause for 60% of urban pollution.
- ❖ The green lungs of the cities, water bodies, urban forests, and green cover on urban commons, and urban agriculture have all reported shrinkage, even as “grey” infrastructure has seen rapid expansion. Hence, the priorities need to be set right.
- ❖ City residents, unfortunately, have hardly any participatory role and are forced to become passive bystanders in the urbanisation process.

### Focus on public transport

- ❖ There is a compelling need to have an alternative strategy of city building, where the focus is on more public transport.
- ❖ There needs to be good public transport, with investment in buses for towns and cities.
- ❖ It is estimated that nearly 10 lakh buses would need to be added to the existing bus fleet in cities to meet the demands of urban mobility.
- ❖ Strong steps need to be taken to control private motorised vehicular movement in the cities.
- ❖ A congestion tax being levied on private car owners driving during peak hours can be thought of.
- ❖ Likewise, an odd number-even number plate formula can be another important intervention.
- ❖ Delhi has a Graded Response Action Plan, or GRAP (a set of anti-air pollution measures), the moment air quality deteriorates.
- ❖ There should be zero acceptance of industrial pollution and real-time monitoring must become a reality.
- ❖ There must be street supervision by residents instead of waiting for the statutory bodies to react, which urban local bodies can ensure.
- ❖ Urban commons (ponds, water bodies, urban forests, parks, playgrounds) are another major area that should not at all be allowed to be taken over by either public or private bodies for private gains.
- ❖ Redevelopment across the country has resulted in pollution. A city’s ecology is one of the first casualties and there is hardly any meaningful afforestation within a city. Planting trees 50 kilometres away from the city does not help in curtailing pollution in the city.

### Strengthen governance

- ❖ So-called solutions such as smog towers or even watering roads are just cosmetic.
- ❖ People’s empowerment through the city’s governance architecture is a firm step forward.
- ❖ Pollution guides and standard operating procedures for various line departments and agencies must not only be made readily available to the people but should also become a part of the way of life in the city.
- ❖ There must be a strong GRAP-like standard operating procedure. Likewise, the medical fraternity must support the putting out of a public health advisory.

### Conclusion

- ❖ We cannot afford to let our lives be shortened by reasons such as air pollution. The poor and the marginalised are the least contributors to pollution but are the segment who are most exposed to it and who pay a heavy price. They need a better life.

## COP 28: INDIA’S EQUITY DEMAND

### Context:

- ❖ There is an almost linear relationship between global warming and cumulative carbon dioxide (CO<sub>2</sub>) emissions. The United Nations Framework Convention on Climate Change (UNFCCC) in 1992 noted that per capita emissions in developing countries are still “relatively low” and that their share in the global emissions will grow to meet their social and developmental needs.

### CBDR-RC Principle



- ❖ The Convention recognises the ‘common but differentiated responsibilities and respective capabilities’ (CBDR-RC) principle. This means different States have different responsibilities and respective capabilities in tackling climate change.
- ❖ This principle has been reaffirmed in the Paris Agreement, whose main aim is to hold “the increase in the global average temperature to well below 2 degrees Celsius above pre industrial levels” and pursue efforts “to limit the temperature increase to 1.5 degrees Celsius above pre industrial levels”.
- ❖ According to the Intergovernmental Panel on Climate Change’s Sixth Assessment Report (IPCC AR6), every 1,000 billion tonnes of CO<sub>2</sub> emissions causes an estimated 0.45 degrees Celsius rise in the global surface temperature.
- ❖ Axiomatically, limiting the rise in global temperature to a specific level means limiting cumulative carbon dioxide emission to within a carbon budget.

#### **What is the global carbon budget?**

- ❖ The term ‘global carbon budget’ refers to the maximum cumulative global anthropogenic CO<sub>2</sub> emissions – from the preindustrial era to when such emissions reach net zero, resulting in limiting global warming to a given level with a given probability.
- ❖ The remaining carbon budget indicates how much CO<sub>2</sub> could still be emitted, from a specified time after the preindustrial period, while keeping temperature rise to the specified limit.
- ❖ The IPCC AR6 has shown that the world warmed by a staggering 1.07 degrees Celsius until 2019 from pre industrial levels, so almost 4/5ths of the global carbon budget stands depleted. Only a fifth remains to meet the target set in the Paris Agreement.
- ❖ For a 50% chance of limiting warming to 1.5 degrees Celsius, the U.S. would have to reach net zero emissions (NZE) in 2025, rather than 2050; and the EU28 bloc by 2031 instead of 2050. India has committed to reach NZE by 2070.

#### **Who’s responsible for cumulative global emissions?**

- ❖ According to the IPCC AR6, the developed countries have appropriated a disproportionately larger share of the global carbon budget to date. The contribution of South Asia — which includes India — to historical cumulative emissions is only around 4% despite having almost 24% of the entire world population.
- ❖ The per capita CO<sub>2</sub> FFI (fossil fuel and industry) emissions of South Asia was just 1.7 tonnes CO<sub>2</sub> equivalent per capita, far below North America and also significantly lower than the world average (6.6 tonnes CO<sub>2</sub>eq. per capita).

#### **How does the carbon budget matter for India?**

- ❖ The global carbon budget for a given temperature limit is a global resource, common to the entire world, but is exhaustible and limited and with only equitable methods of sharing it, consistent with the foundational principles of the UNFCCC.
- ❖ India must recognise a ‘fair share of the carbon budget’ as a strategic national resource whose reserves are depleting rapidly due to overexploitation by developed countries.
- ❖ In a rapidly depleting global carbon budget, if we fail to deploy resources at our command to forcefully use it as a strategic national resource, we will be short changed by new colonial techniques of developed countries.
- ❖ In almost all the emissions scenarios estimated by the IPCC, the world breaches an increase of 1.5 degrees Celsius from pre industrial levels in the early 2030s.
- ❖ In 2022, oil, coal and gas accounted for 30%, 27% and 23% of the world’s total energy, while solar and wind energy together contributed only 2.4%. The world is still largely powered by nonrenewable energy.

#### **Global North vs Global South**

- ❖ Developed countries have tried to browbeat developing countries into accepting rapid, economy wide changes. At the COP 26 talks in Glasgow, they forced the issue of phasing down the use of coal but then backtracked by reopening coal plants across Europe after the Russia- Ukraine war created an energy crisis.
- ❖ This has illustrated that the immediate phaseout of fossil fuels is infeasible in the face of shocks and also limits developing countries’ access to their ‘room to grow’.

#### **What should India’s stance be at COP 28?**

- ❖ According to the NITI Aayog, U.N. Development Programme's (UNDP) Multidimensional Poverty Index (MPI) Report 2023 review, India has been able to lift more than 135 million poor out of poverty in less than five years (2015-21).
- ❖ India has also just extended food security welfare measures to more than 800 million people in the country, under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY), highlighting the magnitude of the challenge of poverty eradication after COVID-19.

### Role of development

- ❖ Development is the first defence against climate change. How long will developing countries have to divert their scarce resources, manpower, and attention to meeting global problems created by developed countries?
- ❖ It is imperative that developing countries receive a fair and equitable share of their carbon budget alongside stronger and more fruitful commitments from developed countries – including the promised but unmet climate specific new and additional finance.
- ❖ The Indian government has led from the front to foster international consensus to tackle climate change. To this end, India has set up the International Solar Alliance (ISA), Coalition for Disaster Resilient Infrastructure (CDRI), and Global Biofuel Alliance (GBA).
- ❖ Through the 'Lifestyle for Environment' (LiFE) mission, the Indian government also aims to spread awareness of good lifestyle practices and establish that sustainable lifestyles are the best way forward.

### UNFCCC COP 28

- ❖ Scientists estimate that at a conservative price of \$50/tCO<sub>2</sub>eq, developed countries' carbon debt to the world is pegged at over \$51 trillion. Based on India's historical emissions (1850- 2019), it has a carbon credit equivalent of 338 GtCO<sub>2</sub>eq., equal to around \$17 trillion at \$50/tCO<sub>2</sub>eq.
- ❖ Without finance and technology as promised in 1992 at the Rio Earth Summit, developing countries stare at an even more unfair world. The cover decision of the Glasgow Climate Pact recorded an unprecedented "regret" on the failure of the developed countries to provide US \$100 billion dollars a year, as promised at the COP 15 talks in Copenhagen in 2009.

### Conclusion

- ❖ At COP 28, India must demand a fair share of its carbon budget or equivalent reparations to bring about fairness within the global order. Only development brings with it an assurance to tide over the roller coasters of climate change.

## NEED FOR CLIMATE-SMART AGRICULTURE IN INDIA

### Introduction

- ❖ The two most important issues facing humanity in the 21st century are climate change and food insecurity. The world's southern continents are reportedly experiencing severe drought due to climate change, which negatively impacts agricultural production and farmers' livelihoods.

### Impacts of climate change on food systems

- ❖ Both population expansion and dietary changes are contributing to an increase in the demand for food. As a result of climate change, traditional farming practices are becoming less productive. Farmers are taking a variety of adaptation measures to reduce the negative effects of climate change.
- ❖ The need for a holistic strategy is driven by climate change's dual challenges of adaptation and mitigation, and the pressing need for agricultural production to rise by 60% by 2050 in order to fulfill food demand.

### A viable option

- ❖ As a viable option, climate- smart agriculture (CSA) provides a holistic framework.
- ❖ Food and Agriculture Organization (FAO) said in 2019: "Climate- smart agriculture is an approach for transforming food and agriculture systems to support sustainable development and safeguard food security under climate change.

### CSA comprises three pillars or objectives

- ❖ Sustainably increase agricultural productivity and incomes
- ❖ Adapt and build resilience to climate change
- ❖ Reduce/remove GHG (greenhouse gases) emissions, where possible.

- ❖ Dimensions of climate-smart practices include water-smart, weather-smart, energy-smart, and carbon-smart practices. They improve productivity, deal with land degradation, and improve soil health.

#### **Future impacts of climate change on agricultural productivity**

- ❖ In India, crop yield decline owing to climate change (between 2010 and 2039) could be as high as 9%. In order to combat climate change and sustainably boost agricultural output and revenue, a radical reform of the agriculture industry is required.
- ❖ United Nations' Sustainable Development Goals (SDG) aim to end hunger and enhance environmental management; CSA's foundation is in achieving these goals through sustainable agriculture and rural development.
- ❖ National Action Plan on Climate Change (NAPCC) emphasises the role of climate resilient agriculture in India's adaptation measures.
- ❖ Programmes such as the Soil Health Card Scheme (SHC) use precision nutrient management to optimise agricultural methods. The concept of precision farming is still somewhat novel in India.

#### **Advantages of climate smart agriculture (CSA)**

- ❖ CSA promotes crop diversification, increases water efficiency, and integrates drought resistant crop types, all of which help lessen the disruptive effects of climate change.
- ❖ The importance of CSA lies in its ability to increase agricultural output while maintaining ecological stability, which is essential for long term food security and sustainable resource usage in a warming planet.
- ❖ By reducing exposure to climate related dangers and shocks, CSA increases resilience in the face of long term stressors like shorter seasons and erratic weather patterns.
- ❖ CSA also helps raise the economic autonomy of farmers. CSA causes a dramatic change in farming communities' economic and social structure by distributing information about and providing access to climate resilient methods.
- ❖ As the climate changes, farmers, significantly those already disadvantaged, can gain enormously from adopting climate-smart techniques. The increasing popularity of CSA is a promising indicator for the future of biodiversity conservation.
- ❖ CSA's ecosystem based approach and different crop varieties help cropland and wild regions coexist together. This collaborative effort helps to safeguard native plant species, keep pollinator populations stable, and mitigate the effects of habitat degradation.

#### **Agriculture and climate change**

- ❖ CSA aids in enhancing farmland carbon storage. The Paris Agreement goal of limiting global warming to 2 degree Celsius above pre-industrial levels by reducing GHG emissions is tied directly to the success of the CSA.
- ❖ Agroforestry and carbon sequestration are two examples of CSA measures that could help India meet its international obligations and contribute to the global fight against climate change.

#### **A unique juncture**

- ❖ The majority of Indian farmers are small or marginal. Therefore, CSA can play a significant role in helping them increase their profits.
- ❖ National Adaptation Fund for Climate Change, National Innovation on Climate Resilient Agriculture, Soil Health Mission, Pradhan Mantri Krishi Sinchayee Yojana, Paramparagat Krishi Vikas Yojana, Biotech-KISAN, and Climate Smart Village are a few examples of government initiatives in India focusing on CSA.
- ❖ Various public and private sector entities such as farmer producer organisations (FPOs) and NGOs are also working towards the adoption of CSA.

#### **Conclusion**

- ❖ CSA has the potential to assure food security, empower farmers, and protect our delicate ecosystems by merging innovation, resilience, and sustainability. In the face of a changing climate, the path of CSA stands out as a source of inspiration and transformation for a world working to ensure a sustainable future.

## **FLEET ELECTRIFICATION TO TACKLE URBAN POLLUTION**

### **Introduction**



- ❖ The air quality index (AQI) in many Indian cities has entered the red zone several days this year. Millions of people have to face serious health hazards due to recurring increases in air pollution. It is clear that mitigation strategies have to be prioritised.

### Air quality index (AQI)

- ❖ AQI by Central Pollution Control Board (CPCB), under the Union Ministry of Environment, Forests and Climate Change.
- ❖ 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, NO<sub>2</sub>, SO<sub>2</sub>, CO, O<sub>3</sub>, NH<sub>3</sub>, and Pb.
- ❖ As per two seminal studies pertaining to Delhi, the Urban Emission (2015) and the TERI study (2018), a significant contributor to urban smog is PM<sub>2.5</sub> and PM<sub>10</sub> pollution, which is caused by the transport and construction sector.

### Increase in truck fleet

- ❖ About 9 lakh new trucks are added to Indian roads every year to an already running fleet of 70 lakh trucks. India carries over 2 trillion tonne kilometres of freight on trucks annually. These trucks consume over one fourth of Indian oil imports and contribute to over 90% of road transport CO<sub>2</sub> emissions.
- ❖ If all these new trucks are powered by diesel fired internal combustion engines vehicles, as is the case today, our cities will face a greater onslaught of PM<sub>2.5</sub> pollution.
- ❖ Thankfully, India has already electrified rail freight transportation, but that caters to only about 20% of the freight carried in the country. On roads, India's electric vehicle penetration rate has crossed the 6% mark, but electric trucks remain a challenge due to upfront costs and charging infrastructure constraints.

### Way forward

- ❖ Government is aggressively electrifying the bus fleet, and sets electrification targets for bus aggregators. However, the focus must extend to diesel trucks and dust mitigation — significant PM sources requiring immediate attention. This is important both from an energy security perspective and sustainability perspective.
- ❖ In this era of urgency, where every breath counts, deploying solutions swiftly is paramount. The recent demand for 7,750 e-trucks in India by 2030, if it materialises, will result in the country saving over 800 billion litres of diesel till 2050.
- ❖ However, the Indian truck fleet is likely to reach a figure of 1.7 crore in 2050. Hence, there is a need to push top gear on the pace of transition to e-trucks.
- ❖ Public funding alone cannot meet the transformational scale required. A pipeline of bankable projects, effectively structured, which can attract private and institutional capital is the need of the hour.
- ❖ Though the victory achieved (more than 50% electric vehicle penetration) in three wheelers' electrification in India is an important milestone for the 2070 net zero agenda, transport sector decarbonisation pathways have to be led by truck electrification.

### Green freight corridors

- ❖ Declaring some of the expressways and national highways as green freight corridors will have a demonstration effect in the country. Accelerating feasibility studies, demand aggregation, supplier readiness, and a prudent risk allocation strategy are required to create green freight corridors in India. Such corridors can first evolve in small stretches of 500 kilometres on routes with heavy truck movement.

### Conclusion:

- ❖ Innovative financial instruments, incentivisation of charging infrastructure, facilitation of entrepreneurial efforts, and a conducive regulatory environment in the country can bring forth the much-needed breakthrough for truck electrification in India.

## UNPACKING THE DUBAI CLIMATE MEETING/TIME FOR ACTION

### Introduction

- ❖ The next fortnight will see world leaders, industrialists, activists, and indigenous peoples converge at the 28th edition of the Conference of the Parties (COP). This annual affair is an attempt to inch ahead on getting

at least 190 countries, all members of the United Nations Framework for Climate Change (UNFCCC), to act on weaning their economies off fossil fuels.

### Goal of UNFCCC Conference of Parties

- ❖ The current goal is to make good on a collective commitment made by countries in Paris, in 2015, to strive to hold global temperatures to no higher than 1.5°C above pre industrial levels by the end of the century and definitely below 2°C.
- ❖ Despite countries unanimously agreeing that humanity will collectively bear a huge price if these limits are breached, and nearly all major economies are framing grand national plans to show how they are doing 'their bit', the science says that instead of being cut 8% annually, emissions have grown 1.2% from 2021-22.
- ❖ At this rate, the world will warm 2.53°C by the end of the century. There have already been 86 instances just this year of global temperatures breaching the dreaded 1.5°C threshold.

### Principles of climate action

- ❖ In the nearly three decades of COP meetings, the major economies have agreed on three broad principles.
- ❖ Countries that rapidly industrialised in the 20th century have disproportionately emitted more carbon than their 'fair share' given the population sustained.
- ❖ Economic growth premised on fossil fuel consumption, while cheaper per unit than renewable energy, spells disaster.
- ❖ Developing countries and those with minimal industrial infrastructure today must be compensated for adopting costlier, but cleaner, non-fossil fuel sources for growing their economies.
- ❖ There is also a consensus that the countries already weathering climate disasters must be compensated and also paid to bolster their infrastructure.
- ❖ However, getting all countries to actually act on these principles is onerous given the mutual suspicion, the spirit of deglobalisation, and the fear of political reprisal that heads of governments face within their constituencies.
- ❖ These themes are expected to play out this year too. Two major issues are expected to take the stage: the conclusion of the Global Stocktake and the operationalisation of the Loss and Damage Fund (L&D Fund or LDF). However, there is no clarity on the size of the fund and the individual contributions by countries.
- ❖ The L&D Fund is based on the "polluters pay principle" which says that the polluter is liable for paying the cost of remedial action and compensation for the victims of environmental damage caused by their actions. The developed nations, which are mostly responsible for industrial emissions, must pay the poorer nations that have made negligible contribution to global warming.
- ❖ At UNFCCC COP 27 in Egypt in 2022, it was agreed that the Loss and Damage Fund (LDF) must be provided to nations vulnerable to or impacted by climate change consequences. COP 28 is expected to finalise and declare the rulebook on the LDF.

### Conclusion

- ❖ While COPs, by nature, are self congratulatory when all they deliver are agreements with elaborate caveats, COP28 must strive to live up to its declared goal of being a conclave that compels its signatories to take definitive action.



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