



# CSB IAS ACADEMY

*The road map to Mussorie..*

## CURRENT AFFAIRS



**JULY (16 to 31) 2023**

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# CULTURE AND HERITAGE

## 1. The Ministry of Culture and the Indian Navy sign an MoU to revive the “ancient stitched shipbuilding method (Tankai method)”

### Context:

The Ministry of Culture and Indian Navy have entered into a Memorandum of Understanding (MoU) to revive and preserve the 2000-year-old technique of shipbuilding known as the Tankai method.

### About Tankai method:

- The Tankai method is a 2000-year-old technique of shipbuilding. It is also known as ‘stitched shipbuilding method’.
- In this method, the ships are constructed by stitching wooden planks together rather than using nails.
- This method offers flexibility and durability to ships making them less susceptible to damage from shoals and sandbars.
- The arrival of European ships led to a shift in shipbuilding techniques. But this art of stitching ships has survived in a few coastal regions of India, primarily for small local fishing boats.

### How is the Ministry of Culture planning to revive the Tankai method?

- The Ministry of Culture and Indian Navy have entered into a Memorandum of Understanding (MoU) to revive the Tankai method.
- As per the MoU, the plan is to construct an ocean-going wooden stitched sail ship using the ancient Tankai method.

- Significance: The significance of this stitched ship project extends beyond its construction. It aims to revive the maritime memory and instill a sense of pride in India’s rich maritime heritage among its citizens.

- Additionally, it aims to promote cultural memories among the Indian Ocean littoral countries.

### UPSC Prelims point: Tankai method

## 2. A fascinating fusion of rock art at Rudragiri hillock

### Context:

Rudragiri hillock stands as a shining example of the rich historical and artistic legacy of Andhra Pradesh.

### Rudragiri Hillock:

- Rudragiri Hillock is located in Guntur district of Andhra Pradesh.
- It is nestled amidst the Eastern Ghats, features five naturally formed rock shelters at its foothills, facing westward.
- It features a unique combination of pre-historic rock paintings from the Mesolithic period and exquisite artwork from the Kakatiya dynasty, dating back to around 1300 AD.

### Key Findings from the Rudragiri Hillock site:

- The first cave presents a narrative mural portraying the intense battle between the Vanara brothers, Vali and Sugriva.
- In the middle cave, a grand sketch of Hanuman, accompanied by sacred symbols of the conch (Sankha) and the fire

altar (Yagna Vedi) is present. Hanuman is depicted carrying the Sanjivani hill in his right hand symbolizing his mission to save Lakshmana's life.

- The third cave houses the prehistoric rock paintings from the Mesolithic era. The Kakatiya artist chose the same rock shelter to superimpose the elegant figure of Hanuman who is portrayed in a unique 'Anjali' posture, folding his hands in a divine offering.

### What is the Rudragiri Hillock connection with Telangana?

- There is a striking resemblance between the splendid frescoes on Rudragiri's

rock shelters and those discovered in Muppavaram and Pandavula Gutta in Warangal district of Telangana.

- These similarities suggest that the Ramayana scenes depicted at Rudragiri might have drawn inspiration from the artworks at Muppavaram.
- Moreover, the Ganapati Deva (1199-1262 AD), the founder of Muppavaram temple and a prominent figure of the Kakatiya dynasty likely patronized the rich ancient mural heritage found at Rudragiri.

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# INDIAN POLITY, POLICY AND INTERNAL SECURITY

## 1. SC Collegium's quiet transparency is driving change.

**Context:** The Supreme Court Collegium under the present Chief Justice of India D.Y. Chandrachud has quietly and transparently streamlined the appointment process of judges to the constitutional courts.



### The steps taken by CJI to ensure transparency in appointment of judges:

- While recommending appointments to the Supreme Court, the collegium takes into consideration the following three aspects:
- Seniority of Chief Justices and senior puisne Judges in their respective parent High Courts as well as overall seniority of the High Court judges:
- The merit, performance and integrity of the judges under consideration:** For this, the judgments of the judges are circulated among the members of the collegium, well in advance.
- The Centre for Research & Planning of the court also prepares a compilation of relevant background material to assist the collegium.
- There is also a Judgment Evaluation

Committee which goes through the judicial work of the candidates with a fine-tooth comb. The judgments are graded with the very best receiving an “**outstanding**” grade.

**Need to ensure diversity and inclusion in the Supreme Court:** It refers to the 1) representation of High Courts which are not represented or are inadequately represented in the Supreme Court 2) appointment of persons from marginalized and backward segments of society 3) gender diversity and 4) representation of minorities.

### Mains point: transparency in appointment of judges

## 2. A Bill that fences in the right to information.

### Context:-

Union Cabinet has approved the Digital Personal Data Protection Bill. It makes some changes to the Right to Information.



### Some facts about the RTI Act:

- The Indian Right to Information Act has been in existence since 2005. It empowers citizens and recognises them as true

rulers.

- It was the result of efforts by the Mazdoor Kisan Shakti Sangathan.
- Its preamble states that democracy requires informed citizens and transparency in governance to hold government accountable and curb corruption.
- It leads to an efficient government while preserving the ideals of democracy.
- Those in power structure are threatened by this transfer of power to the ordinary citizen. Citizens have used this democratic instrument to expose wrongdoing and corruption.

### The basis of refusal of information by public authorities in the RTI Act:

- Ten categories of information have been exempted from disclosure to protect some legitimate interests and working of the government. These are outlined in Section 8(1).
- The most widely misused exemption is Section 8(1)(j). It exempts personal information which is not associated with public activity, or which harms the privacy of an individual.
- It has a provision which states the information, which cannot be denied to the Parliament or a State Legislature, shall not be denied to any person.

### Section 8(1)(j) has been misused by public authorities:

- Many officials refuse information by claiming that it was personal information, and they would not give it. It has been used to cover arbitrary, corrupt or illegal acts of government officials.
- Some examples are denial of details of the beneficiaries of the Prime Minister's fund; bogus caste certificates, education certificates: verification of affidavits of elected representatives; unfair assessment of students and job seekers in government; file notings and minutes of

meetings.

### The proposed Data Protection Bill have an impact on the RTI Act:

- The proposed Data Protection Bill plans to amend RTI Act Section 8(1)(j). It will exempt information under 8(1)(j), which is related to personal information.
- If this amendment is made, all information which can be related to a person could be legally denied.
- Most information could be shown as being related to a person. Whenever a PIO wants to deny information, he will be able to link it to some person.
- The proposed Bill defines the term 'person' very widely. It includes individuals, companies, and the state. Most information except budgets would be linked to one of these.
- Thus, the RTI would become a Right to Deny Information. It will be an ineffective tool.

### Mains point: Issues related to Right to Information Act.

### 3. Parliament, now, is a gated community.

#### Context:

The importance of Parliament as a process for strengthening democracy.

### It important to imagine Parliament both as space and process:

- The assertion of sovereignty is not only conveyed through symbolic displays of governance but also through the actual governing processes.
- Using the same parliament architecture, after independence, that once used for oppression of the people was more than just a symbol. It tells a story of seizing control from the previous ruling power, who justified their superiority by characterising the locals as incapable of self-rule.

The physical space of Parliament and the governing processes it contains are deeply interconnected. The relationship between Parliament as a building and the processes and the people it represents has not fulfilled the promise of the early post-colonial period.



### Parliament as an institution has not fulfilled its promise:

- In the Indian context, the decline of Parliament's influence in the lives of the people is primarily attributed to the shifting concept of the nation-state.
- After gaining independence, **the state had a clear responsibility:** to serve the nation and its people. It was recognized that the interests and lives of the people were distinct from that of the state.
- However, over time, there has been a shift. State itself is increasingly being equated with the nation. As a result, there has been a growing tendency to unquestioningly accept, whatever the state says and does. It is also justified as the best interest of the people.
- The initial commitment to a democracy led by the people has been replaced by one controlled by the state.** Parliament has undergone a transformation. It resembles a fortress. It has distanced itself from society, placing itself above rather than alongside it.
- It has become akin to a gated community.** The construction of the new Par-

liament House has only exacerbated this trend. It portrays governance as a grand monument disconnected from the people.

### Mains point: Political institutions

#### 4. The Forest Conservation (Amendment) Bill, 2023.

##### Context:

The Forest Conservation (Amendment) Bill, 2023 will be discussed in the monsoon session of the Parliament.



#### The key provisions of Forest Conservation (Amendment) Bill, 2023:

- Land under the purview of the Act: The Bill provides that two types of land will be under the purview of the Act:** (i) land declared/notified as a forest under the Indian Forest Act, 1927 or under any other law, or (ii) land not covered in the first category but notified as a forest on or after October 25, 1980 in a government record.
- Exempted categories of land:** The Bill exempts certain types of forest land from the provisions of the Act such as:
  - Forest land along a rail line or a public road maintained by the government providing access to a habitation, or to a rail, and roadside amenities up to a maximum size of 0.10 hectare.
  - Forest land situated within 100 km from international borders, Line of Control, or Line of Actual Control, for construc-



tion of a strategic linear project of national importance and concerning national security

- Forest land up to 10 hectares, for constructing security-related infrastructure

- Forest land proposed to be used for constructing defense related projects, camps for paramilitary forces, or public utility projects up to five hectares in a left-wing extremism affected area.

- **Assignment/leasing of forest land:** Under the Act, a state government requires prior approval of the central government to assign forest land to any entity not owned or controlled by the government.

- In the Bill, this condition is extended to all entities, including those owned and controlled by the government.

- **Permitted activities in forest land:** The Act specifies certain activities that will be excluded from non-forest purposes, meaning that restrictions on the use of forest land for non-forest purposes will not apply.

- These activities include works related to the conservation, management, and development of forest and wildlife such as establishing check posts, fire lines, fencing, and wireless communication.

- **The Bill adds more activities to this list such as:** (i) zoos and safaris under the Wild Life (Protection) Act, 1972 (ii) ecotourism facilities, (iii) silvicultural operations and (iv) any other purpose specified by the central government.

- **Power to issue directions:** The Bill adds that the central government may issue directions for the implementation of the Act to any authority/organization under or recognised by the centre, state, or union territory (UT).

## The need of Forest Conservation (Amendment) Bill, 2023:

- **Delay in Approval Process:** The existing Forest Conservation Act requires consent from numerous authorities at the state and national levels before engaging in any non-forest activity in an area designated as 'forest.'

- **This approval process was very difficult and challenging.** It took almost a year even for minor requests like building access paths on the designated forest land.

- **Judgment Errors:** The Union government, with the amendment, aims to rectify judicial errors made in the Godavarman case regarding the scope of forest laws in India.

- The court in the case expanded the scope of the Forest Conservation Act to all land parcels recorded as forest in any government records. This led to debates and confusions about whether a piece of land was actually a forest or a fragile ecosystem.

- The court decision also affected the landowners because land once classified as a forest can hardly be used for any other purpose. This created inconsistencies in land records, affecting various businesses.

- For instance, approximately 30 resorts in Karnataka became a subject of dispute between the state's revenue and forest authorities due to conflicting views on whether the land they were utilizing was classified as forest land or not.

- The court judgement also discouraged state governments from reclassifying property that did not meet the criteria for forest status.

- For instance, footpaths were classified as 'strip forests,' creating unnecessary hurdles for people who needed access



roads to their properties.

- The order further weakened property rights by extending the Forest Conservation Act to all land parcels that met the dictionary definition of 'forest,' including privately owned land.
- This had implication on constructing buildings even on the land owned by an individual.
- Hence, it was essential for Parliament to rectify the situation and for this it has come with the Forest Conservation (Amendment) Bill, 2023.

### The way ahead:

- The broad definition of forests serves as a cautionary regarding policymaking falling under the control of the judiciary.
- Hence, it is now crucial to rectify this situation, prioritize the well-being of both forests and non-forest land, and restore the proper balance in policymaking.

### Mains point: About Forest Conservation (Amendment) Bill, 2023

#### 5. India's data protection law needs refinement.

##### Context:

The government will table the Draft Data Protection Bill in the current session of the Parliament.

The issues related to the Draft Data Protection Bill:



- **Scope and definition**– the Bill's scope and effectiveness in protecting the privacy of Indian citizens remain limited. The DPDP Bill solely focuses on safeguarding personal data, which is data that can directly or indirectly identify an individual.
- However, in the contemporary data economy, entities utilise various types of data, including both personal and non-personal data, to target, profile, predict, and monitor users.
- **Non-personal data** typically refers to anonymous data that does not pertain to any specific individual. Example is aggregated data on products viewed by numerous users on Amazon between 9 p.m. and 11 p.m.
- When combined with other datasets, this non-personal data can potentially identify individuals.
- The re-identification of non-personal data poses significant privacy risks that are not addressed in the latest draft of the DPDP Bill.
- The Bill could include a penal provision that imposes financial penalties on data-processing entities for re-identifying non-personal data as personal data.
- **Data protection board**– The Proposed data protection board cannot initiate a proceeding of its own accord.
- According to the Bill, the board is the designated authority responsible for enforcing the law. It can initiate a proceeding for adjudication only if a complaint is filed by an affected party or if directed to do so by the government or a court.
- In the data economy, users have limited control and knowledge about data transfers and exchanges. The constantly evolving and complex nature of data processing puts users at a disadvantage compared to the entities utilizing their

data.

For instance, a **food delivery app** could violate sell data to data brokers, and as an individual, user might lack the resources or motivation to approach the data protection board.

However, the board could be better positioned to take action against the food delivery app on behalf of all affected users. The DPDP Bill could have provisions allowing the data protection board to initiate complaints on its own.

### Mains point: Issue related to data protection

## 6. Is the delimitation question settled?

### Context:-

The issue of delimitation.

Some facts about delimitation:



Delimitation is the process of redrawing the boundaries of Lok Sabha and State Assembly constituencies to ensure nearly equal representation of voters in each seat.

The most recent delimitation process took place in 1976, and the existing boundaries were determined based on the 2001 Census data. However, the number of Lok Sabha and State Assembly seats remained fixed according to the 1971 Census figures.

In 2002, a constitutional amendment was introduced. It froze the delimitation exercise until the first Census conducted after the year 2026.

This implies that any revision to the constituency boundaries will not occur until the new Census data becomes available after 2026.

### To freeze delimitation based on decennial population data, for 25 years after the 1976 delimitation:

The delimitation carried out in 1976 was based on the population data from 1971. Subsequently, in 2002, delimitation was conducted, but the issue of population imbalances persisted.

As a result, there was a decision to refrain from further delimitation until after the first Census conducted after 2026.

The reason for this decision was the significant disparity in population growth rates between the northern and southern states.

Northern states such as **Madhya Pradesh, Rajasthan, Uttar Pradesh, and Bihar** were experiencing decennial growth rates ranging from 12% to 15%, while the southern states had growth rates between 6% and 10%.

Despite the passage of time between 2011 and 2021, there was no balancing effect on the population growth rates. It is anticipated that this balancing process will take place after the Census conducted in 2026.

### There no redistribution of Lok Sabha seats across State boundaries in 2002:

The boundaries of Lok Sabha constituencies were redrawn in 2002. But, there was no change in the total number of seats in particular States.

The number of seats is determined by Parliament, and in cases of State reorganisation, it is specified in **the**

**States Reorganisation Act.** For instance, when Uttarakhand was formed, its Assembly was allotted 70 seats.

Parliament has the flexibility to adjust this principle to ensure that, in certain cases, a relatively smaller population continues to elect a Member of Parliament. For example, in Tripura or Manipur, two seats were allocated.

### The way forward for the next delimitation exercise to ensure the proper presentation of each region and community:

- The regional differences in population are clearly indicating a demographic divergence. It may lead to violation of the principle of 'one person, one vote, one value.'
- Parliament has the flexibility to ensure that the number of seats does not decrease anywhere, and even if there is an overall increase in seats.
- The ratio of parliamentary representation between northern and southern states may widen.
- To address this issue, Parliament must establish a normative proportionality based on population, which allows for certain deviations.
- There is a need to determine the appropriate level of proportionality.** In terms of representation, the focus should not be solely on count but also on the characteristics of representation.
- A standard proportionality norm** should be negotiated to ensure that marginalised voices are not excluded when it comes to the allocation of seats.
- Representation should involve a more comprehensive accommodation of diverse characteristics, considering India's diversity and the concentration of certain groups in the population.

**Mains point: Issues related to electoral matters**

## 7. Mediate, Don't Litigate-Mediation Bill is a way to reduce the judicial backlog. Governments shouldn't be exempted from it.

### Context:

The Mediation Bill was cleared by the Union cabinet this week for introduction in the just-started monsoon session of Parliament.



### The mediation Bill:

- Mediation Bill was introduced to address the backlog of over 45 million cases in India's judicial system, where 90% are in district and subordinate courts.

### Features of Mediation Bill:

- Nature:** Non-adversarial, consent-based.
- Scope:** Limited to civil and commercial disputes.
- Procedure:** Mandatory two-session pre-litigation mediation. If it's unsatisfactory, a disputant can opt out and switch to litigation.
- Duration:** Maximum 180 days, extendable by another 180 days.
- Outcome:** Mediation agreement is binding on all involved parties.

### The major concerns related to Mediation Bill:

- Mandatory Mediation:** The Mediation Bill requires mandatory mediation before litigation. There's concern this can be misused to purposely delay cases. A suggested fix is to shorten the 180-day mediation deadline.



- **Government Exclusion:** Bill doesn't cover the government, a major litigant, from mandatory mediation.
- **Alignment Issues:** The bill should better synchronize with the Singapore Convention for smoother cross-border dispute resolutions.

### Prelims point: The mediation Bill

## 8. Who is accountable in Manipur? The answer can provide justice to mob assault survivors.



### Context:

The current violence between Kuki and Meiteis undergoing in Manipur.

### A system of violence operating in Manipur that is responsible for current unrest:

- Since May, **social divisions between the Meitei and Zo-Kuki communities** have evolved into a de facto partition.
- The violence has resulted in over a hundred deaths, thousands of people displaced, numerous churches destroyed, properties burned. A no-man's land has established between the hills and the Valley, secured by the army.
- **The state administration has also been divided.** Meitei police officers confined to the Valley, and Kuki-Zo officers restricted to the hills. Moreover, a significant number of bullets and arms, including machine-guns, have gone miss-

ing from various police training centres.

### The conflict is further complicated by gender politics and the balance of power between different communities.

The administration in southern Manipur is currently being governed from New Delhi. N Biren Singh government mandate is limited to the Imphal Valley.

- Recent incidents, like the murder of a Naga woman in Imphal East, threaten to strain Naga-Meitei ties and potentially drag Nagaland into the conflict. The situation is like the Meitei-Kuki rift in the south that has already involved Mizoram.

- **Thousands of displaced Kuki-Zo families are being hosted by the Mizoram government.** Mizos are openly supporting this community to protect their ethnic kin in Manipur from Meitei majoritarianism.

- This has created political tensions among **Mizoram, Assam, and Manipur**, particularly concerning disputed boundaries.

- The situation is further complicated by the influx of drug profits and products from Myanmar. All these factors have contributed to escalating tensions and armed ethnic mobilisation in Northeast India, with support from states within the Union.

### The driving factors behind this system of violence:

- **Such systems of violence are a result of India's majoritarian politics.** The driving factor is competing desires for regional hegemony and demands for access to resources and power within the Union and not territorial separation.

- **Such ecosystems are benefitted by electoral politics.** These communities become vote-banks for whoever advocates their cause. Illegitimate and unaccounted cash-flows further boost it,



both of which are abundant in the Northeast.

**The polarised politics in Manipur** is sustained by mechanisms of silence surrounding it. Both the Prime Minister and Home Minister have maintained their silence.

On the other hand, another aspect of this silence is linked to the systemic violence against women in Manipur.

**The alleged gang-rape of the two Kuki women was not unknown to the authorities.** However, it was only after a leaked video and public outrage that the Manipur police finally ordered an investigation into the matter.

**Mains point: Issues related to northeast.**

### 9. Rajasthan minimum income Bill: provisions, what makes it unique.

#### Context:

The Rajasthan government has tabled the Rajasthan Minimum Guaranteed Income Bill, 2023.



#### Rajasthan Minimum Guaranteed Income Bill, 2023:

**Aim:** To cover the entire adult population of the state with guaranteed wages or pension.

**Categories:** The Bill has three broad categories: 1) right to minimum guaranteed income 2) right to guaranteed employment and 3) right to guaranteed social security pension.

**Expenditure:** Government anticipates an additional expenditure of Rs 2,500 crore per year for this scheme, which may increase with time.

#### Key Provisions of the Bill:

**Minimum guaranteed income:** Each adult citizen of the state has been guaranteed a minimum income for 125 days a year through the Rajasthan government's flagship Indira Gandhi Shahri Rozgar Guarantee Yojana for urban areas and through **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in rural areas.**

**Right to guaranteed social security pension:** Government will provide eligible categories such as aged, disabled, widows, and single women with a minimum pension of Rs 1,000 per month. Importantly, the pension will be increased at the rate of 15 per cent each year.

**Right to guarantee employment:** According to the Right to Employment, once the work in a rural or urban employment schemes are finished, the entitled minimum wages must be paid weekly or not later than a fortnight.

To implement this, a Program Officer will be appointed by the State government. In rural areas, the officer must not be below the rank of a **Block Development Officer (BDO)**. In urban areas, they must be an Executive Officer of the relevant local body.

The officer will ensure that the work site is within a five-kilometer radius of the location in which the job card is registered in both rural and urban areas.

**The Program Officer** must also ensure the applicant gets work within 15 days of receiving the application. If not, the applicant is eligible for unemployment allowance on a weekly basis and in any

case not later than a fortnight.

### The significance of this bill:

- Mahatma Gandhi had said “**true measure of any society can be found in how it treats its most vulnerable members**”. Hence, it is a moral responsibility of every government to ensure that everyone gets justice.
- Therefore, the Bill is part of a bouquet of schemes and measures undertaken by the Rajasthan government to provide relief from inflation.
- **The bill contains many firsts in the country.** The bill’s approach, guaranteeing minimum employment and pensions by law, distinguishes it from the cash transfer schemes that various other states have.

### Mains point: Rajasthan Minimum Guaranteed Income Bill, 2023

## 10. On Manipur video, where Women’s Commission went wrong.

### Context:

The ineffectiveness of women’s commissions in India, especially in addressing women’s issues in Manipur. The commissions focus more on paperwork than on fieldwork. Political appointments impact their neutrality. The author suggests reforms like transparent appointments and regular audits. They urge commissions to actively address ground issues.



### About women’s commissions in India:

- Women’s commissions were set up in India to address women’s issues.
- The National Commission for Women was established in 1992, as per the National Commission for Women Act 1990.
- Each state, like Manipur, has its own commission.
- Manipur State Commission for Women was formed in 2006.
- They are meant to investigate women’s rights violations.

### The women’s commission of India ineffective in addressing women’s issues in Manipur:

- Lack of Proactive Action
- The national commission received numerous complaints from Manipur.
- Instead of addressing them, they merely forwarded complaints to the state. This led to neglect and no action.
- Over-Reliance on Paperwork
- The commissions focus heavily on paperwork, neglecting fieldwork.
- Actual on-ground issues remain unattended, as members prioritize files over field visits.

### Political Appointments:

- Members are nominated by the ruling political party.
- This makes them hesitant to criticize the government, affecting their objectivity.
- They might favor states ruled by the opposition, creating bias in their work.

### Absence of Real-World Engagement:

- Commission members often stay in their offices instead of visiting problem areas.
- For example, despite numerous complaints from Manipur, there were no

extensive field visits to understand the situation.

- Recommendations Ignored
- Even when they take action, their recommendations might be ignored by state agencies, as seen in Manipur.

### To enhance its effectiveness:

- Prioritize Fieldwork
- Shift focus from excessive paperwork to direct involvement in problem areas.
- As seen in Manipur, numerous complaints demand in-person assessment and not just forwarding issues.
- Reform Appointment Process
- Move away from political appointments to ensure objectivity.
- Advertise roles for chairpersons and members, selecting candidates based on capability, not political affiliations.
- Engage External Audits
- Conduct regular social audits by competent agencies.
- Taxpayers deserve to know if their money is used effectively, and external reviews can provide this insight.
- Encourage Real-World Engagement
- Commission members should frequently visit areas of concern.
- Long-duration stays can help understand the gravity of situations, as in Manipur.
- Strengthen Collaboration
- Work closely with law enforcement agencies.
- Instead of an adversarial approach, support these agencies to address women's issues effectively.
- Transparent Reporting
- Regularly share the commission's activities and achievements with the pub-

lic.

Transparency will build trust and keep members accountable to their mandate.

**Mains point: The women's commission of India ineffective in addressing women's issues in Manipur.**

### 11. Ayushman Bharat expose: How to nudge India's public health infrastructure.

#### Context:

The challenges in the Pradhan Mantri Jan Arogya Yojana (PMJAY) health scheme. Doctors sometimes misuse the scheme for personal gains. The author suggests better incentives and focus on public facilities to improve the scheme and benefit the poor.



#### The challenges in the Pradhan Mantri Jan Arogya Yojana (PMJAY) health scheme:

- **Misuse by Doctors:** Some doctors deceive patients for personal gain. For instance, a doctor at Safdarjung Hospital misled patients about the scheme's timeline.
- **Financial Incentives:** Doctors might choose private channels over the scheme if they gain more financially, like the Safdarjung case.
- **Settlement Delays:** Popular belief sug-



gests long claim settlement times in public hospitals, but in reality, it's 21 days on average.

**Less Active Interest:** Public facilities show less interest in the scheme compared to private ones. Only 54% of claims in public facilities were settled.

**Staff Overload:** Public hospital staff, already handling many clinical activities, find it hard to manage the scheme.

**Arogyamitra's Role:** Arogyamitra focuses more on registering patients than on ensuring claim settlements.

**Limited Services:** Most public facilities offer selected services, reducing potential revenues.

**Infrastructure Needs:** Better infrastructure and more staff can boost the scheme's success in public hospitals.

### Way forward:

**Transparency:** Clear information should be provided to patients about the benefits of PMJAY to prevent misuse by doctors.

**Increase Incentives:** Doctors should receive better incentives for registering patients under PMJAY and settling claims.

**Faster Claim Settlements:** Streamline the process to reduce the average 21-day claim settlement time in Bihar.

**Active Interest:** Encourage medical teams in public hospitals to take active interest in the scheme.

**Claim Follow-up:** Arogyamitra's pay could be linked to successful claim settlements, not just registrations, encouraging them to follow up.

**Revenue Generation:** Increase the types of services in public facilities to increase revenue.

**State Support:** State governments should provide manpower and enforce

accountability to increase service volume in public facilities.

**Database Correction:** Ensure no one is excluded due to database errors in eligibility.

**Prelims point: Ayushman Bharat**

## 12. Charting the path for the Sixteenth Finance Commission.

### Context:

The Sixteenth Finance Commission is due to be set up shortly.

The issues that should be taken into consideration by the 16th Finance Commission:

### Share of states:



The Fourteenth Finance Commission increased the share of States in the divisible pool of central taxes from 32% to 42%. When the number of States in India was reduced to 28, this share was revised to 41%.

The Center was able to handle this situation due to the withdrawal of Planning Commission grants following the abolition of the Planning Commission.

**Centre is facing fiscal imbalances.** So, there is no strong case for proposing any additional increase in the States' share of central taxes.

### Role of non-shareable cesses and surcharges:

Between the fiscal years 2020-21 and



- 2023-24, the effective share of States in the Center's gross tax revenues averaged approximately 31%. It was notably lower than the previous share of nearly 35% observed during 2015-16 to 2019-20.
- This decline was primarily attributed to a significant increase in the share of cesses and surcharges.
- It increased to 18.5% of the Center's Gross Tax Revenues during 2020-21 to 2023-24 from 12.8% during 2015-16 to 2019-20. During the period of the Thirteenth Finance Commission, this share was merely 9.6%.
- One possible recommendation could be imposing an upper limit of 10% for the share of cesses and surcharges as a percentage of the Center's GTR.
- If this proportion exceeds 10%, the share of States should be increased accordingly. The Sixteenth Finance Commission, using the most recent data, could refine this formula to make it more effective.
- Per capita income criteria-** The share of individual States in the Centre's divisible pool of taxes is determined by a set of indicators. Per capita income is one of the criteria.
- Per capita income is the distance of a State's per capita income from a benchmark. It is usually determined by average per capita income of the top three States.
- This criterion ensures relatively larger shares for relatively lower income States.** At present, it has the highest weight of 45%. Many of the richer States want a lower weight for this criterion.
- It is essential to give proper consideration to the requirements of the lower-income States. These States will have a greater contribution to India's 'demographic dividend' in the future.
- One approach could involve maintaining the weight of the distance criterion at its current level or even reducing it to 40%.
- However, to address the needs of the economically disadvantaged States, it might be beneficial to make some upward adjustments in the resources allocated to them through grants.
- Equalisation provision-** It is essential to give priority to equalising the provision of education and health services in the overall framework of resource transfers.
- Resource allocation to individual States could be guided by the equalisation principle,** by utilising a limited number of criteria such as population, area, and distance. This approach could be complemented by an appropriate system of grants.
- The equalisation principle aligns with both equity and efficiency and has been successfully implemented in federations like Canada and Australia.
- Debt burden of centre and states-**
- Combined debt-GDP ratio of central and State governments had peaked at 89.8% in 2020-21. Centre's debt-GDP ratio is 58.7%, and it is 31%.for states.
- These numbers are showing improvements.** But, still above the corresponding FRBM norms of 40% and 20%. The 2018 amendment to the Centre's FRBM needs to be re-examined.
- A few State governments have relatively larger debt and fiscal deficit numbers relative to their GSDPs.
- There is proliferation of subsidies and the re-introduction of the old pension scheme in States However, the financing sources for these subsidies and the resulting fiscal burdens are not clearly identified.

### The reforms can be suggested by the 16th Finance Commission:

- **A loan council can be set up.** It was recommended by the Twelfth Finance Commission. It should keep a watch on the loan magnitudes and profiles of the central and State governments.
- **It needs to thoroughly investigate the issue of non-merit subsidies.** The Finance Commission should take a firm stance on States adhering to fiscal deficit limits.
- It can offer incentives to States that maintain fiscal discipline and penalties for those exceeding the fiscal deficit limits.

### Mains point: Finance Commission.

### 13. Rap on the knuckles: Supreme Court has tried to hold States and Centre to account on mob violence.

#### Context:

The Supreme Court criticized the Union and State governments for not acting against mob violence and lynchings, especially targeting Muslims and marginalized groups by “**cow vigilantes**”. Despite guidelines from a 2018 judgment, such incidents continue, with political influences playing a role.

#### The Supreme Court view on mob violence and lynchings:

- **Criticism of Governments:** The Supreme Court has criticized the Union and State governments for their “**consistent failure**” to act against mob violence and lynchings over the past five years.
- **Duty of the State:** In the 2018 case, *Tehseen S. Poonawalla vs Union of India*, the Court emphasized that it’s the state’s “**sacrosanct duty**” to protect its citizens. They should prevent any form of “**vigilantism**”.

**Guidelines Issued:** The Court provided guidelines in 2018. This included:

- Appointing a nodal police officer in every district.
- Identifying areas with recent mob violence.
- Using police intelligence to tackle such incidents.
- Sensitizing law enforcement.
- Warning the public about the consequences of mob violence.



#### Way forward:

- **Implement Guidelines:** Governments should follow the 2018 Supreme Court guidelines, which include appointing nodal police officers and identifying violence-prone areas.
- **Sensitization:** The Home Ministry and State governments should sensitize law enforcement and the public about the repercussions of mob violence.
- **Civil Society Action:** Communities need to promote understanding and prevent the stereotyping of minorities. This will help curb mob violence and vigilantism.
- **Political Accountability:** In regions like Tamil Nadu, where secular movements are active, political leaders face backlash for any communal incidents. This level of accountability should be adopted everywhere.

### Mains point: The Supreme Court view on mob violence and lynchings

# INTERNATIONAL RELATIONS

## 1. We can expect more turbulence ahead in Indian diaspora politics.

### Context:

The increasing complexity of diaspora politics. It suggests that Indian leaders should carefully engage with the diaspora to avoid exacerbating these issues while prioritizing the interests of Indian citizens abroad.



### The impact of immigrants:

- Impact on local societies:** Immigrants often maintain deep connections with their home countries' politics. For example, Indians living in the US, UK, Canada, and Australia have engaged in protests related to their homeland's issues. However, this can lead to tension with local societies. Examples include communal violence in Leicester and inter-group clashes in Australia.
- Effects on diaspora communities:** These new immigrants may also upset social dynamics within the diaspora. An example is the tension between recent immigrants and older immigrants or second and third-generation members of the diaspora. The older generations worry about social equations with local societies being disturbed.

**Political impact:** The influence of immigrants can lead to radical political events. For instance, a 19-year-old Indian American attempted to attack the White House, expressing extreme political beliefs. This showcases the possible political risks related to immigrant populations.

**Response from host nations:** Host nations have started to respond to diaspora issues. For instance, Seattle City Council in the US outlawed caste discrimination after advocacy from diaspora civil society groups. This shows that immigrants can influence policy in their host countries.

### The challenges created due to immigrants:

- Increasing violence and unrest:** Recent immigrants, staying engaged with their home countries' politics, can cause incidents of violence and unrest in their host nations. For example, Pro-Khalistan protests in the US, UK, Canada, and Australia led to vandalism, arson, and rioting.
- Inter-group conflicts:** Inter-group conflicts between different generations or factions within the diaspora can occur. For instance, Hindu and Sikh communities in Australia got into fights due to political disagreements.
- Potential for radicalization:** There is a risk of political radicalization among immigrants. This was evident when a 19-year-old Indian American attempted an attack on the White House, showcasing the extreme ideologies he held.
- Erosion of local societies:** There is a concern that the actions of new immigrants may upset the social balance that

older immigrants have established with local societies. This was a concern expressed by community leaders in Australia, Singapore, and the US.

**Influence on host nations' policies:** Immigrants can have significant influence on the policies of their host nations. This was seen when Seattle City Council outlawed caste discrimination, responding to the advocacy of diaspora civil society groups, which could potentially cause tension in local societies.

### Way forward:

**Avoid conflation:** Indian leaders should not conflate Indian origin with loyalty to India or sectarianism. They must respect individual identities of Indian-origin individuals in their adopted countries.

**Careful engagement:** Leaders engaging with the diaspora should move cautiously to avoid exacerbating community tensions.

**Focus on citizens:** The Indian government should prioritize the interests of its citizens abroad over any person with Indian heritage.

**Awareness of risks:** Leaders and civil society groups must stay alert to the potential risks involved with diaspora politics.

### Mains point: Indian Diaspora.

## 2. What connects India and Bangladesh.

### Context:

The areas of potential cooperation between India and Bangladesh.

### The areas of potential cooperation between India and Bangladesh:



**Political ties-** Indian Prime Minister Narendra Modi visited Bangladesh in 2021 as a special guest to commemorate the centenary of Bangladesh's founder Sheikh Mujibur Rahman.

During the same year, Ram Nath Kovind, who was the President of India at the time, also visited Bangladesh to celebrate the golden jubilee of Bangladesh's victory in its War of Independence. In September of the previous year, Prime Minister Sheikh Hasina of Bangladesh paid a visit to India.

**Trade and investment-** In the last financial year, there was a significant increase of 100% in Bangladesh exports to India. It was valued at \$2 billion. India's exports to Bangladesh have increased by 70 per cent and are currently at \$16 billion.

Both countries are negotiating the Economic Partnership Agreement (CEPA) to increase trade between the two countries.

**Connectivity-** Bangladesh currently imports 1,160 MW of electricity from India. There are ongoing discussions regarding the possibility of importing electricity from Nepal and Bhutan through India.

The distance of 350 miles between Kolkata and Agartala can be covered in approximately six to seven hours by passing through Bangladesh. In the coming months, the Akhaura-Agartala rail line will be inaugurated, and Shahjadpur-Kulaura line will be com-



pleted.

- . Experts believe that establishing connectivity between Petropol and Benapol, Gede and Darshana, as well as Birol and Radhikapur, will serve the interests of both countries.
- . **Water resource management-** Significant progress has been made in the field of water resources management. It generated hope for the long-anticipated Teesta water-sharing agreement.
- . The two nations have successfully signed a MoU pertaining to the equitable distribution of the Feni River's waters.
- . They have also reached an agreement to share technical information and establish a framework for an interim water-sharing arrangement involving six rivers: **Manu, Mahuri, Khowai, Gomti, Dharla, and Dudhkumar.**
- . A MoU between India's Ministry of Jal Shakti and Bangladesh's Ministry of Water Resources for allowing the withdrawal of up to 153 cusecs of water by both countries from River Kushiya during dry seasons was signed.
- . Governments from various political parties are interested in finalising the Teesta Agreement.
- . **Security-** The government of Bangladesh has taken significant measures to ensure that no actions within its borders pose a threat to India's territorial integrity or destabilise the north-eastern states.
- . One of the prominent leaders of the **United Liberation Front of Assam (ULFA), Anup Chetia**, was extradited to India.

**Mains point: India and Bangladesh bilateral relationship.**

### 3. India, France and what keeps their ties ticking.

#### Context:

The India and France bilateral relations.

#### The India and France's relationship evolved over the years:



- . India and France have built a tradition of joining each other's national day parades.
- . French Presidents have been invited to be the chief guests at the Republic Day Parade in Delhi while the Indian PMs have been invited to France's Bastille Day parade.
- . French President Jacques Chirac was the first French chief guest to be invited at the Republic Day Parade in Delhi. India's first ever Strategic Partnership agreement between India and France was signed between PM I.K. Gujral and the President Chirac.
- . Further, both countries have held on to three pillars in the relationship: 1) non-interference in each other's internal affairs, 2) belief in strategic autonomy and non-alignment, and 3) a refusal to pull the other into its own coalitions and alliances.
- . India was also one of a few invitees to the preparatory committee of "Paris Conference on International Economic Cooperation", hosted by France.
- . Moreover, although French officials joined the P-5 nations in criticizing the

Pokhran-II nuclear test in 1998, France did not join the US-led effort to impose sanctions on India.

However, when India won its waiver at the Nuclear Suppliers Group in 2008, it was France that India signed its first civil nuclear deal with.

### The relationship between the Indian and France in recent years:

The relationship between the two nations has been build up so strong that despite the violent protest over the mistreatment of immigrant communities, PM Modi did not hesitate even once in planning his visit.

Even France did not bring up the European Parliament's criticism of India over the violence in Manipur.

Further, in March 2022, France collaborated with Mexico to co-author a UN Security Council resolution aiming to ensure unrestricted humanitarian aid in the conflict zone of Ukraine.

When the resolution reached the UN General Assembly, India abstained from voting. However, France did not express any disappointment regarding India's abstention.

Similarly, India also did not have differences with France over Macron's visit to China in April this year. France has also shown interest in traveling to South Africa for the BRICS summit in August.

### The stand of France and India over different strategic coalition groups:

France has publicly expressed its disapproval of the North Atlantic Treaty Organization (NATO)-plus partnership plans. India has also rejected the plans.

India-France Roadmap on the Indo-Pacific released last week further clarifies that neither side is attempting to pull the other into its other regional military coalitions.

France has also shown little enthusiasm for the "Quad-Plus" coalitions proposed in 2020, which lost momentum following the U.S.-France disagreement over the AUKUS agreement.

### A Way ahead:

The relationship between the two countries has grown significantly. France is the only country with which the Indian Navy has conducted joint patrols so far.

There are also plans of conduction joint military exercises to boost the relationship of both the nations.

### Mains point: India and France relations.

### 4. From Great Powers to Asia - India is raising its diplomatic game.

#### Context:

The article explains the India approach towards its Asian neighbourhood in context of its relationship with major powers.



### The current Indian approach on regional geopolitics in the context of its relationship with major powers:

There was emphasis on India's neighborhood during Modi's visit to Washington and Paris. In France, Modi and Macron issued a declaration on the **Indo-Pacific Roadmap for wide-ranging cooperation.**

First time, India agreed to work to-

gether with a former European colonial power in the Indian Ocean. India discarded the main principle of Indian foreign policy that colonial and “extra-regional” powers should be kept out of the Indian Ocean.

- Modi and Macron have expanded the Indian Ocean regional framework to include the Pacific. The Indo-Pacific Roadmap issued by the two leaders declared that Delhi and Paris will “*continue to work together to extend development cooperation to countries in the region, including in Africa, the Indian Ocean Region, South Asia, Southeast Asia and the Pacific*”.

- Both leaders agreed for more cooperation with regional partners in bilateral, plurilateral and multilateral arrangements like the **Indian Ocean Rim Association, the Indian Ocean Naval Symposium, the Indian Ocean Commission**.

- Ino-pacific plays a very important role in India’s strategic partnership with Washington today. The joint statement issued by Modi and US President Joe Biden last month talks about strategic cooperation in the **Indo-Pacific through the Quad**.

- Modi and Biden agreed for closer cooperation with regional platforms such as the Indian Ocean Rim Association, Indo-Pacific Oceans Initiative, and ASEAN in the Indo-Pacific Region”.

- Both leaders supported the enhanced consultations between the two governments on regional issues including South Asia, the Indo-Pacific and East Asia.

### India’s approach towards its Asian neighbourhood after independence:

- India’s relations with its Asian neighbourhood since independence were treated as separate from Delhi’s

engagement with the great powers. There was a thought among policymakers that the major powers should be kept out of the region to create an “**area of peace**” in Asia.

- Delhi lacked the authority to prevent major powers from entering the region or to discourage its Asian neighbours from aligning with external powers.

- But, India did not change its stance. Notions such as “**Asia for Asians**” and “**Indian Ocean security without the Superpowers**” continued to dominate Indian thinking.

- Delhi insisted that the primary requirement for membership in the Non-Aligned Movement (NAM) was the absence of foreign military bases on national territory.

- Delhi disregarded the fact that most threats to a nation’s sovereignty arise from issues with neighbouring countries.

- India’s unrealistic principles of regional security were further compounded by the economic radicalism espoused in the **NAM and G-77 forums**. It pushed India further away from the realities of the Asian region.

### India policy change after the Cold War:

- There were compulsions in India to liberalise its economy.

- Its regional engagement with different parts of Asia and the Indian Ocean acquired a higher priority.

- There was renewed focus on trade, investment and connectivity in bilateral relations with its neighbours in Asia.

- India also deviated from its earlier policy of keeping political distance from the major powers. It collaborated with Moscow to promote a “**multipolar world**” through the Russia-India-China (RIC) forum and later via the

## BRICS.

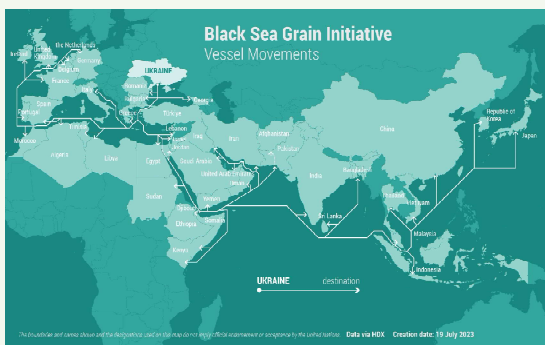
- India also deviated from its earlier policy of keeping the region and the world separate. It acquired the membership of the Shanghai Cooperation Organisation led by Russia and China to keep the US out of their backyard.
- Delhi also joined the Indo-Pacific framework and the Quad due to its deteriorating relationship with China
- India joined forces with Israel, the United Arab Emirates, and the United States to establish the I2U2 forum in the Western context.
- It is evident that India's strategic partnerships with Western powers are gaining more prominence compared to its engagement with Russia and China.
- Delhi now adopts an integrated approach to its interests and pursues them through new and overlapping forums.
- As Foreign Minister Jaishankar conveyed to Southeast Asian leaders in Jakarta recently, the Quad complements the efforts of the ASEAN and the institutions led by it.

**Mains point: Indian renewed approach towards the major powers and regional geopolitics**

## 5. The Black Sea Grain Initiative.

### Context:-

Russia has decided to pull out of the Black Sea Grain Initiative.



### The reasons for this Russian action:

- Russia is a major wheat producer.** It has ample alternative options for its exports. Bumper harvest is expected in Russia over the year, and it wants to take full advantage of any price effects.
- There are geopolitical reasons also. Moscow says that a parallel agreement to help boost its exports of food and fertilisers hasn't been implemented.
- Istanbul was carefully balancing its relationship with **the North Atlantic Treaty Organization** and Russia since the invasion.
- However, in recent times, the Turkish President announced concessions to the West and Ukraine, and undermined this balancing act.
- He has changed his earlier position on admission of Sweden into Nato and has no objection over it. Now, he even favours the Ukraine membership of the security alliance.

### Some facts about Black Sea Grain Initiative:

- The grain deal was partially brokered and supervised by Turkiye.** It has control over access to the Black Sea through the Bosphorus, a strait.
- As per UN, the deal has lowered global food prices by more than 20% since March last year. Nearly 33 million metric tonnes of grains are being exported out of **the Black Sea ports.**
- The World Food Programme** has transported more than 7,25,000 tonnes of wheat to countries hit by wars and extreme weather with help of the deal. Beneficiaries included Yemen, Afghanistan, Somalia, Sudan and Kenya.

### The impacts of Russia's refusal to continue the grain deal:

- It will affect food availability.** In the short term. Trade had already been effectively affected by Russian non-coop-



eration in the deal. Odessa port was being targeted by Russian drone attacks.

- This has minimal impact on prices because of good wheat harvest elsewhere, including in Brazil. But in the medium to long term, food insecurity will increase globally.
- Alternative routes for Ukrainian wheat are difficult to find. East European countries have an obstructionist attitude towards wheat imports and transit through the bloc.
- It can lead to tightening food markets in developing countries. This can create political unrest and macroeconomic instability.

### India needs to be worried:

- In India, domestic factors are important in deciding the cereal prices. But, India should not be complacent.
- The inflation in cereals is in double digits, with the rate touching 12.7% in June, Indian cereal stock is the lowest level since **the outbreak of Covid in 2020**.
- **If the Black Sea deal is undermined**, India will have little options for lowering domestic cereal inflation through imports, especially in wheat. Unpredictable monsoon will also have impacts.

### The way forward for India:

- India should make efforts to address this issue through its presidency of the G20 grouping. India should not intensify the problem.
- There are concerns globally that New Delhi will block rice export if there is domestic inflationary pressure. The international ramifications should also be taken into consideration.
- India can put pressure on Russia through India's contact with Russia for restoring the world's access to Ukrainian wheat on humanitarian grounds.

## Mains point: Issues of global importance

### 6. New opportunities and a few old issues as Wickremesinghe comes calling.

#### Context:

The Sri Lankan President Ranil Wickremesinghe's upcoming visit to India, highlighting past tensions, current efforts for closer ties, and ongoing concerns regarding the Tamil issue in India-Sri Lanka relations.



#### The past tensions and ongoing concerns in India-Sri Lanka relations:

- **Commitment issues:** During Wickremesinghe's previous tenure as Prime Minister, he failed to move forward with the commitments made to India. For instance, projects like the development of the Trincomalee oil tank farm remained stagnant.
- **Hambantota port sale:** Under Wickremesinghe, the Hambantota port was sold to a state-owned Chinese company that had initially built it to settle Sri Lanka's debts.
- **Indian intervention in the 1980s:** India trained Tamil militant groups in the 1980s, leading to the 1987 India-Sri Lanka Accord. This caused resentment in Sri Lanka when the Indian Peace Keeping Force was deployed in the northern and eastern parts of the island nation.

### Ongoing Concerns in India-Sri Lanka Relations:

- **Docking of Yuan Wang 5:** Recently, a ship called Yuan Wang 5 docked in Hambantota. While Sri Lanka and China described it as a “**scientific research vessel**”, India viewed it as a “**surveillance**” ship with strategic capabilities.
- **Financial assistance & projects:** India’s financial help to Sri Lanka has led to some Sri Lankans feeling that their country is paying a heavy price for India’s assistance.
- **The Tamil question:** The demand for the full implementation of the 13th Amendment, which grants provincial autonomy to the Tamil-dominated Northern Province, remains a contentious issue. The amendment, introduced under the **1987 Accord**, hasn’t been fully implemented, leading to continued dissatisfaction among Tamils.

### The Tamil issue influencing the current dynamics between India and Sri Lanka:

- **1987 Accord obligations:** As a signatory to the 1987 Accord, India is seen as a guarantor of the agreement. Tamil groups demand that India ensure Sri Lanka fully implements the **13th Amendment, granting provincial autonomy to the Tamil-majority Northern Province**.
- **Election implications:** Some believe emphasizing the 13th amendment before upcoming elections may assist the Rajapaksas by portraying it as a “**separatist**” amendment.
- **Fishery disputes:** The issue of Tamil Nadu fishers poaching in Sri Lankan waters has caused friction between Tamils on both sides of the Palk Strait, affecting bilateral relations.

### The impact of this visit on India Sri Lanka relationship:

• **Strengthening economic ties:** Wickremesinghe’s emphasis on “**economic integration**” hints at possible advancements on agreements like the Economic and Technical Co-operation Agreement. His advocacy for bilateral deals and special trade areas with India’s southern states also hints at future collaboration.

• **Addressing controversial issues:** Past concerns like the Hambantota port sale to a Chinese firm and the docking of the “**surveillance**” ship Yuan Wang 5 in Sri Lankan waters affected trust. The visit might provide an opportunity to address and clarify these decisions.

• **Rebuilding political rapport:** Given the limited time of Wickremesinghe’s stay and New Delhi’s earlier reservations about him, this visit is significant in rebuilding political trust and understanding.

• **The Tamil issue:** Tamil groups pressuring India over the 13th Amendment showcases the importance of the Tamil issue in bilateral relations. Wickremesinghe’s interactions with Tamil parties before his visit underscores this.

• **Future commitments:** Wickremesinghe has expressed a desire for a long-term relationship “**transcending individual leaders or political parties.**” This visit will likely lay the groundwork for future engagements and collaborations, especially in economic sectors.

### Mains point: India-Sri Lanka relations

7. **Peace and prosperity in Mekong region play pivotal role in India’s Act East policy, says External Affairs Minister.**

### Context:

India’s External Affairs Minister has addressed the 12th Mekong Ganga Coop-

eration (MGC) Mechanism meeting.



### Mekong Ganga Cooperation(MGC):

- Mekong-Ganga Cooperation (MGC) was launched in 2000 at Vientiane, Lao PDR with the signing of the Vientiane Declaration.
- The grouping was initially called **Ganga Suvarnabhumi Programme (GMSP)**.
- **Aim:** Both the Ganga and the Mekong are civilizational rivers and the MGC initiative aims to facilitate closer contacts among the people inhabiting these two major river basins.
- **Members:** It is an initiative by six countries – India and five ASEAN countries, namely, Cambodia, Lao PDR, Myanmar, Thailand and Vietnam.
- **Meetings:** The MGC meetings are co-chaired alternately every year between India and one of the 5 Mekong countries.
- **Areas of cooperation:** The four foundational areas of cooperation under MGC include tourism, culture, education, and transport & communication.
- It has further expanded to include new areas like health and traditional medicine, agriculture and allied sectors, small and medium enterprises, water resources management, science and technology, skill development, and capacity building.

### The Quick Impact Project Initiative:

- The Government of India announced the implementation of **Quick Impact Projects(QIP)** in CLMV (**Cambodia,**

**Lao PDR, Myanmar, and Vietnam**) countries at the 6th Mekong Ganga Cooperation (MGC) Ministerial Meeting held in New Delhi in 2012.

- Each QIP project costs not more than US\$ 50,000/.
- The emphasis of QIPs is on short gestation high visibility projects with a normal gestation period of up to one year, which directly benefits the local communities with results that are immediate and visible.
- The type of projects under QIP includes the creation or up-gradation of physical infrastructure such as roads, local community centers and social infrastructures such as in the education, health, sanitation, or community development sectors.

### Prelims point:Mekong Ganga Cooperation

### 8. More than court action, revisit the Indus Waters Treaty.

#### Context:

The issues related to the Indus Water Treaty between India and Pakistan.

#### The issues faced by IWT:



- Over the past ten years, there has been a growing trend of using the judicial route to resolve disputes arising from the construction and design aspects of run-of-river hydroelectric projects.
- **The Indus Waters Treaty** permits India



to construct these projects on the tributaries of the Indus, Jhelum, and Chenab rivers before they enter Pakistan.

- In January of this year, Pakistan took the initiative to initiate arbitration at the **Permanent Court of Arbitration based in The Hague**.
- The purpose of this arbitration was to address matters concerning the certain design elements of **the Kishanganga and Ratle projects**, which are located on the Chenab river.

### There a need for a relook at IWT:

- The IWT provides only some element of predictability and certainty with regard to the future supplies of water to the riparian states. But, it needs to incorporate mechanisms that allow flexibility in case of changes in the quantity of water available for allocation among the parties.
- Bilateral water agreements are vulnerable to climate change.** These are concluded under the assumption that future water availability will remain the same as today.
- IWT does not take into account future water availability.** Climate change can alter the form, intensity and timing of precipitation and runoff. The Assumption regarding the supplies of water for agricultural purposes and industrial needs does not hold true.

### The way forward to reconcile the differences of India and Pakistan on IWT:

- Two cardinal principles of international watercourse law can be helpful. These are **equitable and reasonable utilization (ERU)** and the principle not to cause significant **harm or no harm rule (NHR)**.
- ERU requires that the states need to be guided by the factors mentioned in Article 6 of the Convention on the Law of the Non-navigational Uses of Interna-

tional Watercourses 1997, including climate change.

- The NHR stipulates that any riparian state planning a project on a shared watercourse, which could potentially impact other neighboring riparian states, must take necessary actions to prevent harm. This includes conducting a transboundary environmental impact assessment as part of the precautionary measures
- In a situation of conflict between different uses of water, it is suggested in Article 10 of the 1997 Convention to lean on "vital human needs" in the context of the ERU and the NHR.
- 'Vital human needs' principle is debatable but the inclusion of these principles in the IWT will help in resolving the differences.
- The World Bank may forge a transnational alliance of epistemic communities to build convergent state policies. It can lead to inclusion of these two principles in the IWT.

### Mains point: India and Pakistan bilateral relationship.

### 9. What are the takeaways from the NATO summit?

#### Context:

The North Atlantic Treaty Organization (NATO) summit was held recently at Vilnius, Lithuania.





### The North Atlantic Treaty Organization(NATO):

- . North Atlantic Treaty Organization (NATO) is a military alliance established by the North Atlantic Treaty (also called the Washington Treaty) of April, 1949.
- . It strives to secure a lasting peace in Europe, based on common values of individual liberty, democracy, human rights, and the rule of law.
- . Its initial members included the United States, Canada, and several Western European nations. However, the membership gradually expanded over the years and eventually reached 30.
- . It was established during the Cold War in response to the threat posed by the Soviet Union. The alliance has remained in place since the end of the Cold War, and has been involved in military operations in the Balkans, the Middle East, South Asia, and Africa.
- . NATO is based on the principle of collective security or defense. A 'NATO decision' is the expression of the collective will of all 30 member countries since all decisions are taken by consensus.
- . NATO's headquarters is located at Boulevard Leopold III in the city of Brussels, Belgium.
- . The most recent member state to be added to NATO was North Macedonia on 27 March 2020. NATO currently recognizes Bosnia and Herzegovina, Georgia, and Ukraine as aspiring members.

### The key takeaways from the recent NATO summit:

- . NATO acknowledged that the Russian Federation is the most significant and direct threat to Allies' security, peace, and stability in the Euro-Atlantic area. Their approach towards strengthening their defenses and deterrence against

Russia remains the recurring theme of the Summit document.

**There was an expectation of a timeline for the Ukrainian membership of NATO.** However, this did not happen but the leaders reiterated that NATO will be in a position to extend an invitation to Ukraine when allies agree and conditions are met.

In this regard, **the launch of the NATO-Ukraine Council** as a forum for crisis consultations and decision-making indicated that NATO tried to assuage the feelings of Ukraine for not being included in the alliance by creating a mechanism for its wider engagement, support and future inclusion as a full member.

The inclusion of Finland and approval of Sweden as NATO members indicates a few things.

It signals that NATO continues to practice **Article 10 of the Washington Treaty** signed in April 1949 which states that member countries can invite other European countries to become members of NATO.

Turkey moving back from its long-standing opposition to Sweden's inclusion in NATO is also a significant shift.

The summit minced no words on the challenges and threats emerging from China's stated ambitions and coercive policies. It stated that NATO faces threats from China's malicious hybrid cyber operations, as well as confrontational rhetoric and disinformation, which specifically aim at NATO allies and pose a threat to the security of the Alliance.

**Prelims point:The North Atlantic Treaty Organization(NATO)**

## 10. A race for the high seas dominion.

### Context:

In this article the author discusses the economic, technological, and strategic significance of the high seas, emphasizing the immense potential of marine resources and deep-sea mining.

Nations, including China, the US, and India, are racing to explore and control these areas due to their value in trade, research, and strategic dominance. The piece advocates for India to enhance its capabilities and approach in this realm for future benefits.

### The high sea:

The high seas are parts of oceans beyond national jurisdictions. They represent the global commons, shared by all of humanity.

Covering an area 1.7 times larger than Earth's inhabited land, they make up 95% of the sea's volume.

The high seas hold immense marine resources, drive a \$2.5 trillion trade, and are rich in minerals like polymetallic nodules.

New species for medicine and biotech research are also found here.

### The risk to high seas:

Uncontrolled activities: Increased human activity can harm ocean ecology.

Mining: The potential extraction of minerals like polymetallic nodules can damage marine environments.

Overfishing: Dominant nations, like China with its 1,900 vessels, risk depleting fish stocks.

New species threat: Exploration can disturb undiscovered species, impacting potential medical and biotech research.

Environmental concerns: Deep-sea mining, especially without sustainable methods, can harm marine ecosystems.

### The significances of high seas:

#### Economic Importance:

**Drives a substantial trade:** The high seas contribute to a global trade valued at \$2.5 trillion, making up nearly 3% of the world's GDP.

**Fishing potential:** Major nations like China (with its 1,900 vessels), Taiwan, Japan, and more have significant fishing operations. Valuable species like tuna and sharks are abundant.

**Treasure of new species:** Besides known marine life, the high seas may harbor undiscovered species that could be vital for medical and biotechnological advancements.

**Mineral wealth:** They contain vast amounts of essential minerals such as polymetallic nodules, rare earth metals, and others like copper and gold.

#### Technological Significance:

**Deep-sea exploration:** Achieving depths has become a technological race. The US reached 10,925 meters in 2012, while China hit just below 10,000 meters in 2020.

**Advancements needed:** Sustainable mining techniques are required to protect the environment, especially to minimize plumes from mineral dust.

**India's capabilities:** Currently, India can only send unmanned submersibles but aims to develop technology for deeper manned missions.

#### Strategic Importance:

**Symbol of global dominance:** Controlling the high seas indicates international influence.

**Security concerns:** China's positioning of ships in strategic oceanic locations impacts regional marine security.

**Breaking dependencies:** The US views deep-sea mining as a chance to reduce dependency on China for critical minerals, given China's control over resources like gallium and germanium.

**India's stake:** The Indian Ocean's high seas are 19 times India's landmass, mak-

ing their control strategically vital for the nation.

### Way forward:

- **Deep-sea Exploration:** India aims to send manned submersibles to 6,000 meters but currently only has unmanned capability. This should be improved upon.
- **Mineral Mining:** India's allotted areas in the Indian Ocean, like the 75,000 square km in the Central Indian Ocean Basin, have potential resources like nickel, copper, cobalt, and manganese. India should develop the capability to mine them.
- **Collaborate:** Consider partnering with like-minded nations, such as the QUAD, for shared benefits and knowledge exchange.
- **Promote Sustainability:** Champion technologies that allow for sustainable exploitation of the high seas' resources.
- **Strategic Presence:** Ensure dominance in the Indian Ocean to counteract the influence of nations like China.

### Mains point: High seas dominion

## 11. ASEAN, a persistence with dialogue, on a trodden path

### Context:

The 56th Foreign Ministers Meeting of the Association of Southeast Asian Nations, the post-ministerial conferences and other related regional meetings, held in Jakarta, Indonesia in mid-July, 2023.



### The vision of ASEAN:

- Political community that ensures regional peace and a just, democratic and harmonious environment.
- Economic community focused on achieving a well-integrated and connected regional economy within the global economic system.
- Socio-cultural community to enhance the quality of life of ASEAN's citizens as well as sustainable development of the region.

### The challenges faced by ASEAN:

- China has close political and economic ties with ASEAN member states. Laos, Cambodia, and Myanmar are considered as virtual dependencies.
- But, the Philippines has recently become more assertive in its claims in the South China Sea.
- **Indonesia, Malaysia, Singapore, and Thailand** hold favourable attitudes towards Beijing. None of these countries raises objections to China's delaying tactics in negotiating an enforceable code of conduct for the South China Sea.
- The strained relationship between the U.S. and China is a cause of worry for ASEAN.
- As per China, the U.S. is solely responsible for poor relations. It is not willing to accept and accommodate itself to China's '**peaceful rise**'. The U.S is against the Chinese aggressiveness and coercion in the Indo-Pacific and beyond.
- **ASEAN prefers the ASEAN Outlook on the Indo-Pacific (AOIP)**. Its four identified areas are maritime cooperation, connectivity, UN Sustainable Development Goals 2030 and economic cooperation. But, its actual implementation remains a worry.
- **ASEAN does not have a united position on the Myanmar situation.** ASEAN has barred Myanmar from all its political-level discussions. But, Thailand has

its own political dialogue with the military government.

### The importance of ASEAN for India:

- The significance of the ASEAN meetings for India becomes evident in the decision of External Affairs Minister S. Jaishankar to represent India at the post-ministerial conference and other regional dialogues.
- He emphasised the importance of a “**strong and unified**” ASEAN in the emerging Indo-Pacific dynamics and highlighted the alignment between the AOIP and India’s Indo-Pacific Oceans Initiative.
- He has proposed exploring “newer areas such as cyber, financial, and maritime security domains to enhance the comprehensive strategic partnership between India and ASEAN.

### Mains point: ASEAN.

## 12. The SCO is a success story that can get better.

### Context:

The recent important changes in the **Shanghai Cooperation Organization (SCO)**. The author calls for unity, security, and cooperation to face global issues. They stress the need for multilateralism and fair global governance. They also mention China’s commitment to these principles.



### About recent SCO Meeting:

- India hosted the 23rd SCO Meeting.
- Leaders signed the New Delhi Declaration.
- Iran became a full SCO member.

- Belarus is on track to join SCO.
- SCO’s economic plan for 2030 was adopted.

### The achievements of SCO over the years:

- **Shared Future Vision:** SCO promotes a vision of a shared future for mankind.
- **Mutual Support:** Member-states have consistently backed each other in upholding their core interests.
- **Synergized Development:** They’ve integrated their national development strategies and regional cooperation initiatives.
- **Promotion of Friendship:** SCO countries have embraced the spirit of good neighbourliness and friendship.
- **Partnerships:** They’ve formed partnerships based on dialogue, opting for cooperation over alliance.
- **Guardians of Peace:** The organization has actively contributed to regional peace, stability, and prosperity. For instance, the New Delhi Declaration was a significant step towards collective security and development.
- **Role Model:** SCO’s efforts reflect the broader aspiration for global peace, development, and win-win cooperation.

### Way forward:

- **Strengthen Unity:** SCO member-states should enhance strategic communication and support each other’s growth.
- **Security Cooperation:** Upgrade collaboration to counter threats like terrorism, separatism, and extremism. For example, vigilantly address developments pushing for a new Cold War.
- **Digital & Space Security:** Pursue cooperation in digital, biological, and outer space domains.
- **Economic Collaboration:** Push against protectionism and promote trade, investment, and technology ties.
- **Currency Initiatives:** Encourage local



currency settlement among SCO members and consider forming an SCO development bank.

**Promote Multilateralism:** Engage more with entities like the UN to uphold international order.

Act against Unilateralism: Stand united against hegemony, unilateralism, and Cold War mentality, rejecting unfair sanctions.

### **Mains point:the Shanghai Cooperation Organization (SCO)**

### **13. In Israel's floundering, their future, and ours.**

#### **Context:-**

The Israeli Knesset has voted 64-0 on a bill to limit judicial power. One of the objectives of the Bill is to limit the use of "reasonableness" as a standard to be used in judicial review.

#### **The criticism against the Israeli state:**

**The State of Israel came into being in the aftermath of the Holocaust.** There are contradictions between being a Jewish State and being a liberal democracy.

Israel had some of the features of European nationalism that was responsible for Jewish flight from Europe.

**It denied Palestinians all legitimate rights and occupied its territory.** Its goal is subjugation of the Palestinians and annexation of all Palestinian territory.

#### **The Israeli government curbing the power of the judiciary:**

Some view this crisis as simply a consequence of Benjamin Netanyahu's will to power.

Israel's judiciary has withstood wars and security challenges. Israel lacks federalism or a bicameral legislature to counterbalance executive authority. So, the judiciary is a critical pillar of the system.

Despite its significance, the judiciary has been unable to prevent the continu-

ation of the Occupation.

Nonetheless, there are concerns that the judiciary's emphasis on upholding a regime of rights might impede the government's comprehensive right-wing agenda.

#### **The Netanyahu strengthened his position through right-wing agenda:**

The collapse of the peace accords had detrimental effects on the political Left in Israel. It diminished its ideological influence.

**Israel's social fabric is intricate.** Netanyahu capitalised on this by rallying support against the established elites. He painted them as soft, culturally disconnected, and disdainful of orthodoxy.

**Netanyahu also harnessed the resentment of the orthodox community against secular and Jewish immigrants from other Arab countries.** This approach justified the dismantling of institutions under the guise of anti-elitism.

#### **Some valuable lessons about nationalism:**

At first glance, **ultra-nationalism may seem like a minor faction.** It is believed that we can keep it in check. However, its impact is far-reaching.

It gradually infects the political system. Economic growth and security measures do not curb its growth. Instead, it exploits these factors to strengthen its grip until it becomes too powerful to contain.

When culture intertwined with politics, it often leads to reactionary consequences. In current times, the flaws and inadequacies of liberal nationalism have been exposed. It is accused of not being liberal or nationalist enough.

**The lesson is clear:** Nationalism will perpetually demand more from liberalism than liberalism can extract from nationalism.

**Mains point: The state of Israel and nationalism.**

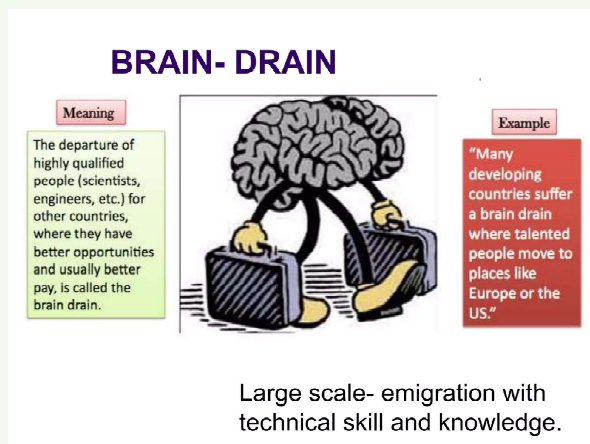
#### 14. Turning the tide on brain drain"

##### Context:

The causes behind Indians going overseas and the actions required to retain them in India.

##### The key highlights of the data regarding people moving abroad:

- Around 32 million Indians prefer to live in other countries. Around 18 million have gained citizenship abroad, while 14 million are non-resident Indians (NRIs).
- Over half of every batch of Indian Institute of Technology (IIT) graduates end up overseas. Even large corporations are establishing themselves abroad.



##### The concerns with this migration:

- The 32 million people, which is roughly 2.2 per cent of India's population, represent a significant opportunity cost for the country.
- **Their remittances have contributed to a growth in the GDP of India.** However, if they lived and worked here, they might have added several multiples of that to GDP.
- There are also young people looking to

move abroad every year, whose skills and earning capacity will be lost if the brain drain continues.

##### The reasons for migration:

- **Lack of Opportunity:** There is a lack of opportunity in India for highly educated people, businesses, research and for professionals.
- **Weakness of Indian passport:** Obtaining visas for First World countries is a challenging process for Indian citizens. Hence, there has been a rush for golden visas and for 10-year US visas as alternative options.
- Moreover, Indian passports also leads to difficulties for Indian passport holders in accessing various countries.
- **Tax and License Regime:** A lot of requirements need to be fulfilled before setting up a business in India. Similarly, managing tax filing and accounting are also challenging in India.
- Further, contractual issues in India are known for their slow resolution, and cross-border transactions add to the complexities.

##### The measures can be adopted to control migration:

- India currently has a low ratio of domestic investment in research, both from government budgets and private institutions
- Therefore, there is a need to promote research institutions and high-tech businesses in the country to create opportunities for highly educated individuals in India. There is also a need for relaxing investment rules and providing tax breaks for R&D initiatives.
- Simplifying tax processes and paperwork in India would benefit not only new entrepreneurs but also existing businesses already operating within India.

**Mains point: Reasons behind Indian citizens migrating abroad.**

## 15. Express View on India-China ties: Riding on hope.

### Context:

The Chinese President Xi Jinping might visit Delhi in September for the G20 summit.



### Some strategic experts optimistic over the Xi visit:

- Xi's presence in Delhi is an opportunity to end the current stalemate in bilateral relations that began with China's aggression in Ladakh in the summer of 2020.
- There was a meeting between National Security Adviser Ajit Doval and Wang Yi, in Johannesburg on the margins of a BRICS forum.
- A Chinese statement issued after the meeting referred to the "**Bali Consensus**" between Modi and Xi on the need to "**stabilize bilateral relations**".

### The prospects of resolving the stalemate in the relationship during Xi's visit weak:

- There was not much interaction between Modi and Xi at the G20 meeting in Bali,

Indonesia, last November.

- The Modi government has consistently emphasized that a return to normalcy in bilateral relations will not occur until Beijing restores peace and tranquility along the border.
- In contrast, Chinese officials have urged India to set aside the border issue and focus on cooperating in other domains. However, Delhi has maintained its stance that the condition of the border reflects the overall state of the relationship
- China is reluctant to address the territorial disputes with its neighbouring countries, such as Japan, the Philippines, Vietnam, Taiwan, and India.
- Despite this, Xi's diplomatic representatives try to present a positive outlook on the discussions with these neighbours and assert progress, even when there is none
- Recently, Beijing issued "**stapled visas**" to Indian athletes from Arunachal Pradesh participating in World University Games in Chengdu, China. Beijing uses the stapled visas to assert its territorial claim over Arunachal Pradesh.
- Territorial sovereignty is the major cause of multiple disputes between Delhi and Beijing. The PLA's aggressive behaviour on the disputed border has undermined the efforts to manage these issues.

**Mains point: Bilateral relationship between India and China.**

# ECONOMY

## 1. Mahila Samman Savings Certificate, 2023

### Context:

Public Sector Banks and eligible Private Sector Banks authorized to implement and operationalise Mahila Samman Savings Certificate, 2023

The Department of Economic Affairs, Ministry of Finance has permitted all Public Sector Banks and eligible Private Sector Banks to implement and operationalise the Mahila Samman Savings Certificate, 2023.

### Mahila Samman Savings Certificate Scheme

- Mahila Samman Savings Certificate is a one-time savings scheme for women.
- The scheme was announced in the Union Budget FY 2023-24 to provide financial security to every girl and woman in India.

### Key Features of the Mahila Samman Savings Certificate Scheme:

An account under this scheme can be opened by a woman for herself or by the guardian on behalf of a minor girl child.

### Tenure:

An account can be opened under this scheme on or before March 31, 2025, for a tenure of two years

### Interest rate:

The deposit made under MSSC will bear interest at the rate of 7.5% per annum which will be compounded quarterly.

### Limit on minimum and maximum investment:

- Minimum of Rs. 1000 and any sum in multiple of 100 may be deposited within the maximum limit of Rs. 200,000.
- Maturity of the investment under this scheme is two years from the date of opening of the account under the scheme.
- Partial withdrawal upto 40% of eligible balance can be availed after the expiry of one year from the date of opening of the account

### Significance of the scheme:

- This scheme is a commendable initiative by the Government to empower women and promote their financial independence.
- As the scheme yields high returns on investment in a short span of 2 years, it will definitely increase women investors especially in rural areas.

### Prelims Point: Mahila Samman Savings Certificate

## 2. What the Indian economy needs to complete with China

### Context:

A comparison of India's and China's growth rates.

The India of today in some ways is similar to China of 2007. China, in terms of per capita income had \$2,694 in 2007, while the IMF has also projected India's per capita income to rise from \$2,379 in 2022 to \$2,601 in 2023.

However, there are significant divergences between the two countries.



## The areas of divergence

### Investments:

- China maintained an investment to GDP ratio around 40 percent between 2003 to 2011. In comparison, even during this high growth phase, the investment ratio in India averaged only around 33 percent.
- During the period from 2012 to 2021, the Chinese economy continued to increase, with its investment ratio increasing to almost 43 percent, while India's investment ratio fell around 29 percent.

### Exports:

- In 2022-23, India's exports of goods and services surpassed \$770 billion, while imports were around \$890 billion. In 2007, when the Chinese economy was of comparable size, its exports had crossed \$1.2 trillion while imports stood at \$950 billion.
- Between 2007 and 2021, China's exports averaged around 24 percent of its GDP, while India's exports averaged roughly 21 percent during the same period.

### Tariff reduction:

- The reduction of tariffs has made China as the hub of the global supply chains. Its tariff rate declined from 10.69 percent in 2003 to 8.93 percent in 2007, and further dropped to 5.32 percent in 2020.
- In contrast, India's tariff rate declined from 25.63 percent in 2003 to 8.88 percent in 2017 but has risen thereafter.

### Labour force participation:

- China has consistently maintained a higher labor force participation rate compared to India. In 2007, China's labor force participation rate was nearly 73 percent, but it has declined to 67 percent since then.
- Whereas, In India, the estimated participation rate was around 50 percent in

2022, although it is higher according to the Periodic Labour Force Survey (PLFS).

- The difference in labor force participation rates between the two countries is mainly due to female participation.
- In China, the female labor force participation rate was 66 percent in 2007, which declined to 61 percent by 2022. Whereas, in India, the rate was at 30 percent in 2007 and has further decreased to 24 percent in 2022.

However, in terms of the sectoral deployment of their labour forces, **there are some similarities.**

For instance, China in 2007, had 41% of the labour force engaged in agriculture, 27% in industry and 32% in services. Whereas in India, in 2021, it was 44%, 25% and 31% respectively

### Challenges present with India's growth

- In India, most of the job creation has occurred in construction, trade, and transport sectors, rather than in manufacturing.
- However, estimates from the economic survey suggest that manufacturing has higher productivity than trade and construction. Hence, the lack of employment generation in the manufacturing sector remains India's biggest growth challenge.

### The way ahead

- It may be challenging for India to witness a rapid growth like that of China, which averaged 8 percent annual growth between 2007 and 2021.
- However, in order to achieve such growth, India needs to boost investment activity, enhance exports (especially in goods), increase female labor force participation, and promote low and semi-skilled employment in formal manufacturing.

## Mains Point: A comparison of India's and China's growth rates.

### 3. DPIIT successfully organizes National Workshop on Industrial Park Rating System

#### Context:

The Department for Promotion of Industry and Internal Trade (DPIIT) has successfully organized the National Workshop on Industrial Park Rating System (IPRS).

#### About Industrial Park Rating System (IPRS)

- The Industrial Park Rating System (IPRS) was launched by the Department for Promotion of Industry and Internal Trade (DPIIT) in 2018. It a pilot initiative, launched with the support of the Asian Development Bank (ADB) and the Ministry of Electronics and Information Technology (MeitY).
- It is an extension of the India Industrial Land Bank (IILB) platform which features more than 4,500 industrial parks

#### Aim:

To rate the country's industrial parks and special economic zones.

#### Parameters:

- It rates industrial parks across four pillars: internal infrastructure and utilities, external infrastructure and facilities, business support services, and environmental and safety management.
- Based on the findings of the pilot and review of the global approaches, frameworks, and guidelines DPIIT launched 'IPRS 2.0' in October, 2021. It is a key enabler for identifying additional measures to enhance industrial competitiveness.
- Compared with the 34-parameters assessment framework used for the pilot phase, 45 parameters were developed

for the assessment of industrial parks and 40 parameters separately for SEZs under the four pillars of IPRS 2.0.

### Prelims point: Industrial Park Rating System (IPRS).

### 4. Rules of origin delay FTA tariff discussions with EU

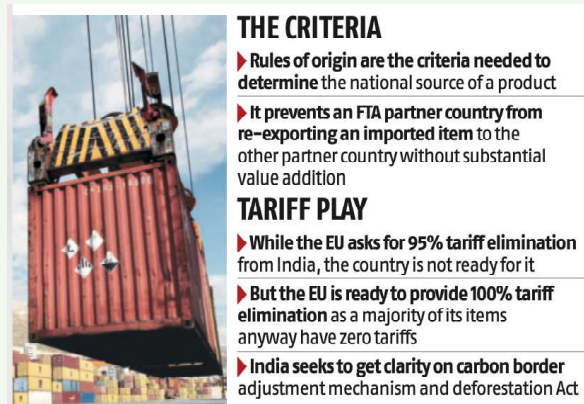
#### Context:

India and the European Union negotiations for free trade agreement (FTA)

India and the European Union (EU) have not been able to make major progress in the tariff negotiations under the ongoing free trade agreement (FTA) discussions due to differences over the rules of origin criteria.

This is because India wants a conservative rule of origin, while the EU wants us to follow liberal criteria.

#### Rules of origin



Rules of origin criteria are critical to determining the country of origin of a product. The country of origin refers to the country where the products were manufactured or substantially transformed.

#### Rules of origin used for

1. to implement measures and instruments of commercial policy, such as anti-dumping duties and safeguard

measures;

2. to determine whether imported products shall receive most-favored-nation (MFN) treatment or preferential treatment;
3. for the purpose of trade statistics;
4. for the application of labeling and marking requirements and
5. for government procurement.

### Criteria used to qualify for the rules of origin requirements:

1. Tariff level changes and minimum value additions are the two most commonly used criteria for a product to qualify for the rules of origin requirements.
2. Most developed countries prefer the flexibility to use either of the criteria, as it allows flexibility for exporters. India has traditionally preferred the use of both criteria and is not given the flexibility to use either of them

**Mains Point: Rules of origin criteria , India and the European Union negotiations for free trade agreement (FTA)**

### 5. A macro view of the fiscal health of States

#### Context:

Government Budgeting and the fiscal operations of the Indian states

The article discusses the fiscal operations of the Indian states and highlights the importance of understanding state finances to improve country's fiscal situation.

Indian states mobilize over a third of total revenue, spend 60% of combined government expenditure, and have around 40% share in government borrowing. The basis of this analysis relies on the data collected from the budgets (2023-24) of 17 major States in India.

### Majors finding of this analysis

- The general government deficit and debt, which increased during the COVID-19 pandemic, has started to recede.
- The Union level fiscal deficit declined from 9.1% of GDP in 2020-21 to 5.9% in 2023-24 (BE).
- All-State fiscal deficit was 4.1% of GDP in 2020-21, and it is expected to be 2.9% of GDP for the major States in 2023-24 (BE).
- These 17 major States contained their fiscal deficits despite revenue contraction during the peak of the COVID-19 pandemic.

### Factors that led the improvement in the fiscal situation

1. Union-State fiscal coordination during Covid,
2. Expenditure-side adjustments,
3. improved GST collection,
4. higher tax devolution, and
5. recovery in non-GST revenues.

### Remaining Fiscal challenges

- The reduction in the fiscal deficit has not been accompanied by a corresponding reduction in revenue deficit. Out of 17 major states, 13 states have a deficit in the revenue account in 2023-24 (BE).
- The all-State share of revenue deficit in fiscal deficit for the same year is expected to be 27%.
- The 12th Finance Commission identified three States, as fiscally stressed States, in term of revenue deficit. This number has increased to seven.

### Need to be done

- The focus should be brought back to the management of the revenue deficit. Following are some suggested measures:

- Linking interest-free loans to States with a reduction in revenue deficit can prevent diversion of borrowed resources and incentivize fiscal discipline.
- Implementing performance incentive grants based on revenue deficit reduction can further encourage fiscal balance and quality expenditure.

### **Mains Point: Fiscal operations of the Indian states**

## **6. What explains the resilience of Indian manufacturing?**

### **Context:**

About the improving manufacturing sector in India

The Manufacturing Purchasing Managers' Index (PMI) shows India as the only large economy whose factory output is growing significantly.

### **About PMI:**

- PMI or Purchasing Managers' Index (PMI) is an indicator of business activity both in the manufacturing and services sectors.
- It is a survey-based measure that asks the respondents about changes in their perception of some key business variables from the month before.
- PMI is derived from a series of qualitative questions. Executives from a reasonably big sample, running into hundreds of firms are asked whether key indicators such as (a) output (b) new orders (c) business expectations and (d) employment were stronger than the month before and are asked to rate them.
- The index is the sum of the percentage of higher responses and half the percentage of unchanged responses.
- The indices vary between 0 and 100 with

a reading above 50 indicating an overall increase compared to the previous month and below 50 an overall decrease.

- PMI involves surveys of purchasing managers in 500 manufacturing companies across 19 industries in India.
- It helps analysts and economists to correctly anticipate the changing economic trends in GDP, inflation, employment and industrial production.

### **India's manufacturing faring**

- The PMI was at 57.8 in June, slightly lower than 58.7 in May. A PMI above 50 indicates expansion or growth compared to the previous month, while a value below 50 signifies contraction.
- India's manufacturing PMI is indicating the resilience of the country's factory sector.
- The first three months of FY24 also saw a high manufacturing PMI, indicating a rebound in manufacturing, after a contraction of 1.3% in FY23.
- This has led to an increase in business confidence and optimism around future business activity among the industry.

### **Causes for manufacturing sector to revival**

- Strong demand from both domestic and international markets led to significant enhancements in production, sourcing, and hiring.
- As per the experts, this positive trend has been due to the government's increased spending, especially in capital expenditure, and due to the increasing demand for private consumption, which grew by 7.5% in FY23.

### **Its impact on economy**

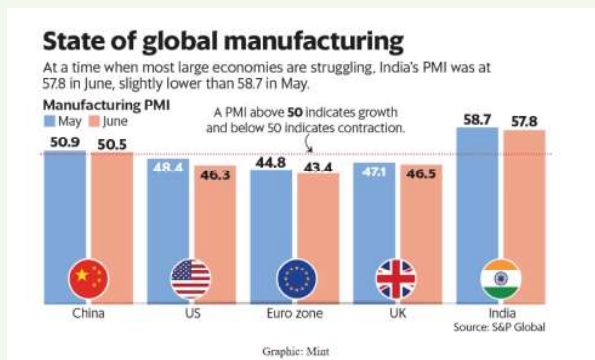
- Strong manufacturing performance is crucial for India to achieve high GDP growth.
- However, this growth is accompanied



by higher inflation and wage costs. Despite this, since demand is high, it will allow companies to pass on the increased costs to consumers.

### Other economies faring

- Major economies worldwide are facing challenges in their manufacturing sectors.
- China's June PMI of 50.5 was lower than May's 50.9, and manufacturing business confidence has reached an eight-month low. China is also struggling with declining export demand and falling employment.
- Even the Eurozone saw a PMI of 43.4 in June, indicating further contraction compared to May's 44.8. Similarly, the United States recorded a PMI of 46.3 in June, marking a six-month low compared to May's 48.4.
- The contraction in the UK's manufacturing sector has also worsened.



## Mains Point: Manufacturing sector in India

### 7. Next steps for GST - Administrative and policy interventions needed

#### Context:

Concerns present with the GST system and measures needed to address them

- After six years of implementation, the goods and services tax (GST) system seems to have stabilized, with monthly

revenues of at least ~1.5 trillion.

- A number of interventions over the years, such as the introduction of e-way bills, the use of e-invoice and technology, have improved efficiency.
- However, despite the achievements of the past six years, there are still concerns present with the GST system.

### Concerns present with the GST system

- In a recent special drive conducted by tax officials, approximately 60,000 suspicious entities were identified. After verifying 50,000 of them, it was discovered that about 25% were bogus.
- Hence, to strengthen the system, the administration is planning to introduce biometric authentication along with geo-tagging.
- The tax authorities have also found a number of instances of fake input tax credit claims. For example, GST officials in recent months have busted over 300 syndicates with estimated fake input tax credit claims of about ~25,000 crore.
- Hence, in this regard, it is important for new systems or changes in tax administration to minimize compliance burdens and allow registered entities to focus on their businesses.

### Way ahead

- First, there is a need for strengthening supervision in a sustained manner to check tax evasion and fraudulent claims of input tax credit.
- Second, the GST Council must also make necessary interventions. For instance, although there has been an improvement in revenue collection in recent years, the system still falls short of the initial expectations.
- The estimated GST collection in 2022-23 was 6.65% of the GDP, only slightly better than the 6.3% collected in 2016-17. Also, collection may be affected

when the extended compensation cess expires.

- Therefore, it is important that the GST Council addresses the long-pending issue of rationalising both rates and slabs. Reducing the number of slabs, along with adjustments in rates, will improve efficiency and collection.

### **Mains Point: Concerns with the GST system**

## **8. Startup20 -India's remarkable economic scale and market potential enable startups to flourish and thrive in global startup ecosystem: Union Commerce and Industry Minister**

### **Context:**

The Union Minister for Commerce and Industry has addressed the Startup20 meeting at Gurugram.

### **About Startup20**

- Startup20 is an official engagement group established under India's G20 Presidency.
- It acts as a dialogue forum with the G20 nations startup ecosystem stakeholders and intends to represent the startup ecosystem of the G20 nations to raise the macroeconomic concerns and challenges faced by the startup ecosystem players in these nations.

### **Startup20 Engagement Group will operate through three Task Forces:**

- 1. The Foundations and Alliances Taskforce:** It will work to create a startup terminology handbook, set up a global knowledge hub, and create bilateral and Multilateral collaborations with governments, policymakers, academic & research institutes, industry associations and international organizations to promote startups.
- 2. The Finance Taskforce:** It will broaden

the array of financial instruments available to startups, through policy level intervention and create pitching, capacity building and networking opportunities for startups with the global investor community.

- 3. Inclusion and Sustainability Taskforce:** It will work towards promotion of inclusive entrepreneurship, startups working towards inclusion, creating a sustainable planet on the back of startups working towards the SDGs, while also encouraging them to adopt growth-centric sustainable strategies.

### **First meeting of Startup20:**

Startup20's inception meeting was held in Hyderabad in January 2023. At the meeting, Startup20X was launched.

Startup20X is a platform conceptualized to host talks, conferences, and events conducted under the aegis of India's Startup20 Engagement Group. It will bring together leaders from the world of innovation and entrepreneurship and give them a platform to share their experiences and network with ecosystem stakeholders.

### **Prelims Point: Startup20**

## **9. Choose a new palette for India's creative economy**

### **Context:**

The challenges faced by Indian artists in promoting their art.

### **Creative economy and its significance**

- The creative economy refers to sectors of an economy that involve the creation and exploitation of creativity or knowledge. It includes areas such as art, music, film, design, and digital content creation. Its significance lies in its contribution to job creation, economic growth, tourism, and exports, and its role in fostering societal development.

Notably, the UNESCO World Conference on Cultural Policies and Sustainable Development (MONDIACULT 2022) recognized culture's economic importance and transformative power for sustainable development.

Challenges faced by Indian artistes

### Economic and market challenges:

Indian artists struggle with issues related to economic sustainability and gaining adequate market access to monetize their work.

### Preservation of traditional art forms:

In the face of rapidly changing societal trends, preserving and promoting traditional art forms presents significant challenges.

### Inequalities in representation and support:

Artists often face a lack of transparency in the selection process for financial assistance and event organization. Those based outside cities are particularly disadvantaged.

### Crime in the art world:

Artists must contend with art-related crimes such as theft, forgery, and illicit trafficking. These crimes undermine cultural heritage, financial security, and public trust.

## Solutions for the creative economy

### Promoting a collaborative cultural economy:

Creating a collaborative model that supports the cultural economy is vital. This includes encouraging tech-based startups in the arts sector.

### Capacity-building centre for artists:

A capacity-building centre can offer guidance, technical support, infrastructure, and access to investors, contributing to India's soft power.

### Training and professional development:

Artists need training, professional development, and market access. Networking within larger communities can also foster knowledge sharing.

Leveraging data analytics: Data analytics can be utilized to foster creative ecosystems that contribute to a sustainable world, highlighting emerging trends and informing policy recommendations.

### Facilitation mechanism for artists and entrepreneurs:

A facilitation mechanism can focus on fostering knowledge sharing, networking, and economic empowerment for individual artists and creative entrepreneurs. This can be achieved by offering business training, incubating innovative projects, and connecting them with global marketing platforms, tools, and practices. This platform can provide sustainable livelihood solutions for artists and artisans, leveraging the latest Information and Communication Technology (ICT) tools to enhance their participation in the business ecosystem.

**Mains Point: challenges faced by Indian artists in promoting their art.**

**Prelims Point: creative economy**

## 10. RBI panel recommendations for internationalization of rupee

### Context:

RBI panel recommends measures for internationalization of rupee

Reserve Bank of India (RBI) Inter-Departmental Group (IDG) has recommended several measures for Internationalization of rupee.

### About RBI Inter-Departmental Group (IDG):

Reserve Bank of India (RBI) had set up

an Inter-Departmental Group (IDG) under RBI Executive Director Radha Shyam Ratho.

### Mandate:

To review the position of the rupee as an international currency and to frame a road map for the internationalization of the domestic currency.

About Internationalization of the rupee

Internationalization of the rupee is a process that involves increasing use of the local currency in cross-border transactions.

Benefits of Internationalization of the rupee according to Inter-Departmental Group (IDG)

### The benefits are:

1. limited exchange rate risk,
2. lower cost of capital due to better access to international financial markets,
3. high seigniorage benefits and reduced requirement of foreign exchange reserves.

Note: Seigniorage is the difference between the value of currency/money and the cost of producing it. It is essentially the profit earned by the government by printing currency.

### Drawbacks of Internationalization of the rupee according to the RBI Inter-Departmental Group (IDG)

- The RBI group has cautioned that internationalization of rupee may result in increased volatility in the rupee's exchange rate in the initial stages.
- This would further have monetary implications as the obligation of a country to supply its currency to meet the global demand may come in conflict with its domestic monetary policies, popularly known as the Triffin dilemma.

### RBI panel recommendations for internationalization of rupee

- Inclusion of the rupee in SDR (Special Drawing Rights) basket. The SDR is an international reserve asset created by the IMF (International Monetary Fund) to supplement the official reserves of its member countries. The value of SDR is based on a basket of five currencies – the U.S. dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.
- Adopting a standardized approach for examining the proposals on bilateral and multilateral trade arrangements for invoicing, settlement and payment in Indian Rupees (INR).
- Opening of INR accounts for non-residents both in and outside India should be encouraged.
- Indian payment systems should also be integrated with other countries for cross-border transactions.
- Use of the existing bilateral and multi-lateral payment and settlement mechanisms such as ACU (Asian Clearing Union) to internationalize the rupee.
- Inclusion of Indian Government Bonds (IGBs) in global bond indices
- Rationalization of the foreign portfolio investor (FPI) regime to facilitate a more conducive environment for foreign investments into the Indian debt markets (both government and corporate).
- Waiver of the withholding tax for masala bond issuances.

### The way ahead

- The process of internationalising the Indian rupee requires permitting easier and more unconstrained transactions in the rupee.
- The development of financial and foreign exchange markets will also play a critical role in determining the pace of



internationalization of the currency.

- Further, as the Indian economy grows in size and as its trade linkages with other countries grow stronger, more space will be created for using the rupee in international transactions.

### Internationalization of rupee

India is aiming to make the rupee a global currency. Recently, the Reserve Bank of India (RBI) released the report of Inter-Departmental Group (IDG) on Internationalisation of Indian Rupee, which has made several recommendations for internationalizing the rupee. The group was constituted by the RBI to review the current position of the rupee as an international currency and to frame a roadmap for internationalisation of the rupee. The recommendations are significant, considering the economic sanctions imposed by the US on Russia for invading Ukraine and the growing demand for de-dollarization. Given Indian economy's status as one of the fastest-growing large economies and its ability to withstand challenges, the rupee has the potential to become an internationalized currency.

### Currency Internationalisation

- Currency internationalization refers to the use of a country's currency outside its borders for transactions involving residents and non-residents.
- An international currency performs all three functions of money. As a unit of account, it is used to invoice foreign trade and denominate international financial instruments by private actors and to express exchange rate relationships by government.
- As a medium of exchange, it is used by private actors to settle international economic transactions or by governments for exchange market intervention and

balance of payments (BoP) financing.

- As a store of value, it acts as a reserve currency and at a private level, it is held as capital assets.
- Internationalisation of the rupee involves promoting the rupee for import and export trade and then other current account transactions followed by its use in capital account transactions.
- Currently, the US dollar, the Euro, the Japanese yen and the British pound are the leading reserve currencies in the world.
- China's efforts to make its currency renminbi has met with only limited success so far.

### Rationale for internationalisation of the rupee

#### Increased linkages:

Internationalisation of the currency is closely interlinked with the nation's economic progress. Economic growth and development over the past few decades have led to a greater integration of the Indian economy with the global economy in terms of trade and capital flows. India's foreign exchange reserves have grown from USD 290.5 billion in August 2012 to USD 560.4 billion in August 2022. During this period, India's Foreign Direct Investment (FDI) has increased from 46.6 billion dollars to 84.8 billion dollars; imports have increased from 489.3 billion dollars to 612.6 billion dollars, and exports have grown from 306.0 billion dollars to 421.9 billion dollars. Therefore, the rupee has the potential to become an internationalized currency.

#### Declining share of the dollar:

The international monetary and financial system has moved towards being multipolar. Various bilateral and regional economic cooperation agreements have emerged. The share of the

dollar in foreign exchange reserves of countries is steadily declining. Other currencies are increasingly used in trade invoicing and settlement.

### Geopolitical:

In the wake of the sanctions imposed on Russia, many countries have become cautious of the potential costs if they are subjected to similar sanctions by the Western governments. China, Russia and a few other countries have become more vocal in questioning the US dollar-dominated global currency system.

### Recommendations of RBI panel

#### Short term recommendations

- Designing a template and adopting a standardised approach for examining the proposals on bilateral and multilateral trade arrangements for invoicing, settlement and payment in the rupee and local currencies.
- Making efforts to enable rupee as an additional settlement currency in existing multilateral mechanisms such as ACU.
- Encouraging opening of rupee accounts for non-residents both in India and outside India.
- Integrating Indian payment systems with other countries for cross-border transactions.
- Recalibrating the foreign portfolio investor (FPI) regime and rationalizing/harmonizing the extant Know Your Customer (KYC) guidelines.

#### Medium term recommendations

- A review of taxes on Masala bonds.
- International use of Real Time Gross Settlement (RTGS) for cross border trade transactions and inclusion of rupee as a direct settlement currency in the Continuous Linked Settlement (CLS) system.

- Examination of taxation issues in financial markets to harmonise tax regimes of India and other financial centres.

### Long term recommendation

- Efforts should be made for inclusion of the rupee in IMF's (International Monetary Fund) SDR (special drawing rights) basket.

### Benefits

For private sector

The benefits of currency internationalisation accrue largely to a country's private sector.

- **Firstly**, the internationalisation of currency limits the exchange rate risks for local exporters and importers. It is because domestic firms may be able to raise invoices and settle their exports/imports in their local currency. It shifts exchange rate risk to their foreign counterparts or customers.
- **Secondly**, it permits domestic firms and financial institutions to access international financial markets without assuming exchange rate risk.
- **Thirdly**, the internationalisation of domestic currency will offer new profit opportunities for domestic financial institutions to grow in the global financial market.
- **Lastly**, it will reduce the cost of doing business. It will motivate the existing exporters to increase their exports and investors to invest more in the exporting businesses. New players will find it attractive to enter the exports market. Overall, it will have a positive impact on economic growth and atmanirbhar Bharat program of India.

### For government

- **First**, currency internationalization allows a country's government to finance its budget deficit by issuing domestic currency debt in international markets

rather than issuing foreign currency instruments.

- **Second**, it also allows a government to finance part of its Current Account Deficit (CAD) without using its official reserves. The current account deficit may also be financed by private capital flows from abroad, especially from the banking system, as financing in domestic currency becomes integrated globally.
- **Third**, the internationalisation of a currency reduces the requirement for the authorities to maintain large foreign exchange reserves in foreign currencies to manage external vulnerabilities.
- **Fourth**, it leads in lowering the impact of sudden stops and reversals of capital flows and enhances the ability to repay external sovereign debt.
- As the international use of the rupee becomes significant, the bargaining power of Indian businesses would improve, adding weight to the Indian economy and enhancing India's global stature and respect.

### The macroeconomic risks

- Internationalisation of a currency may result in a potential increase in volatility of its exchange rate in the initial stages. This would have monetary policy implications as the obligation of a country to supply its currency to meet the global demand may come in conflict with its domestic monetary policies, popularly known as the Triffin dilemma.
- Also, it may increase the impact of an external shock due to the free flow of funds into and out of the country and from one currency to another.
- Thus, it would make the conduct of monetary policy more complex.

### Challenges

- International demand for the rupee is very low. The daily average share for the rupee in the global foreign exchange market is about 1.6%,
- The rupee is not fully convertible in the capital account and India's share of global exports of goods is just about 2%. This reduces the necessity for other countries to hold rupees.

### Initiatives taken

#### Indo-Nepal Remittance Facility Scheme:

This Scheme was launched by the RBI in May 2008 as an option for cross-border remittances from India to Nepal. The Scheme leverages the NEFT ecosystem.

#### Bilateral Swap Arrangements (BSA):

India currently has a BSA with Japan as a line of support in case of any balance of payments issue. Under the South Asian Association for Regional Cooperation (SAARC) swap agreement, the requesting central bank can make withdrawals in dollar, Euro and also in rupee.

#### Developments in the GIFT City:

Gujarat International Finance Tec-City (GIFT City) was set up as India's first International Financial Service Centre (IFSC). It has the potential to develop as an international financial centre for Rupee products and more specifically Rupee derivatives, given the fact that the Rupee derivatives are among the most traded contracts globally.

#### Indo-Iran Agreement:

An agreement was signed between India and Iran for undertaking eligible trade transactions using rupee.

#### Asian Clearing Union (ACU):

RBI had proposed the use of local currencies of members for settlement of

ACU transactions and inclusion of rupee as one of the settlement currencies under the ACU.

### Rupee as a Designated Foreign Currency in Sri Lanka:

This has paved the way for rupee-based bilateral trade between Sri Lanka and India.

### Use of Indian Payment Infrastructure:

RBI making efforts to increase the global outreach of the UPI system to facilitate cross-border transactions. Various other initiatives have also been undertaken to facilitate cross-border payments, especially personal remittances like the Money Transfer Service Scheme (MTSS).

### Other initiatives:

- RBI has enabled external commercial borrowings in rupees.
- The recent Foreign Trade Policy (FTP) 2023, proposes invoicing, payment, and settlement of trade in Indian rupees.
- RBI has permitted rupee settlement of external trade through Special Rupee Vostro Accounts (SRVAs). A total of 18 countries have been allowed to open SRVAs. (A vostro account is held by a bank on behalf of a bank in another country).

### The future course of action needed

- The RBI should pursue a deeper and more liquid rupee bond market to enable foreign investors and Indian trade partners to have more investment options in rupees.
- Indian exporters and importers should be encouraged to invoice their transactions in rupee. For this, the trade settlement formalities for rupee import/export transactions should be optimised.
- Additional currency swap agreements (as with Sri Lanka) would further allow

India to settle trade and investment transactions in rupees.

- Tax incentives must be given to foreign businesses to utilise the rupee in operations in India.
- Efforts must be made to make the rupee an official currency in international organisations, thereby giving it a higher profile and acceptability.
- The Tarapore Committees' (in 1997 and 2006) recommendations must be pursued including a push to reduce fiscal deficits lower than 3.5%, a reduction in gross inflation rate to 3%-5%, and a reduction in gross banking non-performing assets to less than 5%.
- Gradually, the rupee must be made more freely convertible. This would allow foreign investors to easily buy and sell the rupee, enhancing its liquidity and making it more attractive

### Mains Point: Internationalization of rupee

### 11. India and Asean top recipients of FDI, says UNCTAD report

#### Context:

The United Nations Conference on Trade and Development (UNCTAD) has published its World Investment Report 2023.

### The key findings of the World Investment Report 2023

#### Globally:

- The global FDI fell by 12% in 2022 to \$1.3 trillion mainly due to overlapping global crises: the war in Ukraine, high food and energy prices, and soaring public debt.
- The decline was felt mostly in developed economies where FDI fell by 37% to \$378 billion. But flows to developing countries grew by 4% with a few large emerging countries attracting



most of the investment while flows to the least developed countries declined.

- Investments in renewables have nearly tripled since 2015. But most of the money has gone to developed countries.
- Developing countries need renewable energy investments of about \$1.7 trillion each year but attracted only \$544 billion in clean energy FDI in 2022.

### India:

- India was the third largest recipient of foreign direct investment (FDI) in greenfield projects in the world in 2022.
- The FDI flows into India rose 10 per cent from \$44.7 billion in 2021 to \$49.3 billion in 2022.
- However, the total FDI inflows to India in 2022 was still lower than what was recorded in 2020, when India received \$64 billion of foreign investments.
- India was also the second-largest recipient of international project finance in the world in 2022. International project finance is when international lenders provide debt or equity to infrastructure projects in various countries.
- Moreover, Indian multinational companies substantially increased their overseas investments in 2022. Indian companies invested about \$42 billion overseas, a three-fold increase in total investments.

**Prelims Point: World Investment Report 2023**

**Mains Point: World Investment Report 2023**

## 12. Tomato challenge: Hoarding is not as bad as it sounds

### Context:

Issues related to inflation

The ministry of consumer affairs an-

nounced a 'Tomato Grand Challenge' with the objective to ensure the availability of tomatoes at fair prices.

### The popular perception about hoarding

- There is perception is that holding back supply causes the price to rise. People form an opinion based on what is visible today and ignore what is likely to happen tomorrow.
- People cannot make much sense of year-on-year price changes. They tend to have a recency bias. People compare today's prices with those of goods when last purchased.

### Impacts of high inflation on food items

- Relatively low-income families face the brunt of it in terms of household expenditure when these prices shoot up, and without notice.
- In contrast, farmers face distress when prices collapse suddenly, resulting in severe losses.

### Hoarding is essential for producers due to the following reasons

- Farmers have destroyed excess produce to avoid a price collapse. They should have an option to stock the extra produce.
- The demand for food products is relatively stable. Variations in supply cause dramatic changes in these prices. Hoarding tends to reduce price volatility.
- The release of hoarded produce also lowers tomorrow's prices when tomorrow comes. This is called 'invisible' trade-offs because what happens tomorrow cannot be seen today.

### About the current inflation scenario

- 1) The recent Consumer Price Index (CPI) data shows a rise in inflation with June's CPI reaching a three-month high of 4.81%.
- 2) Food prices are leading this surge, es-

pecially in the food and beverages sector, which makes up almost 46% of the CPI's weight.

- 3) Specifically, cereals witnessed a 12.7% price gain, eggs rose by 7%, dairy by 8.56%, pulses by 10.5%, and spices by a sharp 19%.
- 4) Vegetable prices, though still in the disinflation zone, rose significantly in June, with tomatoes increasing by 64% from May.
- 5) Despite inflation being at 7.01% in June 2022, current trends indicate a resurgence in price pressures.
- 6) Erratic monsoon rains and lower sowing of the kharif crop could potentially lead to further inflationary pressures.
- 7) Policymakers must therefore tighten control over prices to support economic recovery.

### Reasons for the rising inflation

- 1) Rising food prices are a major cause of inflation, with the food and beverages group's inflation reaching 4.63%.
- 2) Specific food items like cereals and spices saw significant price increases, at 12.7% and 19% respectively.
- 3) Even vegetable prices, despite being in the disinflation zone, witnessed a sharp rise in June.
- 4) Core inflation (excluding food and fuel) remains steady but high at 5.16%.
- 5) Agricultural trends such as erratic monsoons and lower kharif sowing have resulted in potential crop output uncertainties, which may further fuel inflation.

### Impact of agricultural trends on inflation

#### Impact of monsoon trends on inflation:

Erratic monsoon trends are causing uncertainties in the agricultural sector. These uncertainties may disrupt crop outputs, leading to price increases and

thus influencing inflation rates.

#### Impact of sowing trends on inflation:

As of July 7, overall kharif sowing was 8.7% lower than the previous year. This shortfall, especially a 24% drop in rice sowing and a 26% drop in pulses, could reduce crop availability, pushing prices and consequently inflation upwards.

#### Impact of oilseeds deficiency on inflation:

With oilseeds reflecting a 14% deficiency compared to 2022 levels, there's a potential risk for inflation increase due to higher cooking oil prices.

#### The way forward

- There is need to develop cold storage options for cultivators. These should be accessible at reasonable prices. Cultivators should be allowed to decide when to bring their supply to the market.
- There is need for creative ideas for developing integrated supply chain. Innovative solutions to achieve low-cost cold storage of farm produce and develop an efficient food processing sector can be helpful.

### Mains Point: recent rise in inflation in India

## 13. Who can dethrone the US dollar?

#### Context:

Concerns associated with adopting alternatives payments system against dollars.

Countries around the world are taking measures for de-dollarization and coming up with alternative transaction mechanisms. However, the factors that make the dollar an international currency must be considered.

Some of the previous attempts to dethrone the dollar

**Japan:**

- During the 1990s, Japan was the second-largest economy in the world, had good institutions, and it commanded confidence from the world on inflation, taxation, and capital controls.
- It tried a big “industrial policy” push to establish the Japanese yen as a major international currency. However, the attempt failed.

**Euro:**

- After the failure of Japan, the euro emerged as a significant currency and the European Union (EU) began to rival the US as an economic powerhouse.
- This gave the euro recognition as an international currency. However, the euro remains a minor player compared to the dominant position of the US dollar.

**Measures are being taken by China**

- The Chinese government is making efforts to promote the renminbi as a global currency. However, China faces more challenges compared to Japan.
- China has strict capital controls, similar to India, which restrict the flow of money in and out of the country. The Chinese central bank primarily pegs the renminbi to the US dollar, which means it is not truly an independent exchange rate.
- Further, China lacks confidence in managing inflation and taxation and it also does not have an appealing financial system that attracts non-resident investors or fundraisers. Hence, this ambition of the Chinese state is likely to go unfulfilled.

**Way ahead for India**

- First, India has the potential to become a major producer of internationalized financial services.

- This can be achieved by implementing the recommendations of the Percy Mistry report on making Mumbai an international financial center and the Financial Sector Legislative Reforms Commission report by Justice Srikrishna.
- Second, policymakers should aim to restore the pre-independence era where the rupee was widely trusted and used across South Asia, Southeast Asia, West Asia, and East Africa.
- This requires maintaining good institutions over a period of 50 years, particularly regarding inflation, taxation, capital controls, and demonetization. In terms of inflation, the goal should be to sustain the 4 percent inflation target consistently over a 50-year period.

**De-dollarisation of global trade**

The global dominance of the US dollar in international trade and finance has long been a topic of discussion among policymakers and economists. In recent years, there has been a growing trend towards “De-dollarisation of global trade”, where countries seek to reduce their dependence on the US dollar in international transactions. This shift is driven by a desire to reduce exposure to currency risk and increase economic autonomy. While there are opportunities associated with de-dollarisation, such as increased trade and financial independence, there are also significant challenges, including the potential for increased currency volatility and geopolitical tensions.

**De-dollarisation of global trade**

De-dollarization of trade refers to the process of reducing dependence on the US dollar for international transactions, trade settlements, and financial operations. This can be achieved by using alternative currencies or assets, such as the Euro, Chinese Yuan, or even

cryptocurrencies. The primary goal of de-dollarization is to diversify the global economy, minimize risks associated with the US dollar's dominance, and reduce the impact of US monetary policy and political decisions on other countries.

The need for the De-dollarisation of global trade

### The weaponization of trade:

Countries need to reduce their reliance on the US dollar to protect their economies from sudden policy changes or geopolitical tensions that result from US monetary policies and sanctions. This necessity is evident in Russia's push for de-dollarisation due to the impact of US sanctions on its economy.

### Monetary Sovereignty breach:

There is a need for countries to establish greater control over their monetary policies and enhance their financial autonomy. This can be achieved through de-dollarisation, as demonstrated by China promoting the use of the yuan in international trade to increase its economic influence and independence.

### Global Financial Instability:

The need for de-dollarisation arises from the desire to create a more diverse global reserve currency system, reducing the risks associated with overreliance on a single dominant currency like the US dollar. The European Union's efforts to increase the international use of the euro are driven by this need for greater financial stability.

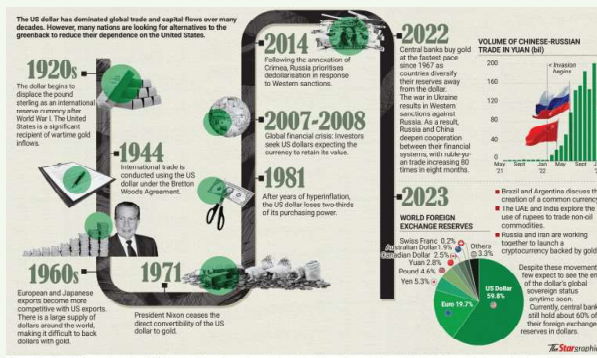
### Exposure to Currency Fluctuations:

Dollarisation has increased countries' exposure to currency fluctuations resulting from the US dollar's volatility. For example, countries with high levels of dollar-denominated debt can be severely affected by fluctuations in the US dollar's value, leading to increased

debt servicing costs and financial instability.

## Global efforts towards the De-dollarisation of trade

### De-dollarisation of global trade evolution



Aftermath of the 2022 Russia-Ukraine conflict: As the US and its allies imposed strict economic sanctions on Russia, including cutting off its access to the SWIFT payment system, Russia had to find alternative ways to conduct international trade and financial transactions. In response, Russia has been accelerating its de-dollarization efforts, increasing the use of alternative currencies like the Euro and Chinese Yuan for international trade, and developing its own payment systems like the System for Transfer of Financial Messages (SPFS) and the Mir payment card system.

### China's Cross-Border Interbank Payment System (CIPS):

Launched in 2015, CIPS is a payment system that facilitates cross-border transactions in the Chinese yuan.

### SDR-like basket currency for BRICS nations:

BRICS nations (Brazil, Russia, India, China, and South Africa) have displayed increased cooperation and intent to change the dollar-dominated financial system.



### **African Continental Free Trade Area (AfCFTA):**

AfCFTA, which started its operational phase in July 2019, aims to create a single market for goods and services across the African continent. One of the key objectives is to promote intra-African trade using local currencies, which can help reduce the reliance on the US dollar for trade settlements among African countries.

### **European Central Bank's TARGET2 System:**

Launched in 2007, the TARGET2 (Trans-European Automated Real-time Gross Settlement Express Transfer System) is a payment system for the real-time processing of cross-border transfers within the European Union. This system enables EU member countries to conduct trade and financial transactions in euros, reducing their reliance on the US dollar.

India pursuing the de-dollarisation of trade through

### **Promoting Bilateral Trade Settlements in Indian Rupees:**

In this respect, the Reserve Bank of India (RBI) has permitted banks from 18 countries to open Special Vostro Rupee Accounts for settling payments in Indian rupees. This allows partner countries to bypass the US dollar and use Indian rupees for trade transactions, reducing reliance on the US currency and promoting the use of local currencies in international trade. Bangladesh has become the 19th country to settle bilateral trade with India using Indian rupees and Bangladeshi taka.

### **Strengthening Trade Pacts with Partner Countries:**

India has been working on finalizing trade pacts with several partner countries, such as the UAE and Australia, to

facilitate the use of Indian rupees in bilateral and global trade. By negotiating trade agreements with countries like the UK and the European Union, India is making efforts to establish the Indian rupee as a more prominent currency in international trade, furthering the de-dollarization process.

### **Establishing Currency Swap Agreements:**

India has also been entering into currency swap agreements with different countries to facilitate trade and investment. For instance, the Reserve Bank of India (RBI) has signed an agreement to extend up to a USD 200 million currency swap facility to Maldives Monetary Authority (MMA) under the/ SAARC/ Currency Swap Framework.

### **Expanding Local Currency Settlement Frameworks:**

India has been working towards expanding its local currency settlement frameworks with other countries to promote de-dollarization. In 2020, India and Japan expanded their Bilateral Swap Arrangement (BSA) to include local currency settlement, enabling trade settlements in Indian rupees and Japanese yen.

### **Encouraging Regional Financial Integration:**

India has been actively participating in regional financial integration initiatives to promote the use of local currencies in trade. For example, India is a member of the South Asian Association for Regional Cooperation (SAARC) and has been working towards promoting the use of local currencies within the SAARC region.

### **Promoting Cross-Border Digital Payments:**

India has been investing in cross-border digital payment systems to facilitate trade and financial transactions in local currencies. For instance, India and

the United Arab Emirates (UAE) launched a Remittance Facility, which allows instant money transfers between the two countries in Indian rupees and UAE dirhams.

### **Strengthening Economic Ties with Emerging Economies:**

India has been focusing on strengthening its economic ties with emerging economies like Brazil, Russia, China, and South Africa (BRICS) to diversify its trade partners and reduce its reliance on the US dollar. India, along with other BRICS countries, is exploring the possibility of creating a new development bank and a common currency for settling trade transactions among the member countries.

Some opportunities provided by the de-dollarisation of global trade

### **Diversification of Risks:**

De-dollarization helps countries diversify their risks by reducing dependence on a single currency, the US dollar. By using alternative currencies, countries can better manage the impact of fluctuations in the dollar's value and minimize the effects of US monetary policies on their economies. For instance, during the US-China trade war, China increased its use of the Yuan in international transactions to reduce the impact of tariffs and the dollar's fluctuation on its economy. Increased

### **Monetary Policy Autonomy:**

De-dollarization allows countries to exercise greater autonomy in their monetary policies, as they become less influenced by the US Federal Reserve's decisions. For example, Russia's efforts to de-dollarize its economy since 2014 have allowed it to maintain more control over its monetary policy, even amid economic sanctions imposed by the US and its allies.

### **Strengthening Regional Currencies:**

De-dollarization can strengthen regional currencies by encouraging their use in international trade and finance, boosting their credibility and attractiveness to investors. Such as the promotion of the Chinese Yuan in the Belt and Road Initiative has led to its increased use in international trade and finance, raising its profile as a global currency.

### **Encouraging Regional Cooperation:**

De-dollarization can foster greater regional cooperation among countries by promoting the use of regional currencies, leading to stronger trade ties and economic integration. For example, the BRICS nations (Brazil, Russia, India, China, and South Africa) have been exploring the possibility of using their national currencies for trade settlements and creating a new global reserve currency as an alternative to the US dollar.

### **Reducing Sanctions' Impact:**

De-dollarization can help countries insulate themselves from the effects of economic sanctions imposed by the US or other entities, by enabling them to conduct trade and financial transactions through alternative channels. For instance, Iran has been increasingly using barter arrangements, local currencies, and cryptocurrencies to bypass US sanctions and maintain its international trade.

Challenges associated with the de-dollarisation of global trade

### **Currency volatility:**

De-dollarisation can lead to increased currency volatility as countries transition to using new currencies for trade. This can create uncertainty for businesses and investors.

### **Limited acceptance of local currencies:**

Local currencies may not be widely ac-

cepted outside of their home countries, which can create difficulties for international trade. Lack of liquidity: Local currencies may have limited liquidity compared to the US dollar, which can create challenges for large transactions.

### Limited use in financial markets:

Local currencies may not have the same level of use in global financial markets as the US dollar, which can limit their usefulness for international trade.

### Resistance from established players:

Established players in the global financial system, such as the US and other Western powers, may resist de-dollarisation efforts, which can create geopolitical tensions.

### Implementation challenges:

There may be challenges in implementing de-dollarisation, including developing new payment systems and addressing legal and regulatory barriers.

### India should focus on the de-dollarisation of trade, this can be done through:

#### Reducing Dependence on a Single Currency:

De-dollarisation will reduce India's dependence on the US dollar as a global reserve currency, which will help insulate the Indian economy from any potential negative impacts of global events. For instance, in recent years, India has faced difficulties due to the impact of global events like US sanctions on Iran and Russia, and the COVID-19 pandemic. De-dollarisation can help minimize the risks associated with these events.

#### Promoting Regional Trade:

De-dollarisation can promote regional trade and cooperation, particularly with BRICS nations, which will help India reduce its dependence on Western powers. For example, India has been explor-

ing the idea of using the Indian rupee in bilateral trade with oil-exporting countries and has created a multi-agency task force to compile a list of countries where India could trade in rupees. This will promote regional trade and reduce dependence on the US dollar.

However, de-dollarisation comes with challenges, including the need for infrastructure to support new payment systems and potential currency volatility. India will need to carefully navigate these challenges to successfully implement a de-dollarisation strategy.

### Mains Point: de-dollarisation

## 14. Improving Pensions

### Context:

The issues related to pension funds in India.

### Issues related to pension funds in India

**Return on investment**– The majority of the funds are composed of investment returns. But, long-term real returns on debt instruments are relatively low.

There are two primary reasons for this.

1. Firstly, banks in India are required to maintain a statutory liquidity ratio. As a result, the demand for these bonds is high. It drives up their prices and consequently lowering yields.
2. Secondly, in order to stimulate economic growth, the Reserve Bank of India (RBI) maintains a low real repo rate. This has an impact on overall returns on investment.

**Risk on investment**– Investment returns also come with certain risks.

1. Inflation risk is the first one. It can diminish the real value of the corpus held by pension funds.
2. The second risk is interest rate risk. It

can cause significant fluctuations in bond and equity prices, affecting pension funds.

3. Another risk is the potential change in market sentiment. Both equity and bond prices can fluctuate for prolonged periods. This poses risks to pension funds.

**Dependence on authorities**– The risks associated with investments depend on the actions of public authorities. Asset markets do not operate independently.

- They function within a macroeconomic policy and regulatory framework. If these policies and regulations are not appropriate, investment risks can be very high.
- Suitable changes in policy and regulations can help mitigate risks and improve the gains for pension funds.
- Furthermore, the repo rate is a key policy tool used by the RBI to maintain macroeconomic stability. This rate undergoes significant changes over an economic cycle.
- It affects interest rates in the broader economy. However, there is often an overreaction in asset markets, posing risks to pension funds.

**Regulatory framework**– There are also concerns related to the regulatory framework governing investments. One key issue is the absence of regulations addressing the pervasive role of market sentiment.

**Mains Point: Pension funds in India.**

### 15. RBI presses ahead with VRRR to suck out excess liquidity from banking system

**Context:**

The Reserve Bank of India (RBI) has said that it will conduct a three-day variable

rate reverse repo (VRRR) auction for Rs 2 lakh crore.

### Variable rate reverse repo (VRRR)

- The Reserve Bank of India (RBI) uses various ways to increase or decrease liquidity in the banking system.
- Repo rate is the rate at which the central bank gives loans to commercial banks against government securities.
- Reverse repo rate is the interest that RBI pays to banks for the funds. Variable rate reverse repo (VRRR) is a sub-type of reverse repo.
- RBI has been conducting VRRR every day since June 30 to ensure that the overnight call money rate remains close to the target rate of 6.50 per cent

**Prelims point: Variable rate reverse repo (VRRR)**

### 16. The rise of revenue department

**Context:**

Mobilization of resources and associated issues

The recent multiple changes made by the Indian government to the Tax Collection at Source (TCS) system depicts a troubling shift in the revenue department's approach to tax initiatives.

Although India's tax system needs a more transparency, minimized discretion, and improved ease for taxpayers, it seems revenue department is returning to pre-reform practices. It is imposing unfriendly tax laws.

**Some recent changes made to the taxation system by the government**

- on February 1, government announced all Liberalised Remittance Scheme (LRS) remittances would be subject to the tax collection at source (TCS). TCS rate was increased from 5% to 20% for both LRS



remittances and overseas tour packages.

- On May, government announced removal of differential treatment for credit cards for international transactions. This meant that credit card payments for foreign exchange bills would also attract a 20% TCS.
- The third change announced last month rolled back the changes. For all remittances under the LRS and overseas tour packages, the TCS rate became zero for amounts up to ₹ 7 lakh per individual per year. It also exempted overseas credit card transactions from the LRS.

### Critical arguments against these moves

- TCS rate was initially justified as a means for the government to monitor transactions. However, Banking records could already provide a trail for the tax department to monitor for tax evasion.
- It shows that revenue department has been experimenting with unfriendly tax initiatives.
- It also indicates returning to old practices that had been reduced after the economic reforms of the 1990s. These reforms included significant cuts in import duties, reduction and rationalization of direct taxes, and the implementation of the goods and services tax (GST).
- The changes to the TCS for LRS remittances suggest a return to pre-reform practices.

### Mains Point: recent changes made to the taxation system

### 17. It is unfair to blame survey methodology when results disagree with a view point

#### Context:

Concerns associated with various sur-

veys conducted in India

In a recent article titled “The sample is wrong,” Shamika Ravi, a member of the PM’s Economic Advisory Council, expressed concerns about national surveys in India. However, it is not a correct picture.

### Concerns were highlighted by Shamika Ravi

#### Under-Representation:

- She argued that indicators used by the National Sample Survey (NSS) and the World Health Organization (WHO) have failed to capture the true progress of India, and they express concerns about the deterioration of the official statistical system.
- The overestimation of the rural population in national surveys conducted by NSS and NFHS (National Family Health Survey) is cited as an example of this shortcoming.
- However, the national data gathering system has gone to great lengths to make the samples statistically representative.
- For instance, separate samples are drawn for rural and urban areas, and any excluded geographical regions are clearly specified for reasons beyond the organization’s control.
- Moreover, the population estimates derived from the NSS have consistently been lower than the numbers reported by the Census or its projected figures.
- Although this disparity has been investigated in the past, no specific faults in the survey methodology have been identified.

#### Share of the Rural Population:

- Shamika Ravi further argued that the share of rural population estimated by NSS/NFHS post 2011 Census is much higher than the projected share of rural

population from the Census.

- However, population projection is based on assumptions on fertility, mortality and migration using appropriate statistical models.
- The urban population is projected using the urban-rural growth differential (URGD) from the period 2001-2011, which implicitly takes into account increases both in statutory and Census towns.
- Moreover, the primary objective of the NSS and other survey agencies is to generate statistically valid estimates separately for rural and urban areas.
- They typically report percentage values rather than absolute numbers across different categories. Their methodologies are not designed to estimate the population size in the survey year.

### Conservative in Urban Projections:

- Shamika Ravi argues that the Census has been conservative in its urban projections as India achieved the urbanisation level projected for 2016 in 2011.
- However, using the method of URGD, even the United Nations (UN) has projected a much higher share of urban population in India.
- It is also worth noting that the last Census data is over 13 years old, and despite several representations, the Registrar General of India (RGI) has not made efforts to reassess its urban projections.

### Response Deficits:

- Shamika Ravi observes a relationship between response deficits in surveys and wealth levels. It is true that household surveys are becoming difficult due to non-cooperation of households and non-access to richer households in urban areas.

- However, the NSS utilizes a substitution method for non-cooperating households, ensuring a near 100 percent response rate. Hence, the observation that the response rate of men falls significantly with wealth needs investigation.

### Way ahead

- Sampling theory and practice is a scientific discipline. Even some of the surveys conducted by MOSPI have also been found to be of indifferent quality due to engagement of outside agencies.
- Hence, it is unjust to solely blame the survey methodology when survey estimates diverge from a particular narrative.

### Mains Point: Concerns associated with various surveys conducted in India

### 18. How the CPI basket conceals the inflation picture

#### Context:

Issues present in calculating the Consumer Price Index (CPI).

#### The issues present with the CPI basket

#### Inclusion of Outdated Items:

- The CPI still monitors a wide range of items, including outdated technologies like torches, radios, tape recorders, CDs, DVDs, etc.
- These items have minimal significance in the overall CPI calculation and no longer reflect our current consumption patterns.

#### Over-reliance on Food Inflation:

- The weightage of food in the CPI basket has decreased from 60.9 (in 1960) to 57.0 (in 1982) and to 46.2 (in 2001). This gradual decline indicates that as the economy/income grows, the proportion of income spent on food decreases. This trend is known as Engel's Law.

- However, India still has a significant weightage of food in the CPI. This over-reliance on food inflation distinguishes Indian inflation from many other developed countries where the food weight is much smaller.
- This shift in the developed countries imply that as people's income rises, they tend to allocate a larger proportion of their spending towards non-food items such as housing, education, healthcare, personal care, etc.

### Excessive Weightage to Cereals:

Cereals are assigned excessively high weight of 9.67 in the CPI basket.

This raises two issues –

1. as economies grow and societies evolve, people's eating habits diversify. This includes moving towards a broader range of nutrient-rich options beyond cereals. This shift in food consumption patterns would have naturally occurred over the past decade, reducing the relative expenditure on cereals.
2. the Pradhan Mantri Garib Kalyan Yojana has significantly decreased cereal expenses for a large segment of the population, potentially modifying consumption patterns and further reducing the relative expenditure on cereals.

Despite these changes, cereals still have excessive weightage in the CPI basket.

However, even though current evolving pattern of consumptions are included in the CPI, challenges would still remain.

### The challenges present with updating CPI

- Weights for CPI can only undergo a significant shift after data from the Household Consumption Expenditure Survey (CES) is available.
- The Ministry of Statistics and Programme Implementation (MoSPI) is currently

conducting the CES, with the first round scheduled to conclude in July 2023 and the second round a year later in July 2024.

- However, even when the CES results are published around December 2024, creating a new CPI based on this fresh data will take several more months.
- Therefore, till then we will continue to rely on outdated parameters to assess inflation. This affects the accuracy of measuring the cost of living and economic well-being.
- Moreover, the lack of the CES data has resulted in various issues such as – a) it has become difficult to determine the population under the poverty line accurately, and b) tracking inflation effectively.

### The way ahead

It is crucial for the MoSPI to address these gaps promptly. Efficient data processing should be prioritized without compromise.

### Prelims Point: CPI

### Mains Point: Calculating the Consumer Price Index (CPI).

## 19. The China traps

### Context:

Chinese growth story and lessons for India

There is some disconnect between how China's position as an economic power is portrayed and its actual trajectory.

### The current economic scenario in China

- The Chinese economy's recovery from the effects of the Covid-19 pandemic has been weak. Retail inflation had fallen monthly. The Chinese economy is facing deflation, driven by low demand and shrinking manufacturing output.

- Over 20 percent of the mainland's workers under the age of 24 in China were unemployed. This is a higher rate than in most comparable economies.

Some simultaneous and interlinked economic traps faced by the Chinese economy

1. One of these is the deflationary trap, where the economy struggles with declining prices and a lack of consumer spending.
2. Another challenge is the investment trap. Policymakers have limited options to stimulate growth and employment. They are mainly relying on increasing public investment.

However, the returns on additional investment are diminishing, and the country already has a high level of public debt.

### To address these challenges,

- it would require a significant structural shift in the economy, such as promoting private consumption over fixed investment. However, the Communist Party is hesitant to undertake such changes due to the political implications they may entail.
- China also faces the hurdle known as the "middle-income trap,". It occurs when a country reaches a certain level of income and development but struggles to progress further.
- The mainland's youth unemployment problem is a manifestation of this trap. Tech and start-up sector, which could have provided opportunities for young people, is not growing at the required pace.

### Lessons for India

- The current scenario is a result of deliberate decisions made by Beijing. It holds significant policy implications for New Delhi.

- The decline of China's tech sector due to a crackdown enforced by Party officials serves as a reminder of the risks associated with politically motivated and arbitrary regulations.

- India must exert greater efforts to establish its regulatory framework as independent and impartial.

- It is crucial for India's economy not to become overly reliant on public investment decisions. Maintaining fiscal responsibility and actively working towards reducing debt should also remain key priorities for India.

### Mains Point: Chinese growth story and lessons for India

### 20. Fifth of suspected money mule cases involve under-21s'

#### Context:

Money Muling activities by young people under the age of 21

According to a report, young people under the age of 21 account for around one in five cases where money muling activity is suspected.

#### Money Muling

- Money muling is a type of money laundering.
- A money mule is a person who receives money from a third party in their bank account and transfers it to another one or takes it out in cash and gives it to someone else, obtaining a commission for it.
- Even if money mules are not directly involved in the crimes that generate the money (cybercrime, payment and online fraud, drugs, human trafficking, etc.), they are accomplices as they launder the proceeds of such crimes.
- Simply put, money mules help criminal syndicates to remain anonymous



while moving funds around the world

### **Prelims Point: Money muling**

## **21. Out of alignment – On India-UK Bilateral Investment Treaty**

### **Context:**

Negotiations are undergoing on the India-UK bilateral investment treaty.

### **The main point of contention in negotiation**

- London has conveyed its unease regarding New Delhi's insistence on including the "exhaustion of local remedies clause" in dispute resolution mechanisms.
- This clause has played a central role in India's decision to unilaterally terminate 68 out of 87 Bilateral Investment Treaties between 2013 and 2019. It has also been a fundamental aspect of a model BIT by the Indian government.

### **Issues with "Exhaustion of local remedies clause"**

- 1) It is impractical to expect foreign investors to rely solely on local remedies. The Indian judicial system is known for its slow pace.

Policy interventions by the government further complicate matters. For example, the Vodafone case lasted 13 years, partly due to the government retroactively amending tax laws. This compelled Vodafone to appeal to the Permanent Court of Arbitration.

- 2) Courts and regulators have not consistently upheld contractual obligations. In the dispute between Amazon and Future Group, the Singapore International Arbitration Centre (SIAC) initially ruled in favour of Amazon,

A decision later confirmed by a single-judge Bench of the Delhi High Court. However, on appeal, a Division Bench

of the same court favoured Future Group. But the Supreme Court upheld the SIAC's decision.

The government claims that international arbitration favours investors over governments. But it is incorrect.

Data from the UNCTAD demonstrates that out of 1,104 known cases of international dispute settlement, 274 rulings were in favour of states, while 212 rulings favoured investors.

### **India government's approach towards investment treaties**

- India should accept international arbitration for confidence-boosting of investors.
- It should honour decisions of arbitration courts. It will avoid the embarrassment caused by seizing of Indian assets abroad by corporations to enforce arbitral awards, which occurred in the case of Cairn Energy.
- India should not impose this clause in investment treaties.

### **Mains Point: India-UK bilateral investment treaty**

## **22. Waiting for Another Gamble – on taxing gambling industry**

### **Context:**

Taxation issues related to gaming industry

The government has proposed a tax rate of 28% on gaming industry.

The policy approach of the government to activities that are not regulated but are emerging very fast

- Except for Goa and Sikkim, where casinos are established as tourist attractions, there appears to be an unspoken policy consensus across states and political parties.

- If an activity cannot be effectively regulated, excessively high taxation rates are applied. This approach has been observed for cryptocurrency trading and is now being applied to online gaming.

### The impact of the government 's decision to tax the gaming industry

- Presently, cryptocurrency traders are resorting to offshore online exchanges. Gamers are likely to find similar means. This will result in a loss of foreign exchange and hinder the enforcement of anti-money laundering regulations.
- Multiple high court rulings have addressed the debate between skill and chance in gaming, and taxation methods applicable to online games. Despite these rulings, the gaming ecosystem is still facing uncertainty.
- The proposed tax changes will not impact horse racing. Casinos will be adversely affected. State governments may attempt to alleviate the blow by reducing the state component of the tax.
- Online games that involve prize money, such as rummy, will be heavily impacted, even though the courts had classified them as games of skill.
- Games like "teen patti" and casual games funded through advertising revenue are expected to remain largely unaffected.
- Many gaming companies will face financial challenges and could become unviable.

### Could have been a better approach

- To mitigate the detrimental effects of gambling, it would have been suitable to implement measures such as setting betting limits based on gamers' income proofs and conducting ID verifications.
- Additionally, systems could be established to exclude gamers with substantial losses.

- The regulation of gambling falls under the jurisdiction of state governments. According to the regulations, games that are primarily based on chance and involve cash rewards are generally prohibited unless expressly permitted by a state government.

- Skill-based games receive some level of protection. It would be unfair to impose heavy taxation on these games. Taxation should not be imposed on the full-face value of these games.

### Mains Point: Taxation issues related to gaming industry

### 23. Back to the new-old: West wind, East wind, or the warnings of a storm?

#### Context:

Concerns associated with protectionist measures adopted by countries against China.

India implemented economic reforms in 1991. It was influenced by the Reagan-Thatcher era, which focused on reduced governmental role in the economy.

#### The results of implementing the 1991 reforms were

- The reforms of 1991 were driven by the principles of liberalization, privatization, and globalization (LPG).
- The aim was to increase market orientation and stimulate economic growth, lower inflation, improve the trade balance, and ensure external economic viability. The reform was successful in achieving these objectives.
- However, the reform has not been able to boost manufacturing.

#### The consequences of the failure of reforms in boosting the manufacturing sector

- It has resulted in a lack of quality jobs, increased inequality and made India vulnerable to China by depending on

it for strategic material imports.

- To reduce its vulnerability, India has adopted a more restrictive approach to trade by implementing tariff hikes, non-tariff barriers, and restrictions on Chinese products.
- This has given re-birth of government-directed industrial investment through policy tools like Investment subsidies, production incentives, tariff protection, etc.

### Situation of manufacturing in the US and in the Western countries

- The US and countries in the West have also faced similar outcomes due to their incapability in reviving the manufacturing sector.
- Hence, to decrease their vulnerability to China, companies in the West have started investing in the US and establishing their plants.
- The US has also imposed import barriers against Chinese goods and restricted the transfer of strategic technologies to China.
- In response, China has imposed export bans on gallium and germanium, essential materials in the electronic, electric vehicle, and telecom sectors.
- Further, governments in the West are allocating significant sums of money to avoid reliance on Chinese imports.
- For instance, subsidies per electric vehicle in the US and Europe amount to around \$7,500. Companies like General Electric, which had de-emphasised manufacturing, are getting back into the sector.

### Implications of the measures adopted by countries against China

- These policies raise concern over the possibility of trade wars. Tariff hikes could also result in increased product prices and contribute to inflation.

- Although the talks have now shifted from decoupling from China towards de-risking and diversification, the risks remain over retaliatory actions and beggar-thy-neighbor subsidies from China.
- This may lead to an increase in the government debt of the Western countries.

### The way ahead for India

- While de-risking and diversification are being taken up by other countries, India can focus on creating jobs in the manufacturing sector.
- However, India has chosen to follow other countries, focusing only on import substitution rather than creating jobs.

### Mains Point: protectionist measures adopted by countries against China

### 24. Export Preparedness Index (EPI) Report, 2022

#### Context:

NITI Aayog will be releasing the third edition of Export Preparedness Index (EPI) for States/UTs of India for the year 2022.

#### About Export Preparedness Index (EPI)?

EPI is a comprehensive tool which measures the export preparedness of the States and UTs in India.

#### Aim:

- To undertake a comprehensive analysis of States and UTs across export-related parameters in order to identify their strengths and weaknesses.
- To present a comprehensive picture of states and UT's export preparedness.
- To highlight the achievements of states/UTs and encourage peer-learning among the states/UTs to uphold the spirit of competitive federalism.

**Pillars:**

The index assess the performance of the States and UTs across four pillars:

- 1) Policy Pillar evaluates states and UTs' performance based on its adoption of the export-related policy ecosystem at a state and district level as well as the institutional framework surrounding the ecosystem.
- 2) Business Ecosystem assesses the prevailing business environment in a state/UT, along with the extent of business-supportive infrastructure, and a state/UTs' transport connectivity.
- 3) Export Ecosystem focuses on the export-related infrastructure in a state/UT along with the trade support provided to the exporters, and the prevalence of Research and Development in the state/UT to foster innovation.
- 4) Export Performance is an output-based indicator which gauges the growth of a state's export over the previous year and analyzes its export concentration and footprint on the global markets.

**Prelims Point: Export Preparedness Index (EPI)****25. India's conglomerates are getting too big for comfort****Context:**

The article explains the increasing concentration of wealth in India and increasing closeness between business and state.

**Increasing concentration of wealth in India**

- The Adani Group continues with its acquisitions even after the Hindenburg report. Financial markets are lending it more money, despite its over-dependent on debt.
- Tatas and the Aditya Birla empire are also performing well. The biggest of

India's big businesses seem to be thriving.

- But all the businesses in India are not making progress. The performance of a large number of informal enterprises is not good and they have not recovered from COVID-19-inflicted losses.
- As per a report by a former Reserve Bank of India Deputy Governor, the share of assets in the non-financial sectors owned by the Big-5 business groups has risen from 10% in 1991 to nearly 18% in 2021. While the share of the next five has fallen from 18% to less than 9%.

**Dangers associated with a rapid rise in industrial concentration**

- It uses market power to stifle competition. It leads to profit inflation or profiteering, through the manipulation of costs and prices. The result is extreme asset and income inequality.
- Institutions of democracy are influenced by them through means such as the capture of the media. The role of civil society as a countervailing power is reduced in this process.
- The ultimate result is corporate influence over political processes and the formulation of policy.
- These tendencies are not stalled by competition in the 'market' but are a consequence of the functioning of markets.
- Asset and income inequality increases, and therefore there is differential power among economic agents, the functioning of the 'market' favours the rich.

**Some of the emerging trends that show the narrowing of political distance between the state and big business**

- Powerful voices within and outside the state have adopted neoliberalism. This implied adoption of the view that the role of the state is not to regulate pri-



vate capital, but to facilitate its growth as means to all round economic progress.

- Advocates of neoliberalism argue that the competition generated by a liberalised regime will counter concentration. The reverse has happened.
- In areas such as telecommunications and civil aviation, there was the initial increase in the number of new players. But a few were finally left, with signs of collusion among them. The consumer will be the loser.
- There is the propagation of the view that the state must help strengthen domestic big business against giant global competitors. State policy, diplomacy and public resources will be key instruments in this process.
- Liberalisation opened Indian markets, induced global competition for Indian businesses. But the state is protecting and promoting sections of big business through large-scale subsidies and transfers.
- State is not interested in reducing the influence of money in politics. Connections of politics with big business are necessary for resources needed to “manage” elections and win electoral support.
- Over time, there has been a change in policy to legitimise corporate donations to political parties, including through the electoral bonds scheme.

## 26. India and Indonesia announce launch of the “India - Indonesia Economic and Financial Dialogue” (EFD Dialogue)

### Context:

India and Indonesia have announced the launch of the “India - Indonesia Economic and Financial Dialogue”.

This platform was launched during the G20 Finance Ministers and Central Bank Governors (FMCBG).

About Indonesia Economic and Financial Dialogue (EFD)

### Aim:

To enhance collaboration on bilateral and international economic and financial matters by bringing together economic policymakers and financial regulators from both countries.

### Areas of cooperation include:

Macroeconomic challenges and global economic prospects, bilateral investment relations, and cooperation in G20 and ASEAN matters.

### Significance:

EFD Dialogue will not only deepen the bilateral relationship between India and Indonesia, but also contribute to the broader economic and financial stability of Southeast Asia and the world.

### Bilateral Trade between India and Indonesia

- The evolution of India’s ‘Look East Policy’ in 1991, followed by the ‘Act East Policy’, has facilitated a rapid development in bilateral relations between India and Indonesia particularly in the commercial and cultural fields.
- Indonesia has emerged as India’s largest trading partner in the ASEAN region, with our trade seeing an eightfold increase since 2005, reaching an impressive \$38 billion in FY 2022-23.

**Mains Point: India - Indonesia Economic and Financial Dialogue”.**

## 27. How India and UAE are planning to promote use of local currencies for cross-border transactions

### Context:

India and the United Arab Emirates

(UAE) have signed a pact to establish a framework to promote the use of the rupee and UAE Dirham (AED) for cross-border transactions.

Recently, the Reserve Bank of India (RBI) and the Central Bank of the UAE agreed to establish a framework for enabling the use of their local currencies for cross-border transactions

### About the agreement

- As per the MoU, all current account payments, including those involving the two countries' exporters and importers, and certain "permitted" capital account transactions could be settled using either the rupee or the dirham.
- The two central banks plan to create a Local Currency Settlement System and potentially link their payments messaging systems in the future.
- This would lead to the development of a rupee-dirham foreign exchange market that would help in pricing the two currencies independent of their exchange rates with other currencies, such as the dollar and the euro.
- This would also eliminate exchange rate risks for Indian and Emirati businesses when quoting prices for goods and services. It will enhance the ease of doing business and boost trade between the two countries.
- The establishment of the India-UAE local currency settlement system has the potential to serve as a model for other bilateral currency agreements.

### The purpose behind such an agreement

- To promote bilateral use of their local currencies and reduce reliance on the U.S. dollar as an intermediary for settling transactions and enhancing economic ties between the two nations.
- It is also a step towards internationalizing the Indian rupee. This move aligns

with India's growing economy and its increasing share in global trade.

- World Bank estimated that India was the first country set to receive an annual remittance flow of more than \$100 billion. Linkage of India's digital payments systems to other central banks will provide a further boost to remittance flows.
- The RBI has indicated that increased investment by UAE-based firms is one possibility for utilizing rupee payments.

### Some other measures taken by the RBI to promote rupee based international transactions

- India's real-time retail payment system Unified Payments Interface (UPI) has been integrated with Singapore's PayNow to enable faster remittances between the two countries at a competitive rate.
- PayNow is a fast payment system in Singapore. It enables peer-to-peer funds transfer service, available to retail customers through participating banks and Non-Bank Financial Institutions (NFI) in Singapore.
- It allows users to send and receive instant funds from one bank or e-wallet account to another in Singapore by using just their mobile number, Singapore National Registration Identity Card (NRIC)/Foreign Identification Number (FIN) or VPA.

### Mechanism being setup by India and UAE to promote use of local currencies for cross-border transactions

- The mechanism for the use of local currencies for transactions between India and the UAE aims to put in place a Local Currency Settlement System (LCSS).
- This system would enable exporters and importers to invoice and pay in their respective domestic currencies.

- India is likely to use this mechanism to pay for crude oil as well as other imports from the UAE, which is currently made in US dollars.

Note: Bilateral trade between India and the UAE was around \$85 billion in FY23. India is also the third largest oil importer in the world and the UAE was its fourth biggest supplier of crude.

### Expected benefits of this mechanism

1. Firstly, it would enable the development of an INR-AED foreign exchange market.
2. Secondly, this arrangement would also promote investments and remittances between the two countries.
3. Thirdly, the use of local currencies would optimize transaction costs and settlement time for transactions, including for remittances from Indians residing in the UAE.

### India signed this mechanism with the UAE

- The move to ink the pact with the UAE is part of a concerted policy effort by India to internationalize the rupee to bring down the dollar demand as a means to insulate the domestic economy from global shocks.
- Government officials had earlier indicated that apart from Russia, countries in Africa, the Gulf region, Sri Lanka and Bangladesh had also expressed interest in trading in rupee terms.

### The challenges associated with the agreement between India and the UAE

- The success of the agreement will depend on the level of adoption by businesses in both countries. After the bilateral Comprehensive Economic Partnership Agreement, the UAE's trade surplus with India has increased.
- As a result, Emirati businesses must identify profitable ways to use potential rupee flows if they choose to accept

payments in the Indian currency.

### Way ahead

Despite such possibilities, in a rapidly evolving global environment, businesses will base their decisions on economic logic. Policymakers must also remain aware of the risks arising from such moves even as they eye the opportunities.

Moreover, RBI's gradual approach is pragmatic as it allows retail transactions at a lower transaction cost and encourages rupee settlement for cross-border trades.

However, enhanced internationalization requires GOI to revisit its restrictive foreign trade and capital account policies.

### Mains Point: Use of the rupee for cross-border transactions

## 28. Express View on employment: The stress signals

### Context:

Economic stress despite the expected growth.

In this article the author discusses the rising demand for work under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), despite economic growth. They highlight high unemployment rates, especially among urban youth, and an increase in credit card defaults, indicating economic stress despite the expected growth.

### About current economic and employment situation in India

- India's economy is expected to grow at 8% in the first quarter of the current financial year.
- Demand for MGNREGA work is increasing, indicating a lack of productive

job opportunities in rural areas. In June, 3.04 crore households availed work under the scheme.

The unemployment rate among urban youth is high, at 17.3% in the first quarter of 2023. For males, it was 15.6%, but for females, it was even higher at 22.9%.

### **MGNREGA has evolved over the years**

#### **Rising demand:**

Demand for work under MGNREGA has been consistently rising. In 2015-16, 7.2 crore individuals were part of the scheme. This number increased to 7.88 crore by 2019-20.

#### **Wage increase:**

The wage rate under MGNREGA increased from Rs 218 per person per day in 2022-23 to Rs 233.

#### **Pandemic impact on MGNREGA:**

The pandemic caused a surge in demand for MGNREGA, with participation reaching 11.19 crore in 2020-21 and 10.61 crore in 2021-22. Even after a drop to 8.76 crore in 2022-23, it was higher than pre-pandemic levels.

### **Implications of high unemployment rates**

#### **Effects on the economy:**

High unemployment rates can harm the economy. The demand for work under the MGNREGA scheme has risen over the years, indicating that more people are seeking employment. It implies fewer productive job opportunities in rural areas.

#### **Impact on credit defaults and bad loans:**

Rising unemployment may increase credit defaults and bad loans. For instance, bad loans in the credit card segment rose to Rs 4,073 crore at the end of 2022-23 from Rs 3,122 crore the previous year. High unemployment can worsen this situation as people struggle to repay loans.

### **Need to be done**

Economic growth should be inclusive, providing more productive job opportunities, especially in rural areas.

Measures should be taken to reduce the high unemployment rate among urban youth.

Strategies to curb the rise in credit card defaults and bad loans are necessary.

Areas showing stress, like MGNREGA demand, need close monitoring.

### **Mains Point: Economic stress despite the expected growth.**

## **29. 13.5 crore Indians move out of multi-dimensional poverty in five years: Niti Aayog report**

#### **Context:**

Niti Aayog has published the second edition of National Multidimensional Poverty Index: A progress of Review 2023.

National MPI 2023 is based on the latest National Family Health Survey (2019-21) and represents progress made by India in reducing multidimensional poverty between the two surveys, NFHS-4 (2015-16) and NFHS-5 (2019-21).

#### **Aspects Covered:**

It includes health (nutrition and maternal health), education (school attendance and years of schooling), and living standards (sanitation, drinking water, housing, assets, etc.).

#### **Relevance:**

The MPI is vital for tracking Sustainable Development Goals, which aim to reduce poverty.

#### **Importance:**

It captures broader perspectives of poverty, giving a comprehensive view of an individual's well-being.



### About Multidimensional Poverty (MDP)

- Historically, poverty estimation was done by largely focusing on income as the sole indicator.
- However, there was criticism that monetary and consumption-based poverty measures fail to capture the impact of lack of other non-monetary factors on standard of living.
- Niti Aayog's National Multidimensional Poverty Index is modeled on the Global Multidimensional Poverty Index. It captures overlapping deprivations in health, education and living standards.
- Niti Aayog published the first National MPI baseline report for India in 2021.

### Measuring Multidimensional Poverty (MDP)

- National MPI divides these three broad indicators health, education and living standards into further dimensions.
- For instance, health includes nutrition, child-adolescent mortality and maternal health, while education considers years of schooling and school attendance.
- All these indicators are weighed in to calculate the 'deprivation score'. The deprivation score is the sum of the weighted status of all the indicators for an individual.
- If the deprivation score is more than 0.33, then an individual is considered multidimensionally poor.

### Key findings of the National Multidimensional Poverty Index 2023

- About 135.5 million (13.5 crore) persons have exited poverty between 2015-16 and 2019-21.
- In 2015-16, one in four Indians (24.85%) met the criteria for multidimensional poverty. By 2019-21, this percentage

decreased to 14.96% or one in seven.

- Rural areas saw a faster reduction in their MPI value, compared to urban areas. The incidence of poverty fell from 32.59% to 19.28% in rural areas compared to a decline from 8.65% to 5.27% in urban areas between 2015-16 and 2019-21.
- Uttar Pradesh has registered the largest decline in the number of poor with 3.43 crore people escaping multidimensional poverty.
- The number of states with less than 10 per cent people living in multidimensional poverty doubled in the five years between 2016 and 2021.
- In 2015-16 (NFHS-4), only seven states had less than 10% of their population living in multidimensional poverty – Mizoram, Himachal Pradesh, Punjab, Sikkim, Tamil Nadu, Goa, and Kerala.
- In 2019-21 (NFHS-5), the list had doubled to include 14 states, with the seven new additions being Telangana, Andhra Pradesh, Haryana, Karnataka, Maharashtra, Manipur, and Uttarakhand.
- Except for Bihar, no other state in India has more than one-third of its population living in multidimensional poverty.
- Even Bihar has also made remarkable improvement. In 2015-16, over 51.89 per cent of Bihar's population lived in multidimensional poverty. By 2019-21, the figure had dropped to 33.76 per cent.

### About major outcomes of the Niti Aayog report

**Drop in Poverty:** 'Multidimensional poverty' in India reduced to 15% in 2019-21 from 25% in 2015-16.

**Health Metrics:** Modest gains in nutrition, maternal health, and child mortality; notable inadequacies in nutrition.

**Sanitation Progress:** In 2015-16, 52% of people lacked sanitation; by 2019-21, this decreased to just over 30%.

**Cooking Fuel Improvement:** Access to cooking fuel saw an enhancement, with deprivation dropping by 15 percentage points.

**Welfare Indicators:** The report focused on dimensions like health, education, and standard of living rather than just monetary measures.

**Major outcomes** of the “National Multidimensional Poverty Index: A Progress Review 2023”

### Positive Outcomes

**Significant Reduction:** Multidimensional poverty in India dropped from 24.85% to 14.96% between 2015-16 and 2019-21.

**Massive Exit:** 135 million people moved out of multidimensional poverty during this period.

**Urban Progress:** In urban areas, only 5.27% of the population is multidimensionally poor.

**State Improvements:** Bihar witnessed a significant decline, though challenges remain.

### Negative Outcomes

**Rural Concerns:** Rural areas have a higher rate at 19.28%, emphasizing the urban-rural divide.

**Regional Disparities:** States like Bihar still have high levels at 34%, while Kerala stands at just 0.55%.

**Quality of Education:** Though schooling years are considered, the quality of education in many Indian schools remains unsatisfactory.

**Job Challenges:** India faces a lack of quality job opportunities for its rising workforce.

### Indian government approach

**Priority on Welfare:** The Modi administration emphasized welfare, indicating no reduction in favor of market solutions.

**Major Initiatives:** The Swachh Bharat Mission was launched aiming to end open defecation in India, with a focus on toilet construction.

**Hygiene Promotion:** The mission took inspiration from Mahatma Gandhi’s advice on hygiene.

**Sanitation Improvements:** In 2015-16, 52% lacked sanitation, reduced to just over 30% in 2019-21.

**Cooking Fuel Access:** Cooking fuel deprivation decreased by nearly 15 percentage points, with efforts like Pradhan Mantri Ujjwala Yojana enrolling 96 million kitchens by 2022.

**Stretch Targets:** By setting ambitious goals, public projects, like the Swachh Bharat Mission, gained urgency.

**Regular Updates:** Ministries, like Jal Shakti, offered updates on village progress in sanitation and waste disposal.

### Concerns in the government welfare programs

**Housing Progress:** Only a minor improvement in housing with deprivation decreasing by just over 4% in five years.

**PM Awas Yojana Issues:** Despite being prioritized, there are tales of poor cost forecasts and overruns.

**Local Corruption:** The Awas Yojana has faced risks of local corruption.

**Loan Defaults:** Even if default rates aren’t alarming in the Awas Yojana, it doesn’t guarantee the program’s success.

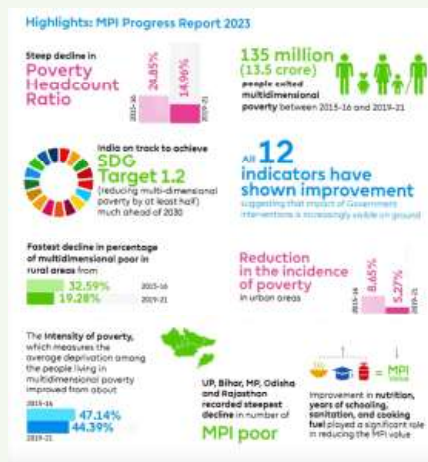
### India reduces multidimensional poverty

- India achieved such rapid poverty re-

duction due to improvement in seven standard-of-living sub-indicators – cooking fuel, sanitation, drinking water, housing, electricity, assets, and bank accounts.

- For instance, around 58 percent of Indians were deprived of clean cooking fuel in 2015-16, but by 2019-2021, it was only 44 per cent.
- Similarly, the percentage of individuals lacking adequate sanitation facilities dropped from 51.88 per cent to 30.13 per cent.

However, when it comes to indicators like health and education, the reduction has not been so slow



**Mains Point: National Multidimensional Poverty Index 2023**

### 30. RBI to detail SOP for banks to help expedite rupee trade

#### Context:

The rupee-based trading mechanism for foreign trade.

The Reserve Bank of India (RBI) is expected to issue a standard operating procedure for banks to expeditiously issue FIRC (Foreign Inward Remittance Certificate) and Electronic bank realization certificates (e-BRCs).

This is being done to overcome the problems faced by exporters with the rupee-based trading mechanism for foreign trade.

#### FIRC (Foreign Inward Remittance Certificate)

- FIRC is a document that acts as a testimonial for all the inward remittances entering India.
- Most of the statutory authorities accept this document as proof that an individual or a business, such as a limited company, partnership firm, sole proprietorship firm and others, has received a payment in foreign currency from outside the country.

#### An Electronic Bank Realization Certificate (e-BRC)

- An Electronic Bank Realization Certificate (e-BRC) is a vital digital certificate for export businesses.
- A bank issues the e-BRC to confirm that the buyer made payment to the exporter against the export of services or goods.
- Businesses availing export benefits under the Foreign Trade Policy (FTP) must produce a valid BRC. The BRC is the proof of realization of payment against exports.

### Fostering rupee trade

The RBI will soon urge banks to follow an SOP to expedite the issuance of FIRC and e-BRC certificates, says a govt. official



- Exporters had approached the Commerce Ministry citing delays in the generation of e-BRCs
- Due to the delay, exporters had a problem validating their exports and claiming any benefits
- The official adds that there was no bar on traders using any currency for international payments

### Prelims Point: Foreign Inward Remittance Certificate, Electronic Bank Realization Certificate(e-BRC),

#### 31. A roadmap to eliminate poverty in India

##### Context:

India's path to achieving a 7% growth rate

This article outlines India's path to achieving a 7% growth rate. It emphasises domestic investments, technological adaptation, managing global challenges, environmental balance, and the potential of a basic income system.

##### The current and future growth status of India

##### Current growth status of India:

**Per capita income:** India's per capita income was \$2,379 in 2022-23.

**Investment rate:** The Gross Fixed Capital Formation rate in 2022-23 stood at 29.2% of GDP.

**Global position:** India is the world's fifth-largest economy, yet 149th out of 194 in per capita terms.

**Trade Concerns:** Developed nations are retreating from the free trade model, potentially impacting India's global trade prospects.

### Future growth prospects for India:

**Targeted growth:** India aims for a 6-7% continuous annual growth.

**Technological adaptation:** Emphasis on integrating Artificial Intelligence in industries, though job creation remains a concern.

**Environmental responsibility:** Aiming for a more sustainable growth rate considering environmental constraints.

**Basic income:** Plans to introduce a basic income for financial security, potentially reducing other subsidies.

### Some of the threats to India's future growth

#### Global tensions:

The Ukraine-Russia conflict has impacted the overall global peace climate. Prolonged tensions can hinder international collaboration and growth prospects.

#### Trade barriers:

Developed countries, which once championed the free trade model, are now imposing restrictions on imports. Such barriers can harm India's emerging ability to compete in global markets.

#### Technological disruptions:

While India is poised to integrate Artificial Intelligence, it may boost productivity but not necessarily jobs. Given India's populous nature, AI's potential job-reducing ramifications can be a significant threat.

#### Environmental commitments:

Addressing environmental concerns, like pollution reduction, can influence the overall output. Achieving a growth rate beyond 6-7% might be challenging when factoring in sustainable goals.

#### Developed countries' stance:

Historically industrialized countries have a significant carbon footprint. If



these nations push developing countries like India to bear the brunt of pollution reduction, it could strain India's growth.

### Job market elasticity:

With modern technology integration, India may face a lower employment elasticity concerning output, implying that even if the economy grows, it might not translate to proportional job growth.

### Resource constraints:

Achieving the desired Gross Fixed Capital Formation rate of 30-32% may be challenged if domestic and foreign investments don't match expectations, given the 29.2% rate of 2022-23.

### Need to be done

#### Enhance investment rate:

**Target** a Gross Fixed Capital Formation rate between 30-32% of GDP. With the current rate at 29.2% for 2022-23, focused efforts can bridge the gap.

#### Prioritize key sectors:

Allocate resources to agriculture, manufacturing, and exports. This can build on existing strengths and open avenues for global trade.

#### Harness technological evolution:

Embrace Artificial Intelligence and its applications. While ensuring its integration, prepare the workforce for potential changes in job dynamics.

#### Review trade strategies:

Given the changing stance of developed countries on trade, India should re-evaluate its global trade partnerships and navigate barriers.

#### Sustainable growth:

While aiming for a 6-7% growth, integrate environmental sustainability measures. Balancing growth with environmental responsibility is crucial.

### Education & Skill Development:

Reform the education system to equip students with skills relevant to evolving industries, especially in tech domains.

### Promote domestic investments:

While welcoming foreign investments, especially in emerging tech sectors, prioritize and incentivize internal investments for more sustained growth.

### Implement basic income:

Explore introducing a basic income structure. Such a system can provide financial security, possibly leading to more consistent consumer spending and reduced reliance on other subsidies.

### Mains Point: India's path to achieving a 7% growth rate

### 32. DGFT implements the Advance Authorisation Scheme, allows duty-free import of inputs for export purposes

#### Context:

The Directorate General of Foreign Trade (DGFT) is implementing the Advance Authorisation Scheme.

#### Advance Authorisation Scheme

Directorate General of Foreign Trade (DGFT) implements the Advance Authorisation Scheme under the Foreign Trade Policy.

#### Purpose:

- The scheme allows duty-free import of inputs for export purposes.
- In addition to any inputs, packaging material, fuel, oil and catalyst which is consumed / utilized in the process of production of export products is also allowed.
- The quantity of inputs allowed for a given product is based on specific

norms defined for that export product, which considers the wastage generated in the manufacturing process.

**Mains Point: Advance Authorisation Scheme**

**Prelims Point: Advance Authorisation Scheme**

### 33. Tamil Nadu tops NITI Aayog export preparedness index 2022, Gujarat skids to 4th slot

**Context:**

NITI Aayog has released the third edition of Export Preparedness Index (EPI) 2022.

**Export Preparedness Index (EPI)**

EPI is a comprehensive tool which measures the export preparedness of the States and UTs in India.

**Aim:**

- To undertake a comprehensive analysis of States and UTs across export-related parameters in order to identify their strengths and weaknesses.
- To present a comprehensive picture of states and UT's export preparedness.
- To highlight the achievements of states/UTs and encourage peer-learning among the states/UTs to uphold the spirit of competitive federalism.

**Pillars:**

The index assess the performance of the States and UTs across four pillars:

1. Policy Pillar evaluates states and UTs' performance based on its adoption of the export-related policy ecosystem at a state and district level as well as the institutional framework surrounding the ecosystem.
2. Business Ecosystem assesses the prevailing business environment in a state/UT, along with the extent of business-

supportive infrastructure, and a state/UTs' transport connectivity.

3. Export Ecosystem focuses on the export-related infrastructure in a state/UT along with the trade support provided to the exporters, and the prevalence of Research and Development in the state/UT to foster innovation.
4. Export Performance is an output-based indicator which gauges the growth of a state's export over the previous year and analyzes its export concentration and footprint on the global markets.

**Key findings of Export Preparedness Index (EPI) 2022**

**Topped by:**

**Tamil Nadu** has topped the index followed by Maharashtra and Karnataka.

**Gujarat**, which held the top position in EPI 2021 (released in 2022) has been pushed to the fourth slot in EPI 2022.

**Hilly States:**

Uttarakhand secured the top position among hilly/Himalayan states in the EPI 2022.

**Landlocked States:**

Haryana topped the chart among the landlocked regions, indicating its preparedness for exports. It was followed by Telangana, Uttar Pradesh, Punjab, Madhya Pradesh, and Rajasthan.

**Union Territories/Small States:**

Goa has ranked first followed by Jammu and Kashmir, Delhi, Andaman and Nicobar Islands, and Ladakh.

**Districts:**

Out of the 680 districts engaged in exports, the top 100 districts contribute about 87% of the total exports from India.

Among export districts, Jamnagar in Gujarat tops the index. It was followed

by Surat, Mumbai Suburban, Mumbai, Pune, Bharuch and Kanchipuram.

### India's exports:

Despite global slowdown, India's exports in 2021-22 crossed an unprecedented USD 675 Billion, with trade in goods accounting for USD 420 billion.

The value of merchandise exports crossed USD 400 billion in FY2022, an ambitious goal set by the government, reaching up to USD 422 billion by March 2022.

### Recommendations:

- 1) Location-specific strategies to boost exports
- 2) Diversification of export markets (such as based on GI products)
- 3) Leveraging foreign markets using FTAs
- 4) Identifying high-growth sectors such as pharmaceuticals, automotive, textiles and renewable energy and
- 5) Improvement in data availability.

**Prelims Point: Export Preparedness Index (EPI) 2022.**

**Mains Point: Export Preparedness Index (EPI) 2022.**

## 34. Missing the real achievements

### Context:

The article explains India's macroeconomic achievements and challenges associated with it.

### The macroeconomic achievements made by India

- Wholesale and consumer price inflation rates in India have fallen significantly.
- The WPI rate has decreased from an average of 9% in the 1970s to around 4% in the last decade. The CPI has also decreased, going from 7.5 percent to less than 6 percent in the last decade.

From 1992 to 2002, the overall balance of payments surplus was \$52 billion. It has risen to \$354 billion in the most recent decade (2012-22). This has resulted in the elimination of dollar scarcity.

- Moreover, the reliance on aid and foreign borrowings has also decreased substantially.
- Although the merchandise trade deficit has grown in comparison to earlier decades, the expanding services export surplus has mostly neutralised it.
- Further, growing foreign investment in the last three decades has also contributed to the positive economic shift. As a result of this, India's currency has become more stable.
- Although the rupee has continued to depreciate against the dollar, the rate of decline has slowed over time.
- However, despite these achievements, India still faces challenges in becoming the fastest-growing large economy.

### Challenges facing India to becoming the fastest-growing economy

1. First, in 2022, Saudi Arabia and Vietnam surpassed India's growth rate, and the Philippines outperformed in the first quarter of 2023. India is likewise not a beneficiary of the "China Plus One" scenario. It's Vietnam.
2. Second, India is at a disadvantage compared to nations like Thailand, Malaysia, and Indonesia because of its lack of economic integration with East Asian economies and its exclusion from the Regional Comprehensive Economic Partnership (RCEP).
3. Third, Vietnam is currently on par with China in terms of exports to the West when it comes to supplying apparel to the US.

Hence, India still belongs to the group of developing players despite having a

sizable market.

### Way ahead

- The structural improvements experienced in India over the decades have resulted in a more stable economy and currency, contributing to political stability as well.
- However, despite this, India has not achieved a rapid-growth trajectory comparable to that of several East Asian economies since the mid-twentieth century. Therefore, there is a need for introspection to address this disparity.

### Mains Point: India's macroeconomic achievements and

### 35. Industry Leaders Forge Alliance for increasing Demand of Electric Freight Vehicles

#### Context:

NITI Aayog has organized the e-FAST India event on the sidelines of the 14th Clean Energy Ministerial.

#### About Clean Energy Ministerial (CEM):

The Clean Energy Ministerial (CEM) was launched at the United Nations Framework Convention on Climate Change Conference Of Parties in Copenhagen in 2009.

#### Objective:

It is a high-level global forum to promote policies and programs for the development of clean energy technology. It also aims to share experience & best practices encouraging the transition to a global clean energy economy.

#### Focus Areas:

The CEM is focused on three global climate and energy policy goals:

- Improve energy efficiency worldwide
- Enhance clean energy supply

- Expand clean energy access.

**Member Countries:** 29 Countries. India is a member.

About e-FAST India

#### Launched in:

September, 2022

#### Full Form:

e-FAST stands for Electric Freight Accelerator for Sustainable Transport – India.

#### Purpose:

It is India's first electric freight platform.

#### Aim:

To galvanize the transition towards cleaner and greener freight transportation (Freight transport is the movement of goods from one place to another).

#### Led by:

NITI Aayog and supported by the collaborative efforts of 12 knowledge partners.

#### Features:

- The platform will help strengthen partnerships and identify and support innovative freight solutions.
- The platform also aims to promote freight electrification, supported by ground-based demonstration pilots and research that is supported by evidence.
- Additionally, it will assist with scalable trials and provide information for policymakers that aim to hasten India's freight electrification.

#### Prelims Point: e-FAST India event

#### Mains Point: e-FAST India event

### 36. Tax can be an incentive-Voluntary tax transparency framework can attract capital, generate employment

#### Context:



A voluntary tax transparency framework to support its economic growth

Article discusses the need for India to adopt a voluntary tax transparency framework to support its economic growth. This transparency can attract global investors, create jobs, and align with environmental, social, and governance (ESG) goals. The younger generation values ESG, making transparency crucial for businesses.

### **Tax transparency can offer multiple benefits to India's economy:**

**Investor Attraction:**

Transparent tax strategies can draw in global investors who value responsible tax behavior, amplifying capital inflow.

### **Economic Growth:**

By attracting more investment, especially in sectors like infrastructure and green energy, there can be a significant economic expansion.

### **Job Opportunities:**

Increased capital from transparency can lead to job creation, benefiting the wider population.

### **Improved ESG Scores:**

Companies disclosing their tax approaches can enhance their Environmental, Social, and Governance (ESG) scores. High ESG scores can attract even more global investors.

### **Healthy Corporate Competition:**

A voluntary transparency framework can spur companies to willingly disclose their tax practices, promoting responsible behavior.

### **Alignment with Global Practices:**

Following global transparency norms, like the tax transparency report (TTR), strengthens India's position in the international business community.

## **global practices around tax transparency**

### **Tax Transparency Report (TTR):**

Many companies globally use TTR to share their tax strategies annually.

### **OECD's BEPS Project:**

The Organization for Economic Co-operation and Development (OECD) started the Base Erosion and Profit Shifting (BEPS) project. This aims to fix gaps in international tax rules.

### **ESG Values:**

Globally, investors take a company's Environmental, Social, and Governance (ESG) scores seriously, which includes tax transparency.

### **What should be done?**

#### **Adopt Tax Transparency:**

Introduce a voluntary framework for companies to disclose their tax strategies, promoting responsible behavior.

#### **Link to ESG:**

Connect tax transparency to Environmental, Social, and Governance (ESG) scores. Higher scores can attract more investors.

#### **Introduce Reporting Systems:**

Emulate the global Tax Transparency Report (TTR) model for consistent reporting.

#### **Support Ease of Business:**

Ensure the transparency framework does not hinder business operations.

#### **Promote Green Practices:**

Encourage businesses to report environmental taxes, pushing for eco-friendly measures.

### **Mains Point: A voluntary tax transparency framework**

### 37. Many Indian firms need more leverage

#### Context:

Concerns associated with low debt scenario in India.

There has been a decrease in borrowing by India firms. This presents concerns for the Indian economy.

#### Less borrowing by firms not healthy for the Indian economy

- Debt drives management to work hard, which eventually benefits shareholders and society.
- Borrowing improves return on equity, which is good for shareholders.
- Debt-ridden businesses fail, as part of Schumpeterian creative destruction, fostering a dynamic economy.

#### Borrowing by the Indian non-financial corporate sector

- Since the early stages of economic reform, the Indian non-financial corporate sector has reduced its borrowing. The debt-equity ratio, which was at its highest of 1.85 in 1991-92, has steadily declined, reaching 0.89 in 2021-22.

#### Indian corporations follow this trend of low borrowing

This has been low demand of loans due to –

- 1) the prevailing macroeconomic environment with low investment,
- 2) fears of bankruptcy, and
- 3) low supply of loans due to fear amongst bank employees because of a Supreme Court decision in 2016 over the application of the Prevention of Corruption Act.

Moreover, some see India's low or nearly zero debt level as a sound basis for long-term growth. However, there are various concerns associated with very low corporate debt.

### Concerns associated with low levels of debt

#### Debt as a disciplining device:

- There are usually conflicts between the interests of shareholders and the interests of managers. While managers want more money and less effort, shareholders want the firm to do well.
- Therefore, in such a scenario, debt acts as a disciplining device for managers to work hard, regardless of whether they have shares in the company or not.
- However, when there will be low debt or zero debt, managers will be less motivated to put in the required effort.

#### Creative destruction:

- Debt also plays an important role in the failure of the firms, which is essential for a healthy economy.
- However, when debt is removed, many low-quality firms can survive indefinitely, leading to governance problems. This lack of a steady pace of firm failure is harmful for economic dynamism.

#### Return on equity:

- A successful business achieves a high return on equity by utilizing debt. However, many businesses in India have low debts, leading to poor returns for shareholders.
  - Therefore, a low rate of firm failures affects the economic dynamism, which ultimately impacts society at large.
- Hence, while excessive debt is very harmful, so is zero debt. Therefore, a balance needs to be maintained.

#### Way ahead

- Implementing a strategy of moderate debt may encounter constraints due to the ineffective bankruptcy process and its associated costs.
- Therefore, in order to reach moderate debt levels, enterprises and group-holding companies' finance depart-

ments will need to have specialized skills in strategizing and implementing borrowing programs.

### **Mains Point: a decrease in borrowing by India firms**

### **38. India should combat loan sharks online with effective regulation**

#### **Context:**

The article explains the rise of lending by loan sharks.

#### **Some facts about shark lending**

- It is described by excessively high interest rates and intimidating strategies. It focuses on vulnerable individuals.
- It takes advantage of low-income individuals and those with restricted access to conventional banking services.
- They operate through a network of physical establishments, online platforms, and mobile apps.

#### **Approach of the Indian government towards shark lending**

- In August 2017, the RBI mandated that only NBFCs should operate peer-to-peer lending platforms. Despite this directive, only 22 companies had registered as NBFC-P2P lenders with the RBI. Around 1,100 online lending apps are unregistered and unregulated.
- To address this issue, RBI established a working group in January 2021 to study digital lending activities by unregulated players. The group's report, released in November 2021, recommended regulating digital lending.
- The report proposes a three-pronged approach. These are legal and regulatory measures, technological advancements, and consumer protection initiatives.
- It advocates for the creation of a nodal agency to verify digital lending apps,

the recognition of Self-Regulatory Organizations (SROs) to foster a healthier lending ecosystem.

The collection of borrower data with explicit consent and verifiable audit trails, the maintenance of a 'negative list' of problematic lenders by SROs, and the formulation of a recovery code of conduct in consultation with RBI are other suggestions.

#### **Measures adopted by countries to combat loan sharking and protect borrowers**

##### **Kenya-**

It has established a self-regulatory body composed of responsible digital lenders. It is called the Digital Lenders Association of Kenya (DLAK). It ensures fair lending practices, transparent interest rates and ethical debt recovery procedures.

##### **Philippines-**

It has taken steps to differentiate legitimate fintech companies from loan sharks. Its Securities and Exchange Commission introduced regulations that require online lenders to obtain a licence and comply with fair lending practices.

#### **Way forward for combating loan sharking**

India needs a comprehensive regulatory framework. It should be guided by a 'LENDERS' approach:

##### **Licensing and registration:**

Implement a system to ensure legitimacy and ethical compliance of all lending entities.

##### **Ethical interest rates:**

Enforce regulations to cap interest rates, preventing predatory practices and offering reasonable repayment terms.

##### **Non-coercive practices:**

Prohibit coercive tactics and encourage respectful communication during debt

collection.

### Disclosure and transparency:

Mandate clear and comprehensive information on rates, fees and terms to empower borrowers.

### Education and awareness:

Use financial literacy programmes to educate people on fair lending.

### Redressal mechanisms:

Establish accessible avenues for borrowers to report complaints and seek resolution.

### Strong legal framework:

Strengthen existing laws, introducing severe penalties and deterrents.

### Mains Point: loan sharks

### Prelims Point: loan sharks

## 39. Banks write off bad loans worth Rs 2.09 lakh crore in 2022-23: RBI

### Context:

According to the Reserve Bank of India, banks have written off bad loans

According to the Reserve Bank of India, banks have written off bad loans worth over Rs 2.09 lakh crore during the year ended March 2023 taking the total loan write-off by the banking sector to Rs 10.57 lakh crore in the last five years.

### Loan write-off

Writing off a loan essentially means it will no longer be counted as an asset. By writing off loans, a bank can reduce the level of non-performing assets (NPAs) on its books. An additional benefit is that the amount so written off reduces the bank's tax liability.

### Why do banks resort to write-offs?

- The bank writes off a loan after the borrower has defaulted on the loan repayment and there is a very low chance of

recovery. The lender then moves the defaulted loan or NPA out of the assets side and reports the amount as a loss.

- After the write-off, banks are supposed to continue their efforts to recover the loan using various options. They have to make provisioning as well.
- Once recovered, the provisions made for those loans flow back into the profit and loss account of banks.

### RBI guidelines on Loan write-offs

- The RBI guidance on write-offs says that in a deregulated credit environment, banks have been advised to take credit related decisions including waiving off bad loans as per their commercial assessment of the viability of the loans in terms of their board approved policies subject to prudential norms issued by the RBI.
- The policy on loan recoveries is required to lay down the manner of recovery of dues, targeted level of reduction (period-wise), norms for permitted sacrifice or waiver, factors to be taken into account before considering waivers, decision levels, reporting to higher authorities and monitoring of write-off and waiver cases.
- However, the recovery process can take years as most of the loans involved in write-offs belong to wilful defaulters and shady promoters who generally don't pay back to the banks.

### Mains Point: banks have written off bad loans

## 40. What has flipped the forex reserve Decline of India?

### Context:

About India's forex reserves

As of March 2023, India's forex reserves stood at \$578.4 billion, showing a de-



crease of over \$28 billion since March 2022.

### Causes for decline in the forex reserves

- The decline in reserves was driven by the appreciation of the US dollar following the US Federal Reserve's rate hikes, as well as India's balance of payment (BoP), which experienced a reduction in net capital inflows.
- However, this trend reversed after the dollar index peaked in October, and there has been an overall increase in the forex reserves this year compared to the last year.

### Forex reserves increased this year due to

- The increase in forex reserves this year was primarily driven by revaluation gains due to a weaker dollar and higher capital inflows.
- Additionally, the settlement of oil imports from Russia are not made in dollars, has also helped the reserves to increase.

### Can India maintain these levels of foreign exchange reserves?

- The US Federal Reserve's rate hikes have resulted in foreign investments flowing into the US treasury and a simultaneous outflow of capital from India.
- However, the US Fed has already raised rates by 75 basis points and it is expected to raise interest rates further by 25 basis points. This could potentially lead to increased capital inflows into emerging markets like India.
- Moreover, India's BoP has significantly improved, and the projected current account deficit is less than 2% of GDP. Equity capital flows have also revived, with India drawing the most of these flows among its fellow emerging market nations.
- Hence, it is expected that India can

maintain these levels of foreign exchange reserves.

### Global status of India's foreign exchange reserves

- India holds the fourth-highest forex reserves globally, with China, Japan, and Switzerland occupying the top three positions, respectively.
- Unlike many countries that achieve a large current account surplus through competitive exports, India, Brazil, and the US have built their forex reserves mainly through capital flows, not relying heavily on current account surpluses.

### Forex reserves measuring

- The value of these reserves can change each week based on exchange rates and gold prices.
- When the US dollar goes down or gold prices rise, the reserves increase in value. However, if the US dollar becomes strong or gold prices drop, the value of the reserves goes down.

### RBI's strategy for diversifying its forex reserves

- The RBI aims to reduce reliance on foreign currencies by internationalizing the Indian rupee.
- It is exploring the use of currencies from Asian Clearing Union member states, including the rupee, for payment and settlement between these countries.
- Additionally, the RBI and the Central Bank of Sri Lanka have agreed to designate the rupee as a foreign currency, facilitating trade and enabling Indian tourists in Sri Lanka to use the rupee for transactions.

**Mains Point: About India's forex reserves**

#### 41. Full-reserve banking: where banks act solely as custodians of customers' money

##### Context:

This article talks about the Full-reserve banking system.

##### Full-reserve banking

- Full-reserve banking also known as 100% reserve banking refers to a system of banking where banks are not allowed to lend out money that they receive from customers in the form of demand deposits.
- The banks can only lend money that they receive as time deposits from their customers.
- Hence, in this case, banks simply act as custodians to depositors' money and may charge a fee from depositors for the service of safekeeping that they offer to the depositors. This is in contrast to today's banking system in which banks pay interest to customers on their demand deposits.
- This is done to ensure that banks can successfully meet redemption demands from depositors, and thus avoid a run on the bank even if all depositors someday decide to come asking for their money at the same time.

**Note:** Demand deposits are deposits that customers can withdraw from the bank at any point in time without any prior notice.

Time deposits are deposits that customers can withdraw from the bank only after a certain period of time that is agreed upon between the bank and its customers.

##### Banking system exists in most of the countries currently are

- The banking system that exists today is known as the fractional-reserve banking system.

- Fractional-reserve banking is the banking system under which banks that take deposits from the public are required to hold a proportion of their deposit liabilities in liquid assets as a reserve, and are at liberty to lend the remainder to borrowers.
- Bank reserves are held as cash in the bank or as balances in the bank's account at the central bank.
- The country's central bank determines the minimum amount that banks must hold in liquid assets, called the "reserve requirement" or "reserve ratio".

##### Experts' views on the Full reserve and Friction reserve banking system

- Supporters of fractional-reserve banking believe that full-reserve banking unnecessarily restricts bank lending. They believe that allowing banks to create loans without the necessary savings to back these loans can help spur investment and economic growth.
- However, proponents of full-reserve banking argue that it is the only natural form of banking and that it can prevent the various crises that affect today's fractional-reserve banking system.
- The full-reserve banking supporters also argue that since banks will not be able to create money out of thin air in a full-reserve banking system, their influence on the economy's money supply will become severely restricted. This will prevent artificial economic booms and busts that are said to be the consequence of changes in money supply.

**Mains Point: Full-reserve banking system**

**Prelims Point: Full-reserve banking system**

#### 42. Shedding more light on the debt dilemma

##### Context:

About current fiscal deficit and public

debt data of India.

In this article author discusses India's high fiscal deficit and public debt, emphasizing the challenges it poses to the economy and future generations. The article points to the need for fiscal consolidation, improved tax compliance, and suggests policy reforms such as reducing government involvement in certain sectors and better management of subsidies.

### About current fiscal deficit and public debt data of India.

#### Fiscal Deficit 2020-21:

It increased to 13.3% of GDP.

#### Public Debt 2020-21:

Elevated to 89.6% of GDP.

#### Post-Pandemic Recovery:

Deficit and debt ratios receded to 8.9% and 85.7%, respectively.

#### State-Level Debt:

Punjab's Debt to GSDP is 48.9%, West Bengal's is 37.6%, Rajasthan's is 35.4%, and Kerala's is close to 33%.

#### Primary Deficit 2022-23:

Stands high at 3.7% of GDP and is budgeted over 3% for 2023-24.

Some challenges are posed by India's elevated fiscal deficit and public debt

#### Interest Payments:

They consume over 5% of GDP and 25% of revenue receipts, surpassing government spending on education and healthcare combined.

#### Crowding Out Essential Spending:

Large interest payments reduce funds available for infrastructure, human development, and environmental priorities.

#### State Debt Issues:

Specific states, like Punjab (48.9% Debt

to GSDP ratio) and West Bengal (37.6%), have high debt ratios.

#### Limited Counter-Cyclical Fiscal Policy:

High debt restricts the government's ability to respond to economic downturns or shocks.

#### Distorted Debt Market:

Commercial banks and insurance companies mainly buy government bonds due to regulations, affecting lending to sectors like manufacturing.

#### Rating Concerns:

High deficits lead to lower sovereign ratings, increasing the cost of borrowing internationally.

#### Future Generations:

The next generation will bear the burden of today's borrowing.

#### Election Cycles:

Upcoming elections may push the debt ratio higher due to electoral budgeting.

### Some of the measures implemented to address these issues

#### Follow Finance Commission Recommendations:

The Union government should reduce its deficit relative to GDP from 43.6% in 2015-16 to 36.3%, and States should aim for about 22%.

#### Enhance Tax Collection:

Goods and Services Tax (GST) has stabilized, showing high growth potential. This can improve revenue.

#### Tax Administration:

Technology has made tax administration efficient. Cross-matching GST with income-tax returns can further improve compliance.

#### Increase Tax-GDP Ratio:

Expected to rise by 1.5 to 2 percentage points in the medium term, boosting

revenue.

### Disinvestment:

Speed up the process of selling government stakes in sectors where the private market can operate, like in Bharat Sanchar Nigam Limited.

### Limit Subsidies:

Favor direct cash transfers to people rather than subsidizing goods and services, preventing resource distortions.

### Enforce Fiscal Discipline:

Adhere to Fiscal Responsibility and Budget Management rules, especially when permitting states to borrow.

### Reassess State Roles:

Governments should avoid redundant or unnecessary expenses and avoid competitive market involvement.

### Mains Point: About current fiscal deficit and public debt data of India.

### 43. SEBI chief says instant settlement of trades in the works: What does it mean, and how will investors benefit?

#### Context:

The Securities and Exchange Board of India (SEBI) Chief has said that he is working on real-time settlement of transactions in India's stock exchanges.

#### Trade Settlement

- 'Settlement' is a two-way process that involves the transfer of funds and securities on the settlement date.
- A trade settlement is said to be complete once purchased securities of a listed company are delivered to the buyer and the seller gets the money.
- Currently, there is a lag between trade and settlement – the settlement date is different from the trade date.
- This is because the current cycle of trade

settlement is 'T+1'. This means trade-related settlements happen within a day, or within 24 hours of the actual transaction. The migration to the T+1 cycle came into effect in January, 2023.

Note: India became the second country to start the T+1 settlement cycle in top listed securities after China.

#### SEBI announced

- SEBI has said it is working on a plan for "instantaneous" settlement of trades in the securities market.
- This means same-day, or 'T+0', settlement of trades will be possible with the real-time payment system – Unified Payments Interface (UPI), online depositories, and technology stack.

#### T+0 change for investors

- Under the current T+1 settlement cycle, if an investor sells securities, the money gets credited into her account the following day.
- Under the T+0 settlement cycle, if investors sell shares, they will get the money in their account instantaneously and the buyers will get the shares in their demat accounts the same day.
- This means that the investor's money will not get stuck with brokers or stock exchanges, they will get the money on the same day after the transactions happen.

### Mains Point: real-time settlement of transactions in India's stock exchanges.

### 44. Self-Reliant India Fund

#### Context:

Initiatives taken by the government for the MSME Sector

The Minister for Micro Small and Medium Enterprises has informed Lok Sabha about the Self-Reliant Fund and the other initiatives taken by the gov-



ernment for the MSME Sector.

### Self-Reliant India (SRI) Fund

Self-Reliant India Fund was set up in 2021.

It is a Category-II Alternative Investment Fund registered with SEBI.

#### Aim:

To provide growth capital to the deserving and eligible units of the MSME sector.

#### Size of the fund:

The total size of the fund is Rs. 50,000 Crore where Rs.10,000 Crore will come from the Government of India and Rs.40,000 Crore through Private Equity / Venture Capital funds.

#### Structure of the fund:

The Fund is an investment strategy of holding a portfolio of other investment funds, rather than investing directly. In the context of AIFs, a Fund of Fund is an AIF which invests in another AIF.

- Accordingly, SRI Fund will be a combination of Mother/Daughter Funds which will leverage private equity/ other funds and thus will multiply the impact of the initial budgetary infusion.
- The Mother Fund will provide funds only to the Daughter Funds for onward investment as growth capital, while the investment in MSMEs will be done by the Daughter Funds under the Fund.

#### Implementation:

SRI fund is implemented by a special purpose vehicle, NSIC Venture Capital Fund Limited, which is a 100 percent subsidiary of National Small Industries Corporation, a mini-Ratna.

#### Some of the initiatives taken by the government for the MSME Sector

Champions 2.0 portal

Ministry of Micro, Small and Medium Enterprises (MSME) has launched CHAMPI-

ONS portal.

#### Facts:

- CHAMPIONS stands for Creation and Harmonious Application of Modern Processes for Increasing the Output and National Strength.
- It is a technology driven portal which aims to assist Indian MSMEs to enter into the big league as national and global champions by solving their grievances, encouraging, supporting, helping and handholding.
- The portal is also fully integrated with the Government's main grievances portal CPGRAMS and MSME Ministry's web-based mechanisms.

#### Additional Facts:

#### Centralized Public Grievance Redress and Monitoring System (CPGRAMS):

It is an online web-enabled system developed by National Informatics Centre in association with Directorate of Public Grievances (DPG) and Department of Administrative Reforms and Public Grievances (DARPG).

#### Aim:

To enable submission of grievances by the aggrieved citizens to Ministries or departments who scrutinize and take action for speedy and favorable redress of these grievances.

#### MSME Champions Scheme:

It has been formulated with three components namely, 'MSME-Sustainable' (ZED), 'MSME-Competitive' (LEAN) and 'MSME-Innovative' (Incubation, Design, IPR)

Budget 2023-24 announced the infusion of Rs. 9,000 crore in the corpus of Credit Guarantee Fund Trust for Micro & Small Enterprises to enable an additional credit of Rs. 2.00 Lakh crore with reduced cost of credit.

Raising and Accelerating MSME Perfor-

mance (RAMP) Scheme

The Union Cabinet has approved the "Raising and Accelerating MSME Performance" (RAMP) Programme.

Nodal Ministry: Ministry of Micro, Small and Medium Enterprises (MSME)

### Type: Central Sector Scheme

**Funding:** It is a World Bank assisted programme

#### Committees:

The RAMP programme was formulated based on the recommendations made by U K Sinha Committee, KV Kamath Committee and Economic Advisory Council to the Prime Minister (PM-EAC).

#### Aim:

To provide support to the MSMEs by improving access to market and credit, strengthening institutions and governance at the Centre and State, improving Centre-State linkages and partnerships, addressing issues of delayed payments and greening MSMEs.

### Key Features of RAMP Programme

#### Result Areas:

The programme will focus on two result areas:

- 1) Strengthening Institutions and Governance of the MSME Program and
- 2) Supporting Market Access, Firm Capabilities and Access to Finance.

#### Disbursement Linked Indicators (DLI):

The disbursement of funds from the World Bank towards RAMP would be made on fulfilling several indicators such as accelerating MSME Sector centre-state collaboration; reducing the incidence of delayed payments, enhancing the effectiveness of MSME Schemes among others.

#### Strategic Investment Plans (SIPs):

The important component of RAMP is the preparation of SIPs. The SIPs would include an outreach plan for identification

and mobilization of MSMEs, identify key constraints and gaps, set milestones and project the required budgets for interventions in priority sectors including renewable energy, rural & non-farm business, wholesale and retail trade etc.

#### Monitoring of the programme:

It would be done by an apex National MSME Council headed by the Minister for MSME, including representation from various Ministries and supported by a secretariat.

#### Expected impact of the RAMP Programme

##### Policy Provider:

It will address the COVID related challenges in the MSME sector by way of impact enhancement of existing MSME schemes, especially on the competitiveness front.

##### Job Enabler:

The programme through enhanced collaboration with States will be a job enabler, market promoter, finance facilitator and will support vulnerable sections.

##### Technology Provider:

It will provide access to high-end technology resulting in the digital and technological transformation of MSMEs through state-of-the-art Artificial Intelligence, Data Analytics, Internet of things (IoT) and Machine Learning.

#### Mains Point: initiatives taken by the government for the MSME Sector

### 45. Incentivising fiscal prudence for states

#### Context:

The article explains the increasing debt of state governments and measures needed to reduce it.

#### Present situation of debt

States, at 28 percent of GDP, account for nearly a third of the total debt of Indian governments. The central government accounts for the rest.

- There is also variation among states holding debts. For example, debts of Gujarat and Maharashtra remain below 25 per cent of their respective GDP.
- Whereas, debts of Punjab, Rajasthan, and Kerala as a proportion of their state GDP have exceeded 40 per cent at the end of 2020-21.

### Predicted situation for states' debt

- The debt-to-GDP ratio of the states is projected to increase on average. The states with the highest levels of debt now are also those where debt is expected to rise the greatest.
- For example, Punjab's debt is expected to rise sharply from its present level of about 48% of state GDP to almost 55% in 2027-28.

### Difference between states with high levels of debt and states with low burdens of public debt

- The primary budget deficits and contingent liabilities of more indebted states are more than twice as high as those of less indebted states. Higher indebted states also show slower GDP growth.
- However, one thing that doesn't vary across high- and low-debt states is borrowing costs. Gujarat and Punjab, despite differences in the level of debts, issue debt at the same interest rate.

### Concerns with the same borrowing cost for all the states

- Due to the absence of interest rate variation, there is absence of market discipline because states with higher debts are not prohibited from borrowing by paying higher interest rates.
- Even though the RBI implements measures to keep interest rates stable, it grants some flexibility to states with higher debt to avoid the perception of debt distress spreading to other states.

This, in turn, leads to a loosening of market discipline.

- Further, the horizontal devolution of taxes among states, awarded by the Finance Commission, mandates to allocate more resources to states with larger revenue deficits. This again gives an advantage to states that have higher debts.

### To strengthen state finances

- First, states could increase revenue mobilization through expanding digitization, widening the tax base, raising property taxes, implementing new taxes, and increasing privatization receipts.
- Second, states should redirect their spending towards capacity- and infrastructure-building investments, which promise to improve state GDP and income.
- Third, states should pursue fiscal-management reforms to reduce the dangers that contingent liabilities pose to their public finances.
- Fourth, the RBI should oblige states that vary with their present and future debt levels to pay market interest rates.
- Fifth, there is a need to strengthen the finance commission. The commission gets dissolved after they submit the report and there is no parallel institution or body to monitor states' finances. Hence, there is a need to establish a permanent fiscal or expenditure council to monitor state finances.
- Sixth, fiscal experts and the media need to scrutinize the budgetary processes of the states.

### Mains Point: debt of state governments

# Environment

## 1. Sick sea lions washing ashore in California due to algae bloom

### Context:

Hundreds of sea lions are found dead or sick on California beaches due to toxic offshore algae blooms.

### Sea Lions

- Sea Lion is a marine mammal in the scientific group pinniped, meaning “wing foot” or “feather foot”. They belong to the family Otariidae.
- They are known for their semi-aquatic lifestyle, spending a significant amount of time both on land and in the water.
- They are carnivores, eating fish, squid, crabs, and clams. The largest species, the northern sea lion also eats seals.

Currently, there are **six subspecies of sea lions**:

1. Australian sea lions,
2. California sea lions,
3. Galápagos sea lions,
4. New Zealand sea lions,
5. South American sea lions, and
6. Steller sea lions.

### Algal Bloom

- An algal bloom or algae bloom is a rapid increase or accumulation in the population of algae in freshwater or marine water systems. It is often recognized by the discoloration in the water from the algae’s pigments
- Algal Bloom is a natural phenomenon, but can also occur because of human causes such as climate change and an excess of nitrates washed out to sea.

- Algal blooms cause the production of a neurotoxin called domoic acid.
- While some marine life is not affected at all by domoic acid, the neurotoxin can accumulate in animals lower on the food chain and affect those higher up who are feeding on the filter fish that count algae as their main food source.
- Sea lions, who eat huge amounts of filter fish or other organisms, seem to be especially susceptible to domoic acid as a neurotoxin.

Note: Humans are unaffected unless they eat infected shellfish

### Prelims Point: Sea lions, algal bloom

## 2. Hydrogen will help decarbonize our commercial vehicle traffic

### Context:

The article discusses the potential of hydrogen-fueled internal combustion engine vehicles for commercial transport in decarbonization of transport sector.

India, despite having per capita greenhouse gas (GHG) emissions less than half the global average, is the world’s third-largest emitter. India also ranks eighth worst on air quality.

Road transport contributes to about 10% of India’s emissions, with over a third coming from medium and heavy commercial vehicles.

### The available options to decarbonize the vehicle fleet in India

#### 1) Battery-electric vehicles -

- These vehicles are not economically viable suitable for commercial transport



in India due to factors, like;

- Unlike European trucks, Indian commercial vehicles do not carry heavy payloads. Therefore, it becomes difficult to justify the high purchase cost of battery powered vehicles, which is twice as much as diesel vehicle.
- Battery weight will reduce the payload capacity of a truck.

## 2) Hydrogen-fueled vehicles –

- These vehicles can be powered by either fuel cells or conventional internal combustion engines.
- Hydrogen fuel-cell electric vehicles are even more expensive, and they are suitable for long-distance usage(400-500km), which is not usual for India's usual commercial vehicles. Also, fuel cells require pure hydrogen, which adds complexity to the supply chain.

**Hydrogen-Fuelled Internal Combustion Engine Vehicles** are far more suitable for India's conditions.

- 1) These vehicles are 20-40% more expensive than diesel carriers, which is much less compared to other low-emissions alternatives.
- 2) They can carry almost the same load as a diesel truck and suit Indian conditions, characterized by variable loads and travel of 250-300km per day.
- 3) Such vehicles also do not have stringent requirements of hydrogen purity and can be refueled in 15-30 minutes, compared to hours for battery-run electric vehicles.

**Measures required to promote adoption in Hydrogen-Fueled Internal Combustion Engine**

- First, this technology needs to be given priority in the Indian automotive sector. This assistance can be in the form of technology partnerships, research and development grants, and regula-

tory support.

- Second, there is a need to reduce the cost of hydrogen to about \$2.5-\$3 per kilogram.
- Third, adapting existing fuel stations to dispense hydrogen.
- Fourth, extending existing production-linked incentive schemes for local Electrolyzer manufacturing beyond the current 2027 expiration.

The transition to hydrogen-fuelled internal combustion engine vehicles could be a great opportunity for India as the hydrogen economy is still nascent globally

**Prelims Point: hydrogen-fuelled internal combustion engine vehicles**

**Mains Point: hydrogen-fuelled internal combustion engine vehicles**

## 3. India adds 664 animal species to its faunal database in 2022, 339 taxa to its flora

**Context:**

The Union Minister for Environment, Forest, and Climate Change has released data on the floral and faunal database in 2022.

**Key highlights from the Flora and faunal database**

**Faunal Discoveries:**

- The faunal discoveries are compiled in a publication by the Zoological Survey of India (ZSI) titled Animal Discoveries – New Species and New Records 2023.
- According to the document, India has added 664 animal species to its faunal database in the year 2022. These comprise 467 new species and 197 new records [species found in India for the first time].
- The maximum number of new faunal discoveries has been of invertebrates

with 583 species, while vertebrates constitute 81 species.

- In 2022, the maximum number of new discoveries were recorded from Kerala, followed by Karnataka and Tamil Nadu.

#### Major faunal discoveries are:

Two species of bats – *Miniopterus phillipsi*, a long-fingered bat and *Glischropus meghalayanus*, a bamboo-dwelling bat, both from Meghalaya.

#### Sela macaque (*Macaca selai*):

It is a new macaque species discovered in western and central Arunachal Pradesh and named after the Sela Pass

#### Macaca leucogenys:

It is a white-cheeked macaque earlier found in Modog, southeastern Tibet, and sighted in India for the first time in 2022 in West Siang, Arunachal Pradesh.

#### Ficedula zanthopygia:

It is a yellow-rumped flycatcher, earlier known from Mongolia, Transbaikal, southern China, Korea, and western Japan, and found last year in Narcondam Island of the Andaman archipelago.

#### Floral Discoveries:

- The floral discoveries are contained in Plant Discoveries 2022 published by the Botanical Survey of India (BSI).
- According to it, India has added 339 taxa to its flora during 2022. These comprise 319 species, and 20 infraspecific taxa as new to the Indian flora.
- The discoveries encompass seed plants, fungi, lichen, algae, bryophytes, microbes, and pteridophytes.
- Western Himalayas and Western Ghats are prominent regions for plant discoveries.
- Kerala recorded the highest number of plant discoveries (57), accounting for

16.8% of all discoveries.

#### Major new plant discoveries are:

##### Nandadevia Pusalkar:

It is common throughout the foothills and warm outer valleys of the Uttarakhand Himalayas.

##### Nilgiriella Pusalkar:

It is endemic to the southern Western Ghats of India and distributed in Karnataka, Kerala, and Tamil Nadu.

##### Calanthe lamellosa:

It is an orchid species. It was earlier recorded in China and Myanmar, and found for the first time in India in the Japfu mountain range in Kohima, Nagaland.

#### Prelims Point: Floral and faunal database in 2022.

#### 4. Explore every possible solar shield we can use:

##### Context:

Recently, the US White House released a report on “solar radiation modification” (SRM).

##### SRM is important due to

- According to the latest update, the Earth’s temperature may rise beyond 1.5°C above pre-industrial levels earlier than anticipated. Additionally, the risks of surpassing this temperature threshold could be more severe than previously estimated in 2015.
- Additionally, progress on climate action has been slow.
- SRM has the potential to reduce the effects of increased temperatures and provide time for better solutions.

##### About SRM

- The basic objective of SRM is to reflect solar heat back. for which two methods

are under consideration.

- One is aerosol injection of the stratosphere. The second is marine cloud brightening. Both can achieve a similar effect by acting as a reflector.

### Some of the risks with SRM

- There are risks of ecological disruption associated with both methods. For example, aerosols could cause ozone depletion and even hurt biodiversity.
- The potential impacts on rainfall and other unknown indirect effects of solar geo-engineering would have global ramifications.

### Report says

- The report advocates in-depth research on SRM to assess all its risks and potential benefits.
- The report suggests the adoption of a 'risk versus risk' framework to assist policymakers in understanding the risks associated with SRM in comparison to the risks posed by the current pace of climate action.

### Need to be done

- The potential of space-based solutions, such as mirror lattices, should also be explored. They could offer more precise control over cooling by directly influencing solar radiation without affecting the air.
- Including space-based solutions in official research programs in the US would also encourage other space-faring nations, like India, to enhance their own research.
- There should be transparency in any intervention efforts, and it is important to thoroughly examine all available options on a global scale.

**Prelims Point: solar radiation modification (SRM).**

## 5. WMO revives ozone-UV bulletin after 7 years, shows steady recovery of ozone layer

### Context:

The World Meteorological Organization (WMO) has released Ozone and UV Bulletin after a gap of seven years.

### The key highlights from the Ozone and UV Bulletin

#### Steady recovery of ozone layer:

- The production and consumption of controlled ozone-depleting substances have been phased out up to 99%. This has happened due to the Montreal Protocol and its amendments.
- Stratospheric ozone is slowly recovering, with a full recovery in most parts of the atmosphere projected to occur in the coming decades.
- However, unfortunately, climate change is slowing down the recovery of the ozone layer. Ozone depletion is affecting the climate of the lower atmosphere.

#### Hunga Tonga-Hunga Ha'apai volcanic eruption changed the stratosphere:

- The Hunga Tonga-Hunga Ha'apai volcanic eruption in January 2022 was the largest in the last 100 years, injecting ice and water vapor high into the stratosphere.
- The eruption increased the water vapor content of the stratosphere by 5% to 10%, resulting in substantial cooling of the stratosphere above the Southern Hemisphere.
- The additional water vapor has resulted in less ozone in the lower stratosphere of the Southern Hemisphere in 2022.

**Prelims Point: Steady recovery of ozone layer,**

**Mains Point: Steady recovery of ozone layer**

## 6. Diversity for Restoration(D4R) Tool to drive India's eco-restoration initiatives

### Context:

Researchers have developed a tool called Diversity for Restoration (D4R) to aid in agroforestry and ecosystem restoration efforts.

### About Diversity for Restoration(D4R) Tool

- The Diversity for Restoration (D4R) tool has been developed by Biodiversity International.
- The tool has been modified to adapt to the Indian context by researchers from Ashoka Trust for Research in Ecology and the Environment (ATREE).
- The tool aims to support ecosystem restoration programs in India by improving decision-making and promoting sustainable development.
- The tool is already being used in countries such as Malaysia, Ethiopia, Columbia, Peru, Burkina Faso, Cameroon, etc.

**Some of the following the services that Diversity for Restoration(D4R) Tool can provide**

### The Diversity for Restoration tool can:

1. Help the user in identifying species that match their restoration objectives.
2. Identify species that can resist local stresses and adapt to evolving environmental conditions.
3. Can pinpoint areas and regions to procure the seeds for the required species.
4. Informs the user whether the tree species offers timber, fruit, manure, or other commercial benefits.
5. It also informs if the tree is resilient to physiological stresses such as extremely high or low temperatures, salinity, or acidity tolerance in the soil among others.
6. Identify windbreakers – the trees can act

as a barrier against high winds.

7. The user can also know if the species offers better nitrogen fixing and whether it serves as a good pollinator for birds and bees.

### Significance of the Diversity for Restoration(D4R) Tool

- The tool will help improve the effectiveness of restoration programs by providing manifold benefits to interested stakeholders while promoting sustainable development.
- It will also help in better decision-making and bring the best outcome for plantation programs.

### Prelims Point: The Diversity for Restoration(D4R) Tool

## 7. Carbon credit trading scheme: Waiting to exhale

### Context:

India is starting a Carbon Credit Trading Scheme to control Environment pollution and degradation

India is starting a Carbon Credit Trading Scheme (CCTS), to help local businesses adjust to the European Carbon Adjustment Mechanism (CBAM). The CBAM, which begins this October, sets stricter standards for the export of carbon-heavy goods such as cement, steel, aluminium, and fertilisers.

### India's Carbon Credit Trading Scheme (CCTS)

India's CCTS is a program designed to allow companies to trade carbon credits. These credits represent a reduction in greenhouse gas emissions. If a company emits less than its allowable limit, it can sell its surplus credits to a company that exceeds its limit. This scheme helps India manage and reduce its overall carbon emissions.



## The regulatory structure of India's CCTS

- The regulatory structure of the CCTS is overseen by a National Steering Committee. This committee is made up of 18 ministries and departments, providing comprehensive oversight over the scheme.
- The Central Electricity Regulatory Commission (CERC) is identified as the only regulator in the scheme.
- Additionally, the Bureau of Energy Efficiency acts as the market's administrator, with the Grid Controller of India handling registrations of market players.

Despite traditionally being overseen by the Securities and Exchange Board of India (Sebi), the carbon credit market's regulation falls under the CERC in this scheme.

## Challenges

### Regulatory challenges:

In October 2021, the Supreme Court stated that the Central Electricity Regulatory Commission (CERC) would regulate the spot market for power, but only for immediate deliveries up to eleven days. Securities and Exchange Board of India (SEBI) would oversee the futures and options market. However, the CCTS is to be regulated by CERC. However, carbon credit is essentially a financial market, so as per the SC order SEBI should be the regulator.

### Complexity in market structure:

The market structure of CCTS is complex, involving multiple agencies and oversight bodies. Companies might struggle with compliance due to the complicated structure, potentially increasing the cost of obtaining carbon credits.

### Unclear validity of international certificates:

The framework does not clearly indi-

cate if international carbon abatement certificates will be accepted alongside domestic ones in the new scheme. This could cause confusion and difficulties for companies looking to comply with emission norms.

### Fungibility of Carbon Certificates:

There are concerns about whether the carbon certificates should be interchangeable across different platforms and tenors. While financial markets often benefit from subdividing certificates to create more value, the carbon market might be more efficient with a standard, fungible product. The current notification is silent on this matter, causing uncertainty among market players.

### Mains Point: India's Carbon Credit Trading Scheme (CCTS)

## 8. It will take nuclear energy for global shipping to hit net zero

### Context:

Measures needed to achieve net zero in the maritime sector.

Shipping industry, which consumes about 5% of the world's oil and emits about 3% of its greenhouse gases, is moving towards a net-zero target.

### Shipping industry moving towards a net-zero target

- The International Maritime Organization (IMO), a United Nations body responsible for regulating the maritime industry, is meeting in London to strengthen measures to reduce maritime carbon footprint.
- A draft is being prepared that would commit the maritime sector to achieving net-zero emissions by 2050.
- Rich countries along with Marshall Islands (operating one of the largest ship registries globally) are also supporting

a carbon tax on shipping.

- Whereas, China, a major global exporter, is working to rally developing nations to resist stricter measures on carbon emissions in the shipping industry.

### Issues involved with the shipping industry in achieving a net zero

- The size and duration of ships' journeys make it difficult to adopt the same technologies used in green power plants and cars. Only smaller ferries with short routes have the potential to operate on batteries or solar power.
- Wind power is also unpredictable and scarce to meet the needs of the shipping industry. Even wind-assisted ships currently under construction are unlikely to have a significant impact on reducing greenhouse gas emissions.
- This means that there is a need for some sort of fuel for the shipping industry. Out of the various options being explored, nuclear power has the capability to make the shipping industry achieve a net zero.

### Nuclear power a suitable form of energy for the shipping industry, because

- Nuclear energy is already being used in powering numerous military submarines and aircraft carriers. This offers an established zero-carbon solution for the maritime sector.
- Further, nuclear power would not be needed for all the merchant ships. Only about 17,000 large ships are responsible for around 80% of the sector's greenhouse emissions.
- According to a study, atomic ships were found to cost more by only 19% compared to the conventional vessels.
- This makes them more competitive than other low-carbon fuel options and potentially cheaper than the current die-

sel-heavy fuel mix used in conventional vessels. However, there are also challenges present with nuclear energy.

### Challenges present with adopting nuclear energy in the shipping industry

- Nuclear energy faces a significant challenge from the people, especially when it is related to oceans. For example, a protest emerged in Japan during the planned release of wastewater from Japan's Fukushima Daiichi atomic plant into the ocean.
- Further, many countries restrict nuclear power on their territory. For instance, Italy and Denmark have strong anti-nuclear regulation.
- Moreover, piracy risks for uranium reactors are also present because merchant ships don't carry the arsenal that military vessels use to deter piracy. There are also issues with the leakage of the reactors, if any accidents happen.

### Way ahead

There has been adoption of nuclear-powered ships which operate only on main routes between major ports. However, if achieving net-zero emissions in the shipping industry is a priority, nuclear energy needs to be adopted at large scale.

### Mains Point: to achieve net zero in the maritime sector

### 9. Ambergris worth Rs 4 crore found in dead whale: what is this rare substance, what it is used for

#### Context:

Rare substance Ambergris worth Rs 4 crore found in dead whale

A pathologist has recently discovered Ambergris in a dead whale, which could be worth nearly Rs 4 crore.

### About Ambergris

- Ambergris is a waxy substance that originates from the digestive system of protected sperm whales.
- It is produced in the gastrointestinal tract of some sperm whales for the passage of hard, sharp objects that are ingested when the whale eats large quantities of marine animals.

### Uses of ambergris

- Ambergris is a rare substance, which contributes to its high demand and high price in the international market.
- Traditionally, it is used to produce perfumes which have notes of musk. In the past cultures, it was used to flavour food, in alcoholic beverages and tobacco.

### Legal status of ambergris trade in India

- There is a ban on the possession and trade of ambergris in countries like the USA, Australia and India. But in several other countries, it is still a tradable commodity.
- In the Indian context, sperm whales are a protected species under Schedule 2 of the Wildlife Protection Act. Possession or trade of its by-products, including Ambergris and its byproducts, is illegal under provisions of the Wildlife Protection Act, 1972.

### Prelims Point: ambergris

## 10. Govt unveils guidelines for green hydrogen production, electrolyser manufacturing

### Context:

The Union Ministry of New and Renewable Energy (MNRE) has issued scheme guidelines for implementation of Strategic interventions for green hydrogen transition (SIGHT) programme.

Strategic Interventions for Green Hydrogen Transition (SIGHT) programme

SIGHT is a major financial measure under the National Green Hydrogen Mission.

### Objectives:

- To maximize production of Green Hydrogen and its derivatives in India
- Enhance cost-competitiveness of Green Hydrogen and its derivatives vis a-vis fossil-based alternatives and
- Encourage large scale utilization of Green Hydrogen and its derivatives.

**Components:** The programme has two distinct financial incentive components:

**Component I:** It targets domestic manufacturing of electrolysers.

**Component II:** It focuses on green hydrogen production

**Implementing Agency:** Solar Energy Corporation of India (SECI)

### Prelims Point: Strategic Interventions for Green Hydrogen Transition (SIGHT) programme

## 11. 3-Day International Conference on Green Hydrogen begins in New Delhi

### Context:

The three-day International Conference on Green Hydrogen (ICGH-2023) is being organized at Vigyan Bhawan, New Delhi.

### International Conference on Green Hydrogen (ICGH-2023)

### Organized by:

Ministry of New and Renewable Energy in partnership with the Ministry of Petroleum and Natural Gas, Council of Scientific and Industrial Research, Office of Principal Scientific Advisor to Government of India and the Confed-

eration of Indian Industry.

### Aim:

To explore how we can establish a Green Hydrogen ecosystem and foster a systemic approach for meeting the global goals for decarbonization through Green Hydrogen.

### The key highlights from the conference

#### India's energy import dependence:

- Energy use has doubled in the last 20 years in India and is likely to grow by at least another 25% by 2030.
- India currently imports over 40% of its primary energy requirements, worth over USD 90 billion every year.
- Major sectors like mobility and industrial production are significantly dependent on imported fossil fuels.
- This necessitates a shift towards technologies that enable enhanced share of renewable sources in the energy mix, to enable us to progressively reduce the reliance on fossil fuels.

#### Non fossil fuel:

- India is the only major economy to source 40% of our energy from non-fossil fuel sources nine years ahead of the target of 2030.
- Currently, around 42% of power generation capacity of India is based on non-fossil-fuels.

#### Green Hydrogen:

- As per the International Energy Agency, the world demand for hydrogen is expected to grow by 600% by the year 2050.
- India is one of the biggest consumers of green hydrogen in the world, with a demand of 6 million tons per annum.
- The Ministry of Petroleum & Natural Gas, and oil and gas PSUs have taken various initiatives for promotion of

green hydrogen. Oil India Limited has started a pilot plant in Jorhat, Assam which produces 10 kg of green hydrogen per day.

- Projects have also been commenced for setting up 3.5 million tons of green hydrogen manufacturing capacity already.
- Indian Oil Corporation Limited has entered into an agreement with Tata Motors, for development of hydrogen fuel cells in India.

#### Mains Point: Green Hydrogen

#### Prelims Point: Green Hydrogen:

### 12. Express View on Yamuna status report: River abandoned

#### Context:

Status report on the Yamuna River rejuvenation

In January, the National Green Tribunal (NGT) established a panel led by Delhi's lieutenant governor to find way to rejuvenate the Yamuna River in the capital. However, a six-month status report by the Delhi government reveals minimal reduction in pollution levels.

#### Major findings of the status report on the Yamuna River rejuvenation

#### Major finding are as follows:

- o The pollution levels in Yamuna River have barely decreased despite interventions.
- o The sewage treatment plants in Delhi are not fully utilized, causing untreated sewage to flow into the river.
- o Many poor communities lack access to the sewage pipe network.
- o Despite expanding the sewerage network to some unauthorized areas, around 245 million gallons of sewage remain untreated daily.



- o A 15-year-old project designed to trap sewage has failed to meet deadlines and didn't account for Delhi's growing population.
- o City authorities like the DDA, municipal corporation, and pollution control agencies aren't collaborating effectively.
- o More than 70% of Yamuna's pollution comes from Delhi, making it crucial to improve the city's pollution control.
- o Much of the Yamuna River in Delhi is so polluted that it's unfit for bathing.
- o This underlines the critical need for effective pollution control measures in the capital

### **Mains Point: Yamuna River rejuvenation**

### **13. Express view on extreme weather: Heat is on**

#### **Context:**

Raising global average daily temperatures

Last week saw global average daily temperatures in a range never seen before. Last Monday, it reached above 17 degrees Celsius. This was the hottest day recorded in history. The record was beaten again on Tuesday, and then on Thursday. More records are expected to be broken in the coming days and weeks. 2023 is likely to be one of the hottest years ever.

#### **Climate change progressing**

Climate change is happening as predicted by scientists, but maybe a bit faster. It's not just heat, but also heavy rain, floods, droughts, and wildfires. While these cannot be stopped instantly, governments can act to reduce their impact.

#### **Need to tackle heat waves**

Simple interventions can significantly reduce deaths from heat waves. How-

ever, many local governments don't have a heat action plan. No area can consider itself safe from heat waves due to their unpredictable nature.

#### **Heat wave exposure increased over the years**

In 2015, nine states experienced heat waves. By 2020, 23 states were affected. The number of heat wave days per year increased from seven in 2015 to 33 in 2020. Last month, eastern UP saw many people hospitalized, and several died due to heat-related diseases. These are the shocks that may repeat if local governments are not prepared.

#### **Heat waves in the rainy season**

It may seem strange to discuss heat waves during the rainy season. However, July is one of the four months when heat waves are expected. Recent trends suggest that heat waves could occur in subsequent months as well. Therefore, it's an ideal time for local governments to prepare for heat emergencies.

### **Mains Point: raising global average daily temperatures**

### **14. Unfair taxation in the name of climate action**

#### **Context:**

Concerns associated with levying emission related taxes

Rich countries have proposed global tax and tariff to mobilize finance for climate change. These taxes will harm the developing countries.

#### **Some of the taxation measures being adopted by rich countries**

#### **Carbon Border Adjustment Mechanism (CBAM):**

There are many flaws with CBAM -

- In the short run, this will generate more revenue for the EU and/or force export-

ers to squeeze their profit margins and wages to reduce costs.

- A tariff on an externality only alleviates if it is applied at the source of the externality, but the tariff in this case is imposed at the point of sale.
- The data needed to accurately assess and compare emissions is also contentious.
- CBAM mainly targets raw materials rather than finished goods. It will disproportionately affect countries in Africa and the European neighborhood that are not significant historical or present-day polluters.

### A proposed tax on Carbon Emissions from Shipping:

- It is based on the argument that shipping services are underpriced as no account is taken of their carbon emissions. Therefore, the tax can reduce emissions either by reducing shipping movements or by promoting switching to alternative low-carbon shipping technologies.
- However, the immediate impact of the tax will depend on the demand elasticity for shipping.
- If demand is inelastic, there will be no significant short-term reduction in emissions. Instead, it will increase the cost of shipping goods, and the burden of this tax will be passed on to consumers.
- Moreover, the tax will discriminate against island states and importers of bulk goods, including fuels, agricultural goods, and essential minerals. It will also discriminate against countries seeking to industrialize through export-led growth.
- The tax revenues will primarily only benefit the top 10 shipping countries, which are predominantly high-income economies.

### Some of the measures are being adopted by rich countries to mitigate the effect of such taxes on developing countries

- First, rich countries have proposed measures of giving developing countries some of the money raised from these taxes.
- However, it is the poorer countries themselves that will bear the burden of these taxes as well as be part of financing such transfers.
- Second, the other proposal adopted by rich countries involves subsidizing the transition of these countries to lower carbon technologies.
- However, if this transition were fully supported through grant finance, there would be no need for these tariffs.

### Way ahead

Rich countries are neither willing to take retroactive responsibility for carbon emissions nor provide grant and concessional finance in substantial measure to tackle the problem in contemporary times.

Hence, by adopting such taxation measures they only tend to hinder the development of poor countries.

### Mains Point: Carbon Border Adjustment Mechanism (CBAM):

### 15. Tropical waters have turned green in colour, courtesy climate change: Study

#### Context:

A recent study has indicated that Tropical Ocean waters are turning Green in colour due to alteration in phytoplankton communities.

#### About the Study:

- The study has found that 56% of the global ocean – a territory larger than the total land area on Earth experienced color change between 2002 and 2022.

- Tropical ocean regions near the Equator seem to have become greener over time. The southern Indian Ocean, in particular, has seen a significant colour change.

### Green color in oceans indicate

- Green-coloured water indicates life, especially phytoplankton, which are microscopic plant-like organisms. Blue, in contrast, indicates little life.
- The colour also determines the amount of carbon dioxide absorbed by the ocean. Currently, oceans absorb 25% of all carbon dioxide (CO<sub>2</sub>) emissions.

**Tropical oceans turning green in colour due to**

Researchers said that more work would be needed to find out what exactly those colour changes might mean. But they have said climate change was very likely to be the cause.

### Impact of Climate Change on oceans

Climate change threatens global oceans and the life that depends on them in multiple ways.

For instance, a 2020 study has warned that polar bears could largely disappear by the end of the century if global warming continues.

Another study found that half of the world's coral reefs have already been killed by warmer waters and ocean acidification

**Mains Point: Tropical Ocean waters are turning Green**

**Prelims Point: Tropical Ocean waters are turning Green**

## 16. Union Minister leads Mangrove Plantation drive in Chengalpattu, Tamil Nadu as part of the Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI) scheme

### Context:

The Ministry of Environment, Forest and Climate Change has organized a mangrove plantation program at Kovalam Panchayat in Chengalpattu District in Tamil Nadu.

It was organized as part of the Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI) scheme.

### About MISHTI Scheme

The MISHTI Scheme was announced in the Budget 2023-24.

### Objective:

To take up mangrove reforestation and afforestation along the coastal districts of India by adopting best practices that already exist in India as well as from other countries including Indonesia.

To develop mangrove associated ecotourism initiatives and livelihood generation in coastal states.

### Coverage:

- Currently, there is approximately 5000 sq kms of area under mangroves and through the MISHTI program an additional area of 540 sq km is proposed to be covered across 9 States and 4 Union Territories.

### Duration of the scheme:

The scheme is planned to be implemented for a period of five years from 2023-2024 to 2027-2028.

### Funding:

MISHTI is to be implemented by converging CAMPA Fund, MGNREGS, and other sources.

### Significance:

MISHTI will contribute to the efforts of 'Mangrove Alliance for Climate (MAC)' – an intergovernmental alliance for promotion of Mangrove, of which India be-

came its active member during the (COP27)

### Prelims Point: MISHTI Scheme

## 17. China event raises concern over India's only ape

### Context:

Global Gibbon Network (GGN) held its first meeting in China to discuss conservation of Hoolock Gibbon.

### About Hoolock Gibbon

- Hoolock Gibbon is the only ape found in India.
- It is native to eastern Bangladesh, India, Myanmar, and Southwest China.
- In India, they are confined to the seven states of northeast India with Brahmaputra as the distribution boundary.
- They form an arboreal species and prefer to live in canopies of the evergreen forests in northeast India.
- They traverse across the canopy using their very long forelimbs hanging and jumping from branch to branch.
- Along with this, they are famous for their loud hoolou calls (that inspires their name "Hoolock") and duets which both male and female of a group indulge in.

### Threats:

Hoolock gibbon faces threat primarily from the felling of trees for infrastructure Projects.

### Hoolock Gibbon species in India are

According to Zoologists, Northeast of India houses two species of the ape –

1. the eastern hoolock gibbon (*Hoolock leuconedys*) found in a specific region of Arunachal Pradesh and
2. the western hoolock gibbon (*Hoolock hoolock*) distributed elsewhere in the

Northeast.

But a study led by Hyderabad-based Centre for Cellular and Molecular Biology (CCMB) in 2021 proved through genetic analysis that there is only one species of ape in India. It debunked earlier research that the eastern hoolock gibbon was a separate species based on the colour of its coat.

However, the Red List maintained by the International Union for Conservation of Nature (IUCN) categorizes the Western hoolock gibbon as Endangered and the Eastern hoolock gibbon as Vulnerable.

### Prelims Point: Hoolock Gibbon

## 18. Western Ghats lost 5% evergreen forest cover, shows analysis

### Context:

Ecological research web portal analyses that Western Ghats lost 5% evergreen forest cover,

According to Western Ghats Spatial Decision Support System (WGSDSS), Western Ghats, which is among 36 global biodiversity hotspots, has seen a loss of 5% evergreen forest cover.

### About Western Ghats Spatial Decision Support System (WGSDSS)

#### Launched by:

Indian Institute of Science's Energy and Wetlands Research Group

#### Purpose:

It is a web portal that has been designed as part of the ongoing ecological research in the Western Ghats.

### Web portal findings about the Western Ghats

#### Loss of Forest Cover:

- Western Ghats has seen a loss of 5% evergreen forest cover with an increase



of 4.5% built-up cover, and 9% agriculture area.

- The interior forest constitutes only 25% of the forest landmass, depicting the fragmentation pressure, impacting local ecology.

### Ecological Sensitivity or Fragility:

- Ecological sensitivity or fragility refers to permanent and irreparable loss of extant life forms or significant damage to the natural processes of evolution and speciation with the alterations in the ecological integrity of a region.
- Researchers have classified the vulnerability of the regions in the Western Ghats into four categories of Ecologically Sensitive Regions (ESR) – very high ecological fragility, high ecological fragility, moderate ecological fragility, and low ecological fragility.
- The ESR analysis of the Western Ghats depicts 63,148 square km area under very high ecological fragility, 27,646 square km under high ecological fragility, 48,490 square km as moderate, and 20,716 square km as low ecological fragility.

### Recommendations:

- Western Ghats region witnessed large-scale land cover changes during the past century due to unplanned developmental activities with industrialisation and globalization.
- This necessitates implementing mitigation measures involving stakeholders to address the impacts through location-specific conservation measures.

### Prelims Point: Western Ghats Ecological sensitivity

## 19. Combating air pollution -Rural areas should not be left out

### Context:

Combating air pollution in Rural areas

In this article the author discusses the overlooked issue of air pollution in rural areas. It highlights its causes and the need for equal attention to both urban and rural regions in combating this pollution.

### About recent air pollution data

Urban Air Pollution

Urban areas in India recorded a PM 2.5 content of 46.8 microgram in 2022. This is higher than the national threshold of 40 micrograms.

### NCAP Focus:

The National Clean Air Program (NCAP) targets 130 cities for a 20-30% reduction in PM 2.5 and PM 10 levels by 2024.

About Rs. 89,000 crores have been allocated for the program, focusing solely on urban areas.

### Rural Air Pollution

PM 2.5 Content: Rural regions showed almost equal PM 2.5 levels at 46.4 microgram in 2022.

### Lifespan Impact:

According to the Centre for Science and Environment, villagers lose around seven more months of their potential lifespan due to polluted air.

### Causes of Pollution in Rural Areas

#### Traditional Ovens:

Rural homes commonly use chulhas (clay ovens) that emit smoke.

#### Conventional Fuels:

Fuels like wood, crop residues, and animal dung cakes are burned for cooking.

#### Diesel Usage:

Farm operations rely on diesel-run ma-

chinery such as tractors and water pumps.

### Crop Residue Burning:

Farmers burn crop leftovers, releasing pollutants into the atmosphere.

### Fertilisers:

Chemical fertilisers contribute to greenhouse gases, especially ammonia and nitrogen dioxide.

### Solution

Rural and urban areas need equal attention in battling air pollution.

Promoting access to clean fuels and efficient use of farm inputs can help curb rural pollution

### Mains Point: Combating air pollution in Rural areas

## 20. Use contextual tools and models to catalyse our climate transition

### Context:

To effectively catalyze the climate transition

This article discusses the importance of genuine and long-term business strategies in the climate transition, warning against short-lived tactics and emphasizing that eco-friendly investments are beneficial.

### About carbon emissions data

#### Global Carbon Emissions:

- Economic systems are now accounting for the cost of greenhouse gas (GHG) emissions.
- Transition to a low-carbon economy is driven by various stakeholders.
- Electric vehicles are a solution to replace traditional combustion engine vehicles.
- Rice cultivation contributes 10% of global methane emissions, a GHG 25 times

stronger than CO<sub>2</sub>.

### India's Carbon Emissions:

- India ranks as the third-largest emitter worldwide.
- Per capita emissions in India are one-fifth the global average.
- With a growing middle class and manufacturing base, India's emissions will rise.

### Should be done to effectively catalyze the climate transition

#### Adopt Low-Carbon Technologies:

Embrace alternatives for carbon-heavy industries to reduce emissions. Electric vehicles can replace traditional combustion engine vehicles, minimizing automotive emissions.

#### Implement Digital Solutions:

- a. Optimizing supply chains can reduce carbon footprints,
- b. A McKinsey report highlights that 80% of an organization's emissions come from its supply chain, signifying the importance of this optimization,
- c. Digital tools can monitor production processes, decreasing inefficiencies and waste, thus cutting emissions.

#### Encourage Innovative Food Production:

Adopt technologies like CRISPR for different food production methods. Like, String Bio is a model example, using methane-based synthetic biology to improve rice yields by 30-40% while decreasing methane emissions by 60%.

#### Reduce Food Waste:

- a. It's tied to 8-10% of all annual GHG emissions,
- b. Digital-enabled supply chains can help match demand with supply for perishable items, reducing waste rates to

single digits.

### Develop the Carbon Accounting Market:

- Transition from legacy accounting systems that overlook the costs of earth's resources,
- The potential growth of the carbon accounting market is vast, with estimates suggesting a leap from \$12 billion to \$65 billion by 2030,
- Use software and hardware-led methods for scalable and authentic carbon measurement and reporting.

### Promote Transparency and Accountability:

Business opportunities in climate transition should prioritize transparency to counteract short-term opportunistic strategies like greenwashing.

### Mains Point: catalyze the climate transition

## 21. When El Nino and the monsoon meet in India: Rain checks for our times

### Context:

The changing monsoon patterns in India due to climate factors like El Nino

This article discusses the changing monsoon patterns in India due to climate factors like El Nino, its impact on agriculture and livelihoods, and suggests strategies like mapping, financial planning, and restoring ecosystems to tackle these changes.

### Reasons for change in monsoon pattern in India

#### El Nino:

Characterized by warming of the Central and Eastern Equatorial Pacific Ocean, it influences global weather patterns. For example, during El Nino years, rainfall trends over 132 years show frequent drought-like conditions in India.

### Indian Ocean Dipole and Madden-Julian Oscillation:

These regional phenomena significantly shape monsoon dynamics.

### Climatic Events:

Like, in June, cyclone Biparjoy hit the western coast, leading to erratic monsoon onset in other parts.

#### Human Impact:

As the climate changes, unpredictable monsoons occur, affecting 75% of India's rain-fed farmlands.

### India can tackle this challenge through

#### Mapping and Forecasting:

- Identify monsoon variability impacts,
- Create a high-resolution monsoon variability index for vulnerabilities at city and block levels,
- Strengthen early warning systems for accurate predictions.

#### Financial Planning and Integration:

- Merge public and private funds to handle financial challenges from erratic monsoons,
- Have the central bank monitor climate patterns like El Nino for better financial planning,
- Implement mandatory reporting as per the Task Force on Climate-related Financial Disclosures (TCFD).

#### Ecosystem Restoration:

- Prioritize rehabilitating ecosystems like mangroves, wetlands, and forests,
- Promote nature-based solutions for climate challenges,
- Allocate resources for sustainable land restoration to mitigate climate impact.

#### Shared Responsibility:

- Encourage all societal sections to collaboratively address climate change,

- b) Focus on being proactive rather than using alarming rhetoric.

Adopting these strategies can ensure India's preparedness against monsoon changes and its consequences

### **Mains Point: changing monsoon patterns in India**

## **22. Over 60 species of plants that can survive extreme dehydration found in Western Ghats**

### **Context:**

Researchers have recently discovered 62 Desiccation-tolerate vascular (DT) plant species in India's Western Ghats.

### **About Desiccation-tolerate vascular plant species**

- Desiccation-tolerant vascular (DT) plants are those plant species that are able to withstand extreme dehydration.
- They can lose up to 95% of their water content and can revive themselves once water is available again.
- This unique ability allows them to survive in harsh, arid environments that would be uninhabitable for most other plants.
- These plants are found in both flowering and non-flowering species and in both temperate and tropical climates.
- The global population of these species ranges between 300 and 1,500.

### **Desiccation-tolerate vascular(DT) plant species in India:**

Indian desiccation tolerant plants are primarily found in forest rock outcrops and partially shaded tree trunks.

Ferricretes (a hard, erosion-resistant layer of sedimentary rock) and basaltic plateaus (plateaus produced by volcanic activity) seemed to be the preferred habitats.

A study has recently found 62 desiccation-tolerant vascular plant species in Western Ghats. Of these, 16 are endemic to India while 12 are exclusive to Western Ghats outcrops.

Among these discovered, nine genera of DT plants are reported as new also in a global perspective. They are identified as Pyrrosia, Aleuritopteris, Corallodiscus, Arundinella, Bhidea, Bothriochloa, Danthonidium, Dimeria and Glyphochloa.

### **The significance of this discovery**

The discovery of the desiccation-tolerant (DT) vascular plants has potential applications in agriculture.

### **For instance:**

Desiccation-resistant vascular plants can be used particularly in areas where water is scarce.

Desiccation-resistant vascular plant genes can be used to develop a high temperature tolerant crop variety to boost climate resilience.

### **Prelims Point: Desiccation-tolerate vascular plant species**

## **23. NITI Aayog releases Analytical Tools for managing Climate Change and exploring Net Zero Pathways**

### **Context:**

NITI Aayog releases Analytical Tools for managing Climate Change

Niti Aayog has launched the revamped version of India Energy Security Scenarios (IESS) 2047.

About India Energy Security Scenarios (IESS) 2047

IESS is an open-source web-based tool launched by Niti Aayog. It has been designed with the help of IIT Bombay.



**Purpose of the tool:**

- To assess the integrated impact of various green energy policies of the Government of India.
- To analyze emissions, cost, land and water requirements of India till 2047 by assessing the demand and supply of energy in the country.
- The tool will be updated on a yearly basis.

**Significance of IESS tool:**

- It is user-friendly interactive tool that can help ministries/ departments to develop a variety of energy transition scenarios to achieve net-zero.
- The tool is also flexible enough to provide many permutations and combinations of net-zero pathways.
- It can also help in computing the energy needs and estimates of the country and hence reduce India's dependency on external agencies for the estimates

**Prelims Point: India Energy Security Scenarios****24. Himalayan glaciers retreating at varying rates, says Union Minister****Context:**

Union Minister says about Himalayan glaciers retreating rates

The Union Minister of Earth Sciences has said that the majority of Himalayan glaciers analyzed are melting or retreating at varying rates in different regions.

**Melting of Himalayan Glaciers:****Chandra Basin in Western Himalayas:**

- National Centre for Polar and Ocean Research (NCPOR) has been monitoring six glaciers in the Chandra basin in western Himalaya since 2013.

- A state-of-the-art field research station 'Himansh' established in Chandra basin and operational since 2016 for conducting field experiments and expeditions to glaciers.
- NCPOR has found that the Chandra basin has lost about 6% of its glacial area during last 20 years.

**Garhwal Himalayas:**

- Wadia Institute of Himalayan Geology (WIHG) has been pursuing cryospheric research on different aspects that include glacier dynamics, hydrology and hazards using both satellite data and ground-based observations.
- WIHG have observed that glaciers in the Garhwal Himalaya have shown an overall retreat of glaciers with variable rate of melting.

**Himalayan Karakoram region:**

Indian Space Research Organization's (ISRO's) Space Application Centre (SAC) has mapped 5234 glaciers of Himalayan-Karakoram (H-K) region which indicated varied loss in glacier area in the region.

**Reasons for Himalayan Glaciers melting**

- The melting of glaciers is a natural process and cannot be controlled. The recession or melting of glaciers is mainly caused by global warming and climate change.
- Therefore, the rate of melting of glaciers can't be prevented or slowed down, unless all the factors responsible for global warming and climate change can be controlled.

**Impact of melting of Himalayan Glaciers**

Melting of Glaciers will not only severely affect the flow in Himalayan River system but will also give rise to natural disasters.

It may also lead to shift of tree line in

the Himalaya and may also cause change in phonological behavior of plants. It may also impact the livelihoods of mountain people and downstream populations.

### **Mains Point: Melting of Himalayan Glaciers**

## **25. Invasive weed threatens elephant habitats in Tamil Nadu**

### **Context:**

An Invasive aquatic weed named “Ludwigia peruviana” is threatening elephant habitats in Tamil Nadu and reviving the risk of human-elephant conflicts in the region.

### **About Ludwigia peruviana**

Ludwigia peruviana is an aquatic weed native to some countries in Central and South America, including Peru.

It is usually found in wetlands, swamps, marshes and along the edges of lagoons and slow-moving waterways (sometimes also floating on the water surface).

### **Ludwigia peruviana an invasive plant**

- Ludwigia peruviana is among the 22 priority invasive plants in Tamil Nadu. It was probably introduced as an ornamental plant for its tiny yellow flowers.
- However, it is now challenging the existence of local vegetation in various swampy areas.
- It is a fast-growing aquatic weed. It forms dense colonies in slow-moving and static waterways.
- This impacts the water flows in waterways, outcompetes native plants, reduces food and shelter for fish and other native aquatic animals and decreases light and water temperature.
- Moreover, unlike other invasive plants, Ludwigia poses a unique challenge as it grows in swamps and there is little

scope to use machinery which may further destroy the ecosystem.

- Even if Ludwigia is pulled out manually, the soft plant easily breaks and it spreads again from the root or broken stems that fall in the swamp.

### **How is Ludwigia peruviana impacting elephant habitats?**

In Tamil Nadu, Ludwigia peruviana has limited the growth of grass and native plants that is a source of food for elephants and other animals including gaur. This has revived the risk of human-elephant conflicts in the region.



### **Prelims Point: Ludwigia peruviana**

## **26. Measures to Reduce Methane Emissions**

### **Context:**

The Union Minister of State for Environment, Forest and Climate Change has informed Lok Sabha about the measures the government is taking to reduce methane emissions.

### **India's methane emissions data**

- India is a Party to the United Nations Framework Convention on Climate Change (UNFCCC), and its Kyoto Protocol (KP) and the Paris Agreement (PA).

- As a Party to the UNFCCC, India periodically submits its National Communications (NCs) and Biennial Update Reports (BURs) to the UNFCCC which includes national Greenhouse Gas (GHG) inventory containing information on methane emissions.
- As per India's third Biennial Update Report, India's methane emissions in 2016 (excluding LULUCF) were 409 million tone CO<sub>2</sub>e of which, 73.96% was from Agriculture sector, 14.46% from Waste sector, 10.62% from Energy sector and 0.96% was from Industrial Processes and Product Use sector.

### Some of the measures taken to reduce methane emissions

#### National Mission on Sustainable Agriculture (NMSA):

It is implemented by the Ministry of Agriculture and Farmers Welfare. It involves climate resilient practices including methane reduction practices in rice cultivation. These practices contribute to substantial reduction of methane emissions.

The Indian Council of Agricultural Research (ICAR) under National Innovations in Climate Resilient Agriculture (NICRA) project has developed several technologies with mitigation potential for methane from rice such as:

#### System for Rice Intensification:

This technique has potential to enhance rice yield from 36-49% with about 22-35% less water than conventional transplanted rice~

#### Direct Seeded Rice:

This system reduces methane emissions as it does not involve raising nurseries, puddling and transplanting. Unlike transplanted paddy cultivation, standing water is not maintained in this system and

#### Crop Diversification Programme:

- Methane emissions are avoided due to diversion of paddy to alternate crops like pulses, oilseeds, maize, cotton and agro forestry.
- Capacity building programmes are conducted through Krishi Vigyan Kendras across the country for creating awareness on climate resilient practices.
- The Department of Animal Husbandry and Dairying (DAHD) is implementing the National Livestock Mission which includes Breed Improvement and Balanced Rationing. Feeding livestock with a superior quality balanced ration is helping to reduce methane emissions from the livestock.
- Government of India promotes green fodder production, silage making, chaff cutting, and total mixed ration under National Livestock Mission with a view to reduce methane emissions from livestock.
- Cattle waste utilization is being incentivised through initiatives like 'The Gobar (Galvanizing Organic Bio-Agro Resources) -Dhan' scheme and New National Biogas and Organic Manure Programme.

#### Prelims Point: measures taken to reduce methane emissions.

#### 27. What are marine heat waves, which have gripped parts of the world's oceans this summer?

##### Context:

Marine heat waves due to raising ocean temperatures

Since April 2023, ocean temperatures have remained at record-high levels giving rise to Marine Heat Waves (MHWs) around the globe.

## Marine Heat Waves (MHWs)

A marine heat wave is an extreme weather event. It occurs when the surface temperature of a particular region of the sea rises to 3 or 4 degrees Celsius above the average temperature for at least five days. MHWs can last for weeks, months or even years.

### Impact of marine heat waves on ocean life

- An increase of 3 or 4 degrees Celsius in average temperatures may not impact humans a lot. But it can be catastrophic for marine life.
- For instance, MHWs along the Western Australian coast during the summer of 2010 and 2011 caused unexpected death of many fish or other aquatic animals over a short period of time.
- Another example is when high ocean temperatures in the tropical Atlantic and Caribbean in 2005 led to a massive coral bleaching event. A 2010 study showed that more than 80% of surveyed corals had bleached and over 40 per cent of the total surveyed had died.
- MHWs also fuel the growth of invasive alien species, which can be destructive to marine food webs.

### Marine heat waves affect humans

- Higher ocean temperatures, which are associated with MHWs, can make storms like hurricanes and tropical cyclones stronger.
- With warmer temperatures, the rate of evaporation escalates and so does the transfer of heat from the oceans to the air. When storms travel across hot oceans, they gather more water vapour and heat.
- This results in more powerful winds, heavier rainfall and more flooding when storms reach the land meaning heightened devastation for humans.

## Global warming affect on marine heat waves and oceans

- According to a 2018 study titled 'Marine heatwaves under global warming' due to increase in global temperatures, MHWs have become longer-lasting, more frequent and intense in the past few decades. The study has also attributed 87 percent of MHWs to human-induced warming.
- Moreover, according to Copernicus Climate Change Service, oceans have absorbed 90% of the additional heat caused by the release of greenhouse gases into the atmosphere from burning fossil fuels and deforestation in recent decades. This has increased the global mean sea surface temperature by close to 0.9 degree Celsius since 1850.
- Hence, as global air temperatures increase, so will ocean temperatures leading to more MHWs.

**Prelims Point: Marine Heat Waves (MHWs)**

**Mains Point: Marine Heat Waves (MHWs)**

## 28. Oppenheimer's project should inspire climate action urgency

### Context:

Measures needed to tackle climate change

The article explains different models that can be adopted to tackle climate change.

Different models replicated for climate change

### Oppenheimer/Manhattan model:

- Robert J. Oppenheimer led the Manhattan Project during World War II to build an atomic bomb. The project was completed under the given deadline.
- This highlights that when the social return on an investment is higher than the private return, the government can run



focused projects better than the private companies.

- Hence, given the urgency of climate change, there are questions about whether the success of the Manhattan Project could be replicated in tackling this global emergency.

### Apollo Programme:

- It was a successful US government initiative to send astronauts into space during the 1960s before the Soviet Union. NASA received funds an equivalent of 0.7% of GDP in the 1960s and employed 400,000 people to achieve the mission before the Soviet Union could.
- As per the findings of research, the investment made by the government and technological assistance, increased productivity in US counties that already had relevant technology capabilities.
- However, the impact on overall productivity across the entire US economy was limited.
- Hence, a key takeaway from the study is that directing focused spending towards particular sectors to achieve specific geopolitical or climate objectives can potentially lead to enhanced productivity in those specific sectors.
- However, its effect on the entire economy remains uncertain.

### These two models be adopted for green transition

- A common objective in both the models was the need to accomplish a massive task under time pressure, requiring a substantial push, which is also required for green transition.
- However, the government was the sole user of the new technology in both the models. Whereas the green transition requires a much broader adoption of new technologies across society, involving firms, cities, and citizens.

This presents challenges on both the demand and supply sides.

### Way ahead for green transition

- The practical approach to the green transition will involve targeted investments in new areas, a combination of subsidies and a carbon tax to encourage technology adoption, requiring efforts from both the state and the market.
- However, there may also be a need to replace capital more quickly than normal, which carries risks. One such risk is governments' ability to select technology more effectively through industrial policy than through market forces.
- Hence, urgent action is needed to tackle climate change while taking all the factors into consideration.

### Mains Point: measures needed to tackle climate change

### 29. Harness silvopasture systems for local climate resilience

#### Context:

In light of the global deterioration of natural resources and forests, silvopasture systems offer a relevant solution to deforestation trends.

#### About Silvopasture

- Silvopasture is an ancient and proven practice that harmoniously integrates trees, forage and livestock on the same land.
- By combining these elements, silvopasture brings numerous environmental advantages, including improved local climate resilience.
- Silvopasture practices currently cover a vast expanse of 550 million hectares worldwide.

## Advantages of Silvopasture

### Deforestation:

Silvopasture can play a vital role in reversing the negative trend of deforestation for pasture land.

### Carbon Sinks:

The trees on silvopasture lands act as natural carbon sinks, sequestering five to 10 times more carbon than pastures without trees.

### Regulate local climatic conditions:

Silvopasture systems also regulate local climatic conditions, buffering against temperature and wind extremes, providing a favorable living environment for livestock.

### Nutrition cycle:

The extensive root systems of trees within silvopasture plots contribute to nutrient cycling, improved soil stability and quality while effectively combating erosion.

### Soil infiltration rates:

Soil infiltration rates in silvopasture systems surpass those of open pastures, enhancing water storage potential.

### Livestock:

The cattle utilized the silvopasture landscape more evenly as there was more shading throughout the plot, reducing heat stress during the warm-weather portions of the year.

### Prelims Point: silvopasture



## 30. Mercury rising

### Context:

Climate change is leading to extreme weather patterns

The United Nations Secretary-General, António Guterres, this week reiterated the consequences of the climate catastrophe that has spread globally. The earth had passed from a warming phase into an “era of global boiling”.

### Climate change is leading to extreme weather patterns

- July is set to be the hottest month in the last 12,000 years. As per Scientists from the WMO and the European Commission’s Copernicus Climate Change Service, conditions in July were “rather remarkable and unprecedented”.
- Average July temperature has been 16.95° Celsius. It is 0.2° C warmer than

in July 2019.

- Ocean temperatures are increasing and the Central Equatorial Pacific Ocean is transitioning from La Niña to El Niño conditions. So, it was widely anticipated that temperatures would be warmer than in the last three years.
- But, the distribution and impact of the recorded 16.95°C temperature was unexpected. It resulted in extreme weather events such as northwest China experiencing temperatures as high as 52°C, wildfires breaking out in Greece.
- The unusually heavy rains in north and western India were influenced by the warm air increasing the atmosphere's capacity to hold moisture. This led to intense, short torrential bursts of rain, floods and significant devastation.

### Climate change can be tackled effectively

As per UN secretary General, there is a need for dramatic, immediate climate action.

The world's largest economies should adopt more ambitious emission cuts.

### These events impact India

There will be greater pressure on India for greenhouse gas mitigation responsibilities. This could mean advancing its net zero commitments from 2070 to 2050, and generating fossil-free electricity by 2040.

**Prelims Point: Climate change is leading to extreme weather patterns**

**Mains Point: Climate change is leading to extreme weather patterns**

## 31. How World Bank group can scale climate finance

### Context:

Measures needed by World Bank in scaling climate finance.

The World Bank has faced criticism for its insufficient efforts in addressing climate change. However, transforming the Bank into the world's leading institution for climate-related initiatives presents challenges.

### The challenges present

The Bank's governance is heavily influenced by the US and Europe, and the main shareholders are reluctant to offer significant new contributions to increase the Bank's capital.

### Measures can be taken by the Bank to tackle global carbon emission

- There is a need to focus on the largest emitters because the top 35 global emitters account for around 90% of yearly greenhouse gas emissions.
  - Hence, the World Bank needs to raise more capital from its current borrowers who are among the top global polluters, to address mitigation challenges.
  - However, this shift in focus could be seen as diverting from the Bank's primary mission of poverty eradication.
- World Bank mobilize more capital for climate related activities as well as for poverty eradication
- The Bank needs increased contributions from Global North to the International Development Association (IDA) for providing adaptation finance to the poorest nations.
  - The Bank should simultaneously focus on supporting 20 of its current borrowing countries (excluding China and Russia), which are among the world's top 35 emitters.
  - These countries require additional funding to facilitate their respective energy transitions.
  - However, one of the barriers to achieving the climate agenda with the bank is the International Bank for Reconstruc-

- tion and Development's (IBRD) rating-agency regulations on leverage levels.
- Therefore, implementing a shift from loans to guarantees could have served the purpose; however, it has also been hindered by staff resistance.
- Hence, IBRD may not be the best organization to scale up the Bank's climate ambition. Two other agencies of the Bank are better suited for the task.

### Following agencies are suited for the Bank's climate agenda

#### Multilateral Investment Guarantee Agency (MIGA):

- It makes much more economical use of shareholders' capital compared to IBRD. For instance, it makes good use of shareholders' money by underwriting \$17 in guarantees for every \$1 in equity.
- It could stretch its capital even further by employing credit enhancement and partial guarantee products and being more open to risk.
- Hence, the Bank should focus on increasing MIGA's risk and expanding its capitalization instead of prioritizing IBRD to mobilize climate finance.

#### International Finance Corporation (IFC):

- It could raise third-party equity financing at scale without straining its own balance sheet by expanding its asset management business.
- IFC Asset Management Company manages 13 funds with modest assets of only \$10 billion. It has the potential to scale up this business to handle hundreds of billions of dollars.
- IFC has the capability to raise third-party equity capital from global insurance companies, pension funds, and sovereign funds. It can efficiently manage a large pool of assets with modest contributions from its own balance sheet.

- Thus, IFC should strive to become a leading equity fund manager and fund-of-funds manager, specifically for climate mitigation investments in emerging markets.

### Mains Point: World Bank in scaling climate finance

#### 32. Nature inspires breakthrough achievement: Hazard-free production of fluorochemicals

##### Context:

Researchers from the University of Oxford developed a Hazard-free production of fluorochemicals

Researchers at the University of Oxford have achieved a groundbreaking breakthrough by developing a new technique to produce fluorochemicals without using hazardous hydrogen fluoride (HF) gas

##### Fluorochemicals

Fluorine is a highly reactive element that comes from a calcium salt called calcium fluoride, or fluorspar.

Fluorine is used to make fluorochemicals, which in turn are used to produce plastics, agrochemicals, lithium-ion batteries and drugs.

##### Process of making Fluorochemicals and their drawbacks

###### Process:

Fluorspar is mined and then treated with sulphuric acid at a high temperature to release hydrogen fluoride (HF). HF is then made to react with other compounds to create fluorochemicals.

###### Drawback:

A major downside of this process is that HF is an extremely poisonous and corrosive liquid that irritates the eyes and respiratory tract even at low concentrations. It also requires special transport



tation and storage requirements.

Moreover, despite stringent safety regulations, HF spills have occurred numerous times in the last decades, sometimes with fatal accidents and detrimental environmental effects.

Researchers from the University of Oxford developed to **overcome this drawback** in making Fluorochemicals

- Researchers took inspiration from how the human body makes bones and teeth through calcium phosphate biomineralization.
- Based on this, they developed an innovative which involved grinding fluor-spar with potassium phosphate in a ball-mill While fluorine is very reactive, calcium atoms prefer phosphorus even more, so the milling created calcium phosphate and another compound with fluorine atoms. They called this process Fluoromix.
- When this Fluoromix was reacted with organic compounds, it could create around 50 fluorochemicals with up to 98% yield.

### Significance:

This new method has the potential to enhance safety and environmental impact, streamline the supply chain and reduce energy demands in the rapidly expanding global fluorochemical industry.

**Prelims Point: Hazard-free production of fluorochemicals**

### 33. Union Minister launches Resource Efficiency Circular Economy Industry Coalition in Chennai

#### Context:

The Union Minister of Environment, Forest and Climate Change has launched a Resource Efficiency Circu-

lar Economy Industry Coalition (RECEIC).

It was launched on the sidelines of the 4th environment and climate sustainability working group meeting and ministerial talks taking place in Chennai, Tamil Nadu.

### Resource Efficiency Circular Economy Industry Coalition (RECEIC)

Resource Efficiency Circular Economy Industry Coalition (RECEIC) was conceived during India's G20 Presidency.

#### Purpose:

It is an industry-led initiative that aims to promote resource efficiency and circular economy practices.

#### Aim:

To facilitate and foster greater company-to-company collaboration, build advanced capabilities across sectors and value chains, bring learnings from diverse and global experiences of the coalition members and unlock on-ground private sector action to enhance resource efficiency and accelerate circular economy transition.

#### Pillars:

The Coalition is structured around the three guiding pillars of

- 1) partnerships for impact
- 2) technology cooperation and
- 3) finance for scale.

#### Members:

The Coalition has founding members representing 39 companies from 11 countries. Some of the founding members include companies like Maruti Suzuki, Coca Cola, Unilever, Nestle, Aditya Birla Group, Tata Power and Mahindra & Mahindra.

**Significant role to be played by Coalition:**

RECEIC may be invited to the G20 Resource Efficiency Dialogue for annual convenings as well as sharing their experiences with the G20 and highlighting success factors to enhance resource efficiency and circular economy.

RECEIC will also act as an overarching platform enabling industries to address information gaps and coordination challenges across the G20 members.

**Mains Point: Resource Efficiency Circular Economy Industry Coalition (RECEIC)****Prelims Point: Resource Efficiency Circular Economy Industry Coalition (RECEIC)****34. BSIP scientists discover new species of flower from Sikkim****Context:**

Scientists have discovered a new plant species in the state of Sikkim

Scientists from the Botanical Survey of India (BSI) Prayagraj Centre have discovered a new plant species in the state

of Sikkim named *Pedicularis Revealiana*.

Sikkim is renowned for its remarkable biodiversity. This state alone accounts for 45 percent of the total plant diversity in the Indian Himalayan region.

**Pedicularis Revealiana**

- *Pedicularis Revealiana* is a plant belonging to the *Pedicularis* species group. It is commonly known as a perennial herb.
- This plant thrives in remote forests, which remain snow-covered for most of the year.
- It is a hemi-parasitic species meaning it is partially parasitic, setting it apart from all other known *Pedicularis* species.
- This plant not only produces its own food but also demonstrates the remarkable ability to draw nutrients from the roots of neighboring trees and plants.

**Prelims Point: Pedicularis Revealiana**

# SCIENCE AND TECHNOLOGY

## 1. Low-cost perovskite solar cells with superior thermal and moisture stability developed indigenously by Indian scientists

### Context:

Indian scientists have indigenously developed highly stable, low-cost Carbon-based perovskite solar cells.

### About Perovskite:

- A perovskite is a material that has the same crystal structure as the mineral calcium titanium oxide also known as Perovskite.
- It was first found in the Ural Mountains and named after Lev Perovski who was the founder of the Russian Geographical Society.
- Because of their unique crystal make-up, perovskites often display a number of interesting properties, including superconductivity, giant magnetoresistance, and ferroelectricity.

### Perovskite Solar Cells(PSC):

- Perovskite Solar Cells (PSC) is a type of solar cell that includes a perovskite-structured compound, most commonly a hybrid organic-inorganic lead or tin halide-based material, as the light-harvesting active layer.
- Perovskite Solar Cells(PSC) offer a promising alternative to traditional silicon solar cells as they have higher efficiencies and very low production costs.
- However, Perovskite solar cells face the problem of degradation during operation when they come in contact with heat, moisture, light, and other environmental factors. This long-duration sta-

bility is a major hindrance in the large-scale commercialisation of the product.

### What have the scientists developed?

- Scientists have indigenously developed highly stable, low-cost Carbon-based perovskite solar cells with superior thermal and moisture stability which can help overcome the challenges of degradation during operation.

### UPSC Prelims point: Perovskite

## 2. China event raises concern over India's only ape

### Context:

Global Gibbon Network (GGN) held its first meeting in China to discuss conservation of Hoolock Gibbon.

### Hoolock Gibbon:



- Hoolock Gibbon is the only ape found in India.
- It is native to eastern Bangladesh, India, Myanmar, and Southwest China.
- In India, they are confined to the seven states of northeast India with Brahmaputra as the distribution boundary.

- They form an arboreal species and prefer to live in canopies of the evergreen forests in northeast India.
- They traverse across the canopy using their very long forelimbs hanging and jumping from branch to branch.
- Along with this, they are famous for their loud holou calls (that inspires their name "Hoolock") and duets which both male and female of a group indulge in.
- **Threats:** Hoolock gibbon faces threat primarily from the felling of trees for infrastructure Projects.

### Species of Hoolock Gibbon in India:

- According to Zoologists, Northeast of India houses two species of the ape – the eastern hoolock gibbon (*Hoolock leuconedys*) found in a specific region of Arunachal Pradesh and the western hoolock gibbon (*Hoolock hoolock*) distributed elsewhere in the Northeast.
- But a study led by Hyderabad-based Centre for Cellular and Molecular Biology (CCMB) in 2021 proved through genetic analysis that there is only one species of ape in India. It debunked earlier research that the eastern hoolock gibbon was a separate species based on the colour of its coat.
- However, the Red List maintained by the International Union for Conservation of Nature (IUCN) categorizes the **Western hoolock gibbon** as **Endangered** and the **Eastern hoolock gibbon** as **Vulnerable**.

### UPSC Prelims point: Hoolock Gibbon

### 3. Misplaced interest: Govt equity in chip design firms is impractical

#### Context:

Indigenization of technology (Science and technology)

#### Background:

In this article author discusses the Indian government's strategy to stimulate the domestic semiconductor industry, pointing out potential drawbacks due to its focus on manufacturing, bureaucratic processes, past private sector partnerships, and neglect of the broader economy.

#### About Government's approach to Boosting the Domestic Semiconductor Industry

1. Government aims to boost the domestic semiconductor industry.
2. They will **underwrite up to 50% of foundry costs**.
3. They've offered **1 55,392 crore production-linked incentives**.
4. The Design-Linked Incentive (DLI) scheme supports local companies.
5. **Goal:** retain intellectual property rights within the country.
6. **Aim** to counter brain drain to Silicon Valley.
7. Plan to take equity stakes in domestic chip design companies.

#### The major concerns in the Government's Approach:

- **Overemphasis on manufacturing:** The government's strategy might be too focused on manufacturing, while the core value in the semiconductor business lies in design. Major players like Intel, Qualcomm, Nvidia, and AMD have chosen to invest in refining technology rather than in costly manufacturing processes.
- **Inadequate acknowledgement of industry dynamics:** The semiconductor design industry thrives on speed, competitiveness, and resilience to failures. The government's lengthy bureaucratic processes may stifle this innovative environment.



- **Past unsuccessful partnerships:** Government's previous collaborations with the private sector, like with Balco and Hindustan Zinc, cast doubt on its capability to stimulate the required competitive dynamism in the semiconductor industry.
- **Neglecting broader economic context:** The approach of picking industry champions without considering the wider economy could yield minimal results. A holistic approach that stimulates market creation, similar to how Silicon Valley focused on the consumer goods market, could be more effective.

### What should be done:

- **Streamline processes:** Reduce bureaucracy to foster a fast-paced, innovative industry environment.
- **Improve private sector partnership:** Learn from past experiences to build strong, successful collaborations.
- **Integrated approach:** Don't select industry champions in isolation; consider the wider economy.
- **Market creation:** Help chip designers establish markets in India and abroad.
- **Enhance ease of doing business:** Reduce frictions, making it easier for companies to operate.
- **Learn from successful models:** Emulate Silicon Valley's strategy of focusing on fast-growing consumer goods markets.

## 4. Union Minister says, India has developed the world's latest Steel Slag Road technology

### Context:

The Union Minister of Science & Technology has announced that India has developed the world's latest Steel Slag Road technology.

### About Slag:

- Slag is made up of impurities melted out of the ore during the steel-making process in most of the Steel Plants.

### Use of Steel Slag in Road construction:

- CSIR- Central Road Research Institute (CRRI), New Delhi has pioneered the development of use of Steel slag in road construction.
- In 2022, Surat in Gujarat became the first city in the country to get a processed steel slag (industrial waste) road.
- The Border Roads Organisation (BRO) has also used steel slag to construct a long-lasting heavy-duty road at Arunachal Pradesh along the India-China border area.
- Besides, India's largest road building agency, National Highway Authority of India successfully tested the Steel Slag Road technology on NH-66 (Mumbai-Goa).

### Advantages of using Steel Slag in road construction:

- **Environment friendly:** India is the world's second largest steel producer. For per ton of steel production around 200 kg Steel slag is generated as solid waste.
- Steel slag generation in the country is about 19 Million tons per annum and expected to reach 60 million tons by 2030.
- This huge quantity of steel slag is piled up in and around the steel plants as big mounds and becoming the source of air, water, and land pollution.
- Hence, the use of steel slag in road construction is an environmentally friendly cost-effective method.
- **Cheaper:** Steel slag road costs are about 30% cheaper than conventional making of roads.

- **Less Maintenance cost:** Steel slag roads have been found to last ten years as compared to three to four years for bitumen roads, thus bringing down sharply the maintenance costs.
- **More durable:** Steel slag roads are more durable and resistant to weather unpredictability.

## 5. Push for GM mustard disregarding science, the law

### Context: Concerns associated with GM crops

#### Background:

Environmentalists in the Supreme Court of India are engaged in a battle against Delhi University's Genetically Modified (GM) Herbicide-Tolerant (HT) mustard.

#### GM crops:

- GM Crops are plants used in agriculture, the DNA of which has been modified using genetic engineering
- GM is a technology that involves inserting DNA into the genome of an organism.
- To produce a GM plant, new DNA is transferred into plant cells.
- Usually, the cells are then grown in tissue culture where they develop into plants.
- The seeds produced by these plants inherit the new DNA.

#### The arguments against GM crops:

- Environmentalists, scientists, politicians, farmers, consumers, and the judiciary, have raised concerns about the safety, efficacy, and necessity of GM food.
- The experience with Bt cotton, India's only approved GM crop, has raised concerns. Long-term research suggests that while Bt cotton initially provided some

benefits to farmers, it ultimately increased cultivation costs and risks.

- However, two Standing Committees of the Parliament independently and comprehensively examined GM crops and food.
- The first one was the Standing Committee on Agriculture in 2012, and another was the Standing Committee on Science and Technology, Environment and Forests in 2017.
- The Supreme Court also appointed a Technical Expert Committee (TEC) to study the GM crops.

#### Observations made by these committees:

- **The two standing committees unanimously highlighted major weaknesses in the regulatory system** and called for utmost caution before releasing GM food.
- The Committee on Science and Technology, Environment and Forests made a specific reference to GM mustard, and asked the government to conduct a thorough, independent, and transparent assessment of long-term biosafety, environmental risk and socio-economic impacts.
- In 2013, **five out of six members of the TEC also identified serious shortcomings in the safety assessment of GM crops.**
- **They found HT crops are "completely unsuitable in the Indian context"** and warned of serious harm to the environment, rural livelihoods and sustainable agriculture if they were released.
- Therefore, these observations raise concerns for release of any HT crop and emphasize the need for comprehensive regulatory strengthening before approving GM food.

### Measures are being taken by the government in promoting GM crops:

- Despite the widespread political and technical consensus against HT crops, **the Indian government is proceeding with GM mustard in a manner that disregards both science and law.**
- **For instance,** it has not placed the full biosafety dossier on GM mustard in the public domain, despite the terms of the Right to Information Act and a declaration to that effect by the Environment Ministry's Genetic Engineering Appraisal Committee.
- Even in the recent hearing of the SC, **the government has argued that GM mustard should not be considered HT because the objective for developing it was to improve yields.**
- However, from the science of biotechnology and ecology perspective, there is no doubt that GM mustard is an HT crop.

### Future of GM:

- **Instead of engaging with the constitutional issues involving public health, environmental protection and agricultural livelihoods,** the government is misleading the SC by presenting irrelevant facts in the support of GM crops.
- Hence, if the Supreme Court allows GM mustard to go through, it will likely pave the way for the release of other HT crops such as cotton, rice, and maize.

### UPSC Prelims point: GM Crops

### 6. Indian group proposes radical new way to settle universe expansion dispute

#### Context:

Researchers from the International Centre for Theoretical Sciences (ICTS), Bengaluru, the Inter-University Centre

for Astronomy and Astrophysics (IUCAA), Pune, and University of California, Santa Barbara (UCSB), have proposed a new way to determine the Hubble constant.

#### About Hubble Constant:

- The Hubble constant is a unit that describes how fast the universe is expanding at different distances from a particular point in space.
- It is one of the keystones in our understanding of the universe's evolution.
- It gets its name from Edwin Hubble who was first to calculate the constant from his measurements of stars in 1929.

#### How is Hubble Constant measured:

- **Two details are required to calculate the value of the Hubble constant** 1) distance between the observer and astronomical objects and 2) velocity at which these objects are moving away from the observer as a result of the expansion of the universe.
- So far, scientists have used three methods to get these details:
  - **First method:** They compare the observed brightness of a stellar explosion, called a supernova, with its expected brightness to figure how far away it could be. Then they measure how much the wavelength of the light from the star has been stretched by the expansion of the universe - i.e. the redshift - to figure how much it's moving away.
  - **Second method:** They use changes to the cosmic microwave background (CMB) - radiation leftover from the Big Bang event - to estimate the Hubble constant.
  - **Third method:** They use gravitational waves, ripples in spacetime produced when massive astronomical objects - like neutron stars or black holes - collide with each other.

- **Drawbacks with these methods:** Measurements from the first method have reported a Hubble constant about two units higher than the one derived by the second method. The third method hasn't yet matured enough to provide a precise measurement.

### The new method proposed by scientists to understand universe expansion rate:

- The new method proposed by the researchers uses **gravitational lensing**.
- Gravitational lensing is when massive objects in space can warp space time. This bends all kinds of waves that travel near the objects, distorting them. The phenomenon is typically used to describe when light waves are bent.
- As we have seen before, sometimes, extreme lensing of some objects can make them visually appear as multiple objects in the sky. Just like that, lensing can produce multiple copies of the same gravitational signal that can reach Earth at different times.
- The researchers believe that the delays between the signals could be used to calculate the universe's expansion rate.

**Note:** Scientists are yet to find lensed gravitational waves but there's good reason to believe that they will in the next two decades. This is because the upcoming generation of gravitational wave detectors are expected to be able to sense about a million gravitational waves a year.

### UPSC Prelims point: Gravitational lensing & Hubble constant

### 7. Over 60 species of plants that can survive extreme dehydration found in Western Ghats

#### Context:

Researchers have recently discovered 62 **Desiccation-tolerate vascular (DT)**

**plant** species in India's Western Ghats.

#### Desiccation-tolerate vascular plant species:

- Desiccation-tolerant vascular (DT) plants are those plant species that are able to withstand extreme dehydration.
- They can lose up to 95% of their water content and can revive themselves once water is available again.
- This unique ability allows them to survive in harsh, arid environments that would be uninhabitable for most other plants.
- These plants are found in both flowering and non-flowering species and in both temperate and tropical climates.
- The global population of these species ranges between 300 and 1,500.

#### Desiccation-tolerate vascular(DT) plant species in India:

- Indian desiccation tolerant plants are primarily found in forest rock outcrops and partially shaded tree trunks.
- Ferricretes (a hard, erosion-resistant layer of sedimentary rock) and basaltic plateaus (plateaus produced by volcanic activity) seemed to be the preferred habitats.
- A study has recently found 62 desiccation-tolerant vascular plant species in Western Ghats. Of these, 16 are endemic to India while 12 are exclusive to Western Ghats outcrops.
- Among these discovered, nine genera of DT plants are reported as new also in a global perspective. They are identified as Pyrrosia, Aleuritopteris, Corallodiscus, Arundinella, Bhidea, Bothriochloa, Danthonidium, Dimeria and Glyphochloa.

#### The significance of this discovery:

- The discovery of the desiccation-tolerant (DT) vascular plants has potential applications in agriculture. For in-



stance:

- Desiccation-resistant vascular plants can be used particularly in areas where water is scarce.
- Desiccation-resistant vascular plant genes can be used to develop a high temperature tolerant crop variety to boost climate resilience.

## 8. What are Bacteriophages, the 'good viruses' that fight bacteria?

### Context:

Scientists are exploring the potential of bacteriophages to treat bacterial infections that are resistant to antibiotics.

### About Bacteriophages:

- A bacteriophage or phage is a virus that infects bacteria.
- They were discovered independently by Frederick W. Twort in Great Britain (1915) and Félix d'Hérelle in France (1917).
- D'Hérelle coined the term bacteriophage, meaning "bacteria eater," to describe the agent's bactericidal ability.

### How do Bacteriophages kill bacteria:

- Bacteriophages are harmless to human cells as they do not recognize them as their bacterial prey.
- They work by hunting down bacteria and attaching themselves to the surface of a bacterial cell, before injecting viral DNA material into the cell.
- The viral DNA then replicates inside the bacteria, sometimes by borrowing the DNA replication hardware of the bacteria.
- Once all the bacteria are lysed (dead), they'll stop multiplying. Like other viruses, phages can lay dormant (in hibernation) until more bacteria show up.

### About Phage Therapy:

- Phage therapy is the therapeutic use of bacteriophages for the treatment of bacterial infections.
- **Advantages of Phage Therapy:** It has reduced side effects and reduced risk of the bacteria developing resistance, since bacteriophages are much more specific than antibiotics.
- They are typically harmless not only to the host organism but also to other beneficial bacteria such as the gut microbiota, reducing the chances of opportunistic infections.
- **Disadvantages of Phage Therapy:** Disadvantages include the difficulty of finding an effective phage for a particular infection; a phage will kill a bacterium only if it matches the specific strain.

### UPSC Prelims point: Bacteriophage

## 9. Invasive weed threatens elephant habitats in Tamil Nadu

### Context:

An Invasive aquatic weed named "Ludwigia peruviana" is threatening elephant habitats in Tamil Nadu and reviving the risk of human-elephant conflicts in the region.

### About Ludwigia peruviana:



Source: Wikipedia

- Ludwigia peruviana is an aquatic weed native to some countries in Central and South America, including Peru.
- It is usually found in wetlands, swamps, marshes and along the edges of lagoons and slow-moving waterways (sometimes also floating on the water surface).

### Why is Ludwigia peruviana an invasive plant:

- Ludwigia peruviana is among the **22 priority invasive plants in Tamil Nadu**. It was probably introduced as an ornamental plant for its tiny yellow flowers.
- However, it is now challenging the existence of local vegetation in various swampy areas.
- It is a fast growing aquatic weed. It forms dense colonies in slow-moving and static waterways.
- This impacts the water flows in waterways, outcompetes native plants, reduces food and shelter for fish and other native aquatic animals and decreases light and water temperature.
- Moreover, unlike other invasive plants, Ludwigia poses a unique challenge as it grows in swamps and there is little scope to use machinery which may further destroy the ecosystem.
- Even if Ludwigia is pulled out manually, the soft plant easily breaks and it spreads again from the root or broken stems that fall in the swamp.

### How is Ludwigia peruviana impacting elephant habitats?

- **In Tamil Nadu**, Ludwigia peruviana has limited the growth of grass and native plants that is a source of food for elephants and other animals including gaur. This has revived the risk of human-elephant conflicts in the region.

### UPSC Prelims point: Ludwigia peruviana & Invasive plants

## 10. Will generic supply of bedaquiline be accessible?

### Context:

Johnson & Johnson's patent on bedaquiline has expired recently. This long-awaited expiry will allow generic manufacturers to supply the drug, but J&J appears intent on maintaining its monopoly over the bedaquiline market.

### What is Tuberculosis:

- Tuberculosis (TB) is an infectious airborne bacterial disease caused by Mycobacterium tuberculosis. It most commonly affects the lungs but can also damage other parts of the body.

### The threat from Tuberculosis:

- According to WHO, Tuberculosis was the world's deadliest infectious disease before COVID-19 swept the world.
- Each year, nearly half a million people develop drug-resistant TB and nearly 10.4 million people develop drug-sensitive TB.
- One-third of the world's population has latent TB, a version of the disease that can turn active as immunity falls.
- Nearly 2.8 million TB patients, the most in the world, live in India making it a national public health emergency.

### About Bedaquiline:

- Bedaquiline is a medication used to treat active tuberculosis. Specifically, it is used to treat multidrug-resistant tuberculosis (MDR-TB) along with other medications for tuberculosis.
- It was developed by Janssen Pharmaceutical (a subsidiary of J&J) around 2002.
- Several of the phase I and II clinical trials of the drug were sponsored by public and philanthropic organizations such as the U.S. National Institutes of Health (NIH), National Institute of Al-

lergy and Infectious Diseases, and the TB Alliance.

- However, J&J has claimed sole ownership of it, protected by its aggressive patenting strategies.

### What has Johnson & Johnson (J&J) done:

- J&J has filed secondary patents over bedaquiline till 2027, which were granted in 66 low-and middle-income countries.
- It includes 34 countries with high burden of TB, multidrug-resistant TB (MDR-TB), and TB/HIV. Over the past week, J&J has faced public outrage for seeking to extend its patent on bedaquiline.
- However in India, the Indian Patent Office has rejected J&J's secondary patent which would have extended its monopoly for four more years. Indian manufacturers will now be able to supply affordable, quality assured generic versions of bedaquiline in India as the primary patent expired.
- It is estimated that, with the introduction of competition from India, the price of bedaquiline will reduce in the range of \$48-\$102 for a six-month treatment course.

### UPSC Prelims point: Tuberculosis and bedaquiline

### 11. Jammu to pioneer India's first Cannabis Medicine Project

#### Context:

India's first Cannabis Medicine Project is going to be set up in Jammu.

#### Cannabis Research Project:

- **Initiative of:** Council of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu.
- **Type:** The project is under public-private

partnership (PPP) with a Canadian firm.

- **Purpose of the project:** To produce export quality drugs meant for different kinds of neuropathies, diabetic pains etc.
- To spread awareness that this substance of abuse has diverse medicinal uses especially for the patients suffering from malignancies and other diseases.
- **Significance:** The project has the potential to produce medicines that are currently imported from foreign countries, thereby promoting indigenous production and reducing dependency on external sources.

#### About Cannabis:

- Cannabis is a generic term used to denote the several psychoactive preparations of the plant *Cannabis sativa*. The major psychoactive constituent in cannabis is delta 9 tetrahydrocannabinol (THC).
- The Mexican term 'marijuana' is frequently used in referring to cannabis leaves or other crude plant material in many countries.
- Cannabis is by far the most widely cultivated, trafficked and abused illicit drug. Half of all drug seizures worldwide are cannabis seizures.
- About 147 million people, 2.5% of the world population, consume cannabis (annual prevalence) compared with 0.2% consuming cocaine and 0.2% consuming opiates.

#### Cannabis in India:

- The central law that deals with cannabis (weed or marijuana) in India is the Narcotic Drugs and Psychotropic Substances Act, 1985.
- The NDPS Act prohibits the sale and production of cannabis resin and flowers, but the use of leaves and seeds of

the cannabis plant is permitted, with the states having the power to regulate and form the state rules for it.

- For instance, Odisha is a state in which weed is legal in India and people commonly use 'chillums' to smoke weed within the state's territory. Uttarakhand is the first state in India to allow commercial cultivation of Hemp.

## 12. ISRO to launch PSLV-C56 carrying Singapore's new imaging satellite

### Context:

Indian Space Research Organisation (ISRO) will be launching the Polar Satellite Launch Vehicle (PSLV-C56) mission.

### About Polar Satellite Launch Vehicle (PSLV-C56) mission:

- PSLV-C56 will lift off from the Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh.
- It will carry Singapore's DS-SAR satellite and six other satellites.
- DS-SAR satellite** has been developed under a partnership between DSTA, representing the Government of Singapore and ST Engineering.
- The satellite carries a Synthetic Aperture Radar (SAR) payload developed by Israel Aerospace Industries (IAI).
- Once operational, the DS-SAR will support the satellite imagery requirements of various agencies within the Singapore government.

**Six other satellites:** The six other satellites include **1) VELOX-AM**, a 23 kg technology demonstration micro-satellite **2) ARCADE**, an experimental satellite **3) SCOOB-II**, a 3U nanosatellite with a technology demonstrator payload **4) NuLloN** by NuSpace, an advanced 3U nanosatellite enabling seamless IoT con-

nectivity in both urban and remote locations **5) Galassia-2**, a 3U nanosatellite set to orbit at low earth orbit and **6) ORB-12 STRIDER**, a satellite developed under international collaboration.

### UPSC Prelims point: PSLV

## 13. OneWeb to set up India's first 'satellite network portal site' in Gujarat: What is the project, its significance?

### Context:

The Gujarat government's Department of Science and Technology (DST) has signed a Memorandum of Understanding with One Web India Communications Pvt Ltd to establish a 'satellite network portal site' in Mehsana, Gujarat.

### About OneWeb:

- OneWeb Network Access Associates Limited is a communications company that aims to build broadband satellite Internet services. The company is headquartered in London.
- It is powered by a constellation of 648 low Earth orbit (LEO) satellites.
- It enables high-speed, low latency connectivity for governments, businesses and communities everywhere around the world.
- India's Bharti Enterprises is a major investor in OneWeb group.

### The MoU signed between the Gujarat government and One Web:

- OneWeb will set up a 'satellite network portal sites' in Mehsana, Gujarat.
- OneWeb currently has 648 satellites in LEO orbiting at 1,000-1,200 km making 13 orbits per day, covering the entire globe.
- The portal site will serve as a signal and data downlink and uplink terminal or base station on the ground, an intermediary for data transmission through



satellite tracking antenna systems.

- With this, the portal site will aim to provide affordable connectivity to various sectors including the government, offering continuous and secure satellite internet at affordable rates nationwide.
- The setting up of this portal site will require a slew of regulatory approvals from the Indian National Space Promotion and Authorisation Centre (IN-SPACe) and spectrum allocation from the Telecom Regulatory Authority of India (TRAI).

#### Why was Gujarat chosen for the satellite network portal site:

- The decision to set up the satellite network portal site in Gujarat was based on geographical and business interests, with Gujarat's long coastline making it suitable for maritime sector coverage.

#### 14. Centre withdraws DNA Bill: What it says, and what are the objections against it

##### Context:

Government has withdrawn The DNA Technology (Use and Application) Regulation Bill 2019 from the Lok Sabha.

##### Significance of DNA technology:

- DNA analysis is **extremely useful and accurate**. DNA analysis can ascertain the identity of a person from his/her DNA sample. The DNA sample can also establish biological relationships between individuals. For example, A hair sample or blood stains from clothes taken from a scene of the crime can clearly establish whether the DNA in the sample belongs to the suspected individual or not.
- As a result, DNA technology is being increasingly relied upon in **investigations of crime, identifica-**

**tion of unidentified bodies, or in determining parentage, etc.**

#### DNA Technology (Use and Application) Regulation Bill, 2019:

- The DNA Technology (Use and Application) Regulation Bill, 2019 was introduced in Lok Sabha in 2019.
- The Bill provides for the regulation of use of DNA technology for establishing the identity of certain persons.
- The Bill was referred to the Department-related Parliamentary Standing Committee on Science and Technology. The committee submitted its report in 2021 recommending several changes in the draft.

#### The key provisions of the Bill:

- The Bill mentions the situations under which DNA Data will be used. Under the Bill, DNA testing is allowed only in respect of 4 matters. They are,
  - o For offences under the Indian Penal Code, 1860.
  - o Civil disputes and other civil matters related to paternity suits, or to identify abandoned children.
  - o Offences under certain special legislations like Immoral Trafficking prevention Act, MTP Act etc.
  - o Medical negligence or unidentified human remains.
- While preparing a DNA profile, bodily substances of persons may be collected by the investigating authorities. There are certain conditions mentioned under which the DNA will be collected.
  - o Like, For arrested persons, if the offence carries a punishment of up to seven years. Consent is needed to collect the DNA sample.
  - o If the offence carries more than seven years of imprisonment or death, consent is not required.

- The Act establishes the DNA Data Bank. The data banks will be established at the National and regional level. At the regional level, the data bank will be established for every state or two or more states.
- The Bill states that the criteria for entry, retention or removal of the DNA profile will be specified by regulations. The Bill provides that the information contained in the crime scenes will be retained.
- The Bill also establishes a DNA Regulatory Board. This DNA Regulatory Board will supervise the DNA Data Banks and DNA Laboratories. The Secretary, Department of Biotechnology, will be the ex officio Chairperson of the Board.
- The Bill also has a provision of mandatory accreditation from the Board to establish DNA Laboratories in India. The Board may revoke the accreditation for reasons such as failure to undertake DNA testing or the non-compliance of DNA Lab with the conditions attached to the accreditation.

### Key concerns with the bill:

- **Lack of privacy and dignity:** Privacy concerns were paramount, especially with the establishment of DNA data banks and the possibility of misuse or mishandling of sensitive personal information.
- **Data storage and security:** Clear guidelines were required for the secure storage of DNA data, particularly in medical or research laboratories.
- **Inadequate consent requirements:** The absence of explicit consent protocols for civil cases undermined individual agency and rights.
- **Misuse of DNA profiling:** The potential linkage with surveillance systems raised concerns about possible misuse

of DNA profiling data for caste-based or community profiling.

- **Lack of clarity on data storage:** The scope of data that may be stored in the umbrella database required clearer guidelines to ensure data privacy and protection.
- **Insufficient guidelines for combining DNA technology with other Tools:** The bill needed specific guidelines on the appropriate use of DNA technology in conjunction with other tools in the justice system to prevent potential miscarriages of justice.

### Why has the DNA Technology (Use and Application) Regulation Bill, 2019 been withdrawn now?

- The Bill has been withdrawn as the main provisions of the Bill have already been enacted as part of another law, the Criminal Procedure (Identification) Act that was passed by both houses of Parliament in 2022.

### UPSC Prelims point: DNA Technology

#### 15. Moon missions offer tough tests - landers, the toughest

##### Context:

According to the data, historically 40% of moon missions have failed and 60% of lander missions have been unsuccessful.

The data on the success rate of Moon Missions:

##### Moon Missions:

Historically, over 40% of moon missions have failed.

- If we consider only those missions which involved a robotic lander (a spacecraft performing a controlled landing on the lunar surface), the failure rate sharply increases to over 60%.
- The failure rate of 'sample return' mis-

sions, which collect samples from the moon and bring them back to the earth is even higher at 67% as such missions are complex and riskier.

- Impactor missions, in which a spacecraft or a part of it is deliberately made to collide with the moon in order to study the resulting crater or dust plume, also have a high failure rate of 56.3%.

### Chandrayaan 2 Mission:

- Indian Space Research Organisation (ISRO) Chandrayaan 2 mission was launched in 2019. The lander of Chandrayaan 2 'Vikram' lost contact with the earth and went blank minutes before lunar touchdown. The mission of the lander and the rover 'Pragyan' was declared a failure. The orbiter mission was a success as the orbiter was placed in the intended orbit.

### Total number of lunar missions completed by decade:

- The 1950s had a very high failure rate across mission types. All the orbiter missions failed. The overall failure rate was 84.6%.
- The 1960s saw the highest number of moon missions (74) for any decade thus far. But the overall failure rate remained relatively high at 62.2%.
- The 1970s were much better with 40 missions and just a 25% failure rate. In general, the number of moon missions dropped in the following decades.
- The 2000s stood out as all the missions succeeded. The 2010s also had a much lower failure rate of 22% But the number of unsuccessful missions went up again in the following decade and the overall failure rate rose to 47.1%.

## 16. Scientists unveil method to power devices using air humidity

### Context:

Researchers at the University of Massachusetts Amherst have successfully developed a technology called Hygroelectricity.

### About Hygroelectricity:

- Hydroelectricity is a technology that can harvest electricity from nothing but humid air.
- This technology was first explored by physicist Nikola Tesla and has been the subject of scientific inquiry for decades.

### How does Hygroelectricity works:

- The key to harvesting electricity from humid air lies in a tiny device comprising two electrodes and a thin layer of material filled with nanopores.
- These nanopores, each less than 100 nanometres in diameter, allow water molecules from the air to pass through the device.
- As these molecules move from an upper chamber to a lower chamber, they interact with the edges of the nanopores, leading to a buildup of electric charge imbalances between the chambers.
- This process effectively transforms the device into a miniature battery, generating continuous electricity.

### Advantages of Hygroelectricity:

- The advantage of Hygroelectricity is its versatility. Unlike other renewable energy sources such as solar and wind, air humidity is continuously available making it a sustainable reservoir of energy.
- Moreover, this technology can be applied to a wide range of materials including wood and silicon, as long as they possess the required nanopores. This breakthrough dramatically increases its potential for broad deployment and scalability.

**Challenges to Hygroelectricity:**

- The concept of generating electricity from air humidity is both promising and fascinating.
- But some challenges lie ahead such as the nanopore device used by scientists can only produce electricity equivalent to a fraction of a volt. Hence, scaling up the technology to meet practical energy demands is a significant hurdle.

**UPSC Prelims point: Hygroelectricity****17. 2D nanoflakes of material extracted from iron ore can protect sensitive optical equipment from light-induced damage****Context:**

- Researchers in India have developed a new and highly efficient optical limiter using a novel 2D material, 'hematene'.
- They found that 2D nanoflakes of hematene are capable of withstanding and acting as shield from high laser intensities.
- Hence, it could be used to make devices called optical limiters that can protect sensitive optical equipment from light-induced damage.

**Nanoflakes:**

- Nanoflakes are a type of nanomaterial that consists of thin, two-dimensional (2D) flakes with nanoscale dimensions. These flakes typically have a high aspect ratio, meaning their length is much greater than their thickness.
- Nanoflakes can be made from a variety of materials, including metals, metal oxides, semiconductors, and other types of nanomaterials.
- Nanoflakes have attracted significant attention in various fields of science and technology, such as nanoelectronics, photonics, catalysis, energy storage,

and sensing applications.

- Their large surface area-to-volume ratio and unique electronic properties make them promising candidates for enhancing the performance of many devices and technologies.

**About Hematene:**

- Hematene refers to a nanomaterial derived from hematite, which is an iron oxide mineral. Hematite has a reddish-black color and is a common mineral found in nature.
- Hematene is created by exfoliating, or peeling off, thin layers of hematite to obtain a two-dimensional (2D) nanomaterial with nanoscale thickness.
- The unique properties of Hematene as a 2D nanomaterial, make it interesting for various applications in nanotechnology, such as in electronics, sensing and energy storage.

**UPSC Prelims point: Hematene & Nanoflakes****18. Nature inspires breakthrough achievement: Hazard-free production of fluorochemicals****Context:**

Researchers at the University of Oxford have achieved a groundbreaking breakthrough by developing a new technique to produce **fluorochemicals** without using hazardous hydrogen fluoride (HF) gas

**About Fluorochemicals:**

- Fluorine is a highly reactive element that comes from a calcium salt called calcium fluoride, or fluorspar.
- Fluorine is used to make fluorochemicals, which in turn are used to produce plastics, agrochemicals, lithium-ion batteries and drugs.



## The process of making Fluorochemicals and its drawbacks:

- **Process:** Fluorspar is mined and then treated with sulphuric acid at a high temperature to release hydrogen fluoride (HF). HF is then made to react with other compounds to create fluorochemicals.
- **Drawback:** A major downside of this process is that HF is an extremely poisonous and corrosive liquid that irritates the eyes and respiratory tract even at low concentrations. It also requires special transportation and storage requirements.
- Moreover, despite stringent safety regulations, HF spills have occurred numerous times in the last decades, sometimes with fatal accidents and detrimental environmental effects.

## Researchers developed to overcome this drawback in making Fluorochemicals:

- Researchers took inspiration from how the human body makes bones and teeth through calcium phosphate biomineralisation.
- Based on this, they developed an innovative process which involved grinding fluorspar with potassium phosphate in a ball-mill. While fluorine is very reactive, calcium atoms prefer phosphorus even more, so the milling created calcium phosphate and another compound with fluorine atoms. They called this process **Fluoromix**.
- When this Fluoromix was reacted with organic compounds, it could create around 50 fluorochemicals with up to 98% yield.
- **Significance:** This new method has the potential to enhance safety and environmental impact, streamline the supply chain and reduce energy demands in the rapidly expanding global fluorochemical industry.

## UPSC Prelims point: fluorochemicals

### 19. Discovered: A mechanism that quietly removes unfit cells before you're born

#### Context:

Scientists have found that cells that don't express a particular gene are destroyed before an embryo starts to develop.

#### Non committed cells:

- In the early stages of the human embryo, before it has implanted in the mother's womb, the cells arrange themselves in a particular way.
- A blob of cells gathers towards one side of the embryo and the other cells arrange themselves around this blob. This blob is called the **inner cell mass**. It contains cells with the ability to make all the other types of cells in the human body – i.e. the cells in this blob are **pluripotent**.
- Within the inner cell mass, researchers in 2016 had discovered a novel group of cells called **non-committed cells**.
- These non-committed cells did not participate in the later stages of embryo development and appeared to be eliminated early on compared to the other inner cell mass cells, which contributed to forming the developing embryo.

#### Why do these non committed cells die so young:

- A study has found that human embryonic stem cells express a gene called **HERVH**, a virus-like gene that's important in maintaining pluripotency.
- Most of the inner cell mass cells also express HERVH – but not the non-committed cells that eventually die.
- The non committed cells actually express **transposons also called "jumping genes"**. These jumping genes are

dangerous little pieces of DNA that can insert themselves into different regions of the genome, damaging it and leading to cell death. The DNA damage caused by the transposons leads to these cells dying out early

- On the other hand, HERVH actually ends up protecting the cells from the damage inflicted by the jumping genes, kickstarting a protective mechanism that prevents the transposons from getting expressed in most cells.
- But the non-committed cells that don't express HERVH are killed off by the uncontrolled transposon activity.

## 20. What is Urea Gold launched by PM in Rajasthan

### Context:

The Prime Minister has launched "Urea Gold" during an event in Rajasthan.

### About Urea Gold:

- Urea Gold is a new variety of Urea fertilizer that is coated with sulphur. It is being introduced to address the Sulphur deficiency in soil and reduce input costs for farmers.

### The benefits of Urea Gold compared to other varieties of Urea:

- **Firstly**, Urea Gold facilitates a gradual release of nitrogen, thereby enhancing its availability and uptake by crops.
- **Secondly**, the inclusion of humic acid in Urea Gold further extends its lifespan as a fertilizer.
- **Thirdly**, it is more economical and efficient than neem-coated urea.
- **Fourthly**, Urea Gold not only substitutes traditional urea consumption but also reduces overall fertilizer usage.
- According to a report, 15 kg of Urea Gold provides comparable benefits to 20 kg of conventional urea, making it a

more efficient and effective choice for farmers.

- **Fifthly**, it will save input costs for the farmers and also raise incomes for farmers with enhanced production and productivity.

### UPSC Prelims point: Urea Gold

## 21. Worms revived after 46,000 years in Siberian permafrost

### Context:

Scientists have revived a worm that was frozen 46,000 years ago in Siberian Permafrost.

### What did the scientists discover?

- In 2018, Scientists from Russia's Institute of Physicochemical and Biological Problems in Soil had discovered two species of microscopic nematode in Siberian Permafrost.
- These worms have been frozen since the late Pleistocene era, which is around 46,000 years ago.
- After analyzing the specimens, they've claimed at least one is from an entirely new species, which they have called them as **Panagrolaimus kolymaensis**.
- Scientists revived one of the worms by rehydrating them with water and took other worms for further analysis.

### How did these worms survive 46,000 years:

- Many animals like nematodes, and more famously, tardigrades, can survive extreme conditions by entering a dormant state called "**cryptobiosis**".
- Organisms in a cryptobiotic state can survive the complete absence of water and oxygen and withstand other extreme conditions including heat and cold in a "state between life and death."
- The scientists also tested the hardiness of the ancient worms by mildly drying

them in the laboratory. When they did that, the worms produced a sugar called **trehalose**, which might be helping them survive harsh desiccation (drying) and freezing.

### Significance of this study:

- This study increases the longest documented cryptobiosis period in nematodes by tens of thousands of years.
- Further, this study also shows how animals can adapt to habitat change caused by climate change at a molecular level and survive despite changing weather patterns.

## 22. A supermassive black hole is firing high-energy particle jet towards Earth

### Context:

- NASA's IXPE Mission has unveiled several mysteries of the Supermassive Black Hole Markarian 421.
- It has found that Markarian 421 is firing a jet of high-energy particles aimed directly at Earth.

### About Markarian 421:

- Markarian 421 is a supermassive black hole. It is about 400 million light-years away from the earth.
- It is located in the constellation Ursa Major.

### What is the IXPE Mission?

IXPE observatory is a joint effort of NASA and the Italian Space Agency

### About Supermassive Black Hole:

- Supermassive black holes are extremely large and incredibly dense regions in the centers of most galaxies, including our own Milky Way galaxy.
- They are characterized by their immense gravitational pull, which is so strong that nothing, not even light, can escape from them once it crosses a point

called the event horizon. These black holes have masses that range from hundreds of thousands to billions of times that of our sun.

- The origin of supermassive black holes is not entirely understood, but they are thought to have formed and grown through a combination of processes, including accretion of gas and the merging of smaller black holes over billions of years.
- Supermassive black holes are associated with powerful phenomena, such as active galactic nuclei (AGNs) and quasars, where vast amounts of energy are released as material falls into the black hole and emits intense radiation
- Studying supermassive black holes helps astronomers better understand the evolution of galaxies, the interactions between black holes and their surrounding environments, and the fundamental nature of gravity and space-time in extreme conditions.

### UPSC Prelims point: Markarian 421

## 23. Room-temperature superconductor: Is the Holy Grail within grasp?

### Context:

Korean researchers have claimed to have developed a superconductor that can operate at room temperature and ambient pressure.

### Superconductor:

- A superconductor is a material that achieves superconductivity, which is a state of matter that has no electrical resistance and does not allow magnetic fields to penetrate. An electric current in a superconductor can persist indefinitely.
- Superconductors have important applicability in our daily lives, too. In 1933, Walther Meissner and Robert

Ochsenfeld discovered that superconductors are also perfect diamagnets (they repel magnetic fields, known as the Meissner effect), making them ideal for magnetic resonance imaging (MRI).

- However, superconductivity can only typically be achieved at very cold temperatures.
- Researchers are now trying to find and develop superconductors that could operate at room temperature.

### How will the room temperature superconductors help?

- The temperature of a superconductor known as the critical temperature, is typically below 10 Kelvin (-263 degrees Celsius). Room temperature is 20-22°C.
- Hence, superconductors at room temperature can cut the cost of electricity grids, computer chips, magnets for maglev trains, energy-storage devices and fusion reactors by saving electricity and money on coolants.

### What have the researchers developed?

- Researchers have claimed to have developed a superconductor called **LK-99**, that works at room temperature and ambient pressure.
- LK-99 is a mix of powdered compounds of lead, oxygen, sulphur and phosphorus. When heated at very high temperatures, it forms a dark grey solid.
- If these results can be replicated in other labs, it could be a monumental discovery.
- However, other researchers are skeptical as this research is not peer-reviewed and the results need to be replicated by others.

### How can computing get benefitted from this research?

- Computers process information with bits – ones and zeroes. But two bits can only represent one of four possible states at one time.
- Superconductors are the building

blocks of quantum computers that use quantum bits, or qubits, to process ones and zeroes at the same time – it's like running four computers in one. The physical qubits are typically super-cooled to avoid errors.

- This research could get them to work at room temperature and ambient pressure without the need for elaborate cooling systems.

### UPSC Prelims point: Superconductors

### 24. BSIP scientists discover new species of flower from Sikkim

#### Context:

Scientists from the Botanical Survey of India (BSI) Prayagraj Centre have discovered a new plant species in the state of Sikkim named *Pedicularis Revealiana*.

**Note:** Sikkim is renowned for its remarkable biodiversity. This state alone accounts for 45 percent of the total plant diversity in the Indian Himalayan region.

#### About *Pedicularis Revealiana*:

- *Pedicularis Revealiana* is a plant belonging to the *Pedicularis* species group. It is commonly known as a perennial herb.
- This plant thrives in remote forests, which remain snow-covered for most of the year.
- It is a hemi-parasitic species meaning it is partially parasitic, setting it apart from all other known *Pedicularis* species.
- This plant not only produces its own food but also demonstrates the remarkable ability to draw nutrients from the roots of neighboring trees and plants.

### UPSC Prelims point: *Pedicularis Revealiana*

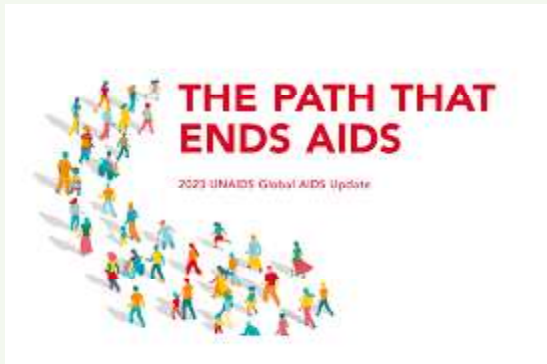


# SOCIAL ISSUES

## 1. Express View on UNAIDS report: AIDS and inequality.

### Context:

The challenges in eradicating AIDS by 2030.



### About current AIDS data:

- HIV affects 70% of people globally, but treatment suppresses the virus in most cases.
- “**Hyper-masculinity**” inhibits many men from seeking HIV testing or treatment.
- Women and children often do not receive optimal HIV treatment, with only 67% and 46% achieving viral suppression, respectively.
- United Nations Member States committed to implementing a bold agenda to end the AIDS epidemic by 2030.

### The major constraints in achieving the target of eliminating AIDS by 2030:

- **Poverty and marginalization:** Poor and marginalized communities often lack access to the necessary healthcare and are subjected to stigma. As a result, HIV patients from these communities continue to suffer and are left behind in the fight against AIDS.
- **Gender inequality:** Gender inequality

is another major constraint. Men often avoid getting tested due to societal pressure, also known as “**hyper-masculinity**”, hindering early diagnosis and treatment. Meanwhile, women, particularly in low-income regions, do not receive optimal HIV treatment. According to UNAIDS, viral suppression is seen in 76% of male patients but only 67% of female patients.

- **Insufficient funding:** Despite increasing overall health budgets, lower and middle-income countries heavily depend on external funds for AIDS related expenses. These funds are insufficient to effectively combat AIDS, **especially in parts of West Asia and Africa.**
- **Lack of prevention programs:** There’s a significant gap in HIV prevention programs, especially for children and young women. The viral suppression rate amongst children is just 46%. **In sub-Saharan Africa**, only 40% of districts with high HIV incidence are covered by dedicated prevention programs.
- **Drug shortages:** Countries like India have witnessed patient protests due to shortages in essential drugs. This indicates the urgent need for improved supply chains and local manufacturing capabilities to ensure the continuous availability of AIDS medication.

### Way forward:

- Efforts should focus on addressing poverty and gender inequality to improve access to AIDS healthcare.
- Men should be encouraged to get HIV testing, and women’s treatment needs to be optimized.
- Funding for AIDS in lower and middle-income countries needs to be increased.

Prevention programs, particularly for children and young women, should be expanded.

Finally, governments must address drug shortages, possibly by boosting local production of AIDS medications.

### Prelims point:UNAIDS report

## 2. First, Make All Polygamy Illegal.

### Context:

Instead of focusing on a full Uniform Civil Code (UCC) in India, attention should be given to banning polygamy first. They believe dealing with other issues can come after polygamy is made illegal across all communities.



### The Polygamy should be a real target in the UCC debate:

**Prevalence in communities:** Even though the overall percentage is low, polygamy still exists in various Indian communities. For instance, about 1.9% of Muslims and 1.3% of Hindus practice polygamy.

**Legal exceptions:** Certain communities, like Scheduled Tribes and Muslims, are allowed to practice polygamy due to exemptions in the law. This discrepancy makes polygamy an important focus in the UCC debate.

**Impact on gender justice:** Addressing polygamy first can lead to improved gender justice. By banning polygamy, matters of inheritance and women's rights can be better addressed, as demonstrated by the Hindu Succession Act following the Hindu Marriage Act.

**Staged reforms:** Tackling polygamy before other UCC issues allows for a

systematic and sequential approach to social reform. This strategy proved effective with the Hindu Marriage Act and the Hindu Succession Act.

**Minority rights protection:** Focusing on banning polygamy prevents its misuse as a shield for other UCC issues. This way, the rights of the affected minorities, albeit small in number, can be better protected.

### The challenges in implementing a full-fledged UCC:

**Potential disruption to traditional practices:** Implementing a complete UCC might disturb long-standing cultural practices. Some communities, like certain Scheduled Tribes, follow traditions like matrilineal descent or ultimogeniture, where the youngest sibling inherits property.

**Taxation complications:** The introduction of a UCC could impact the Hindu Undivided Family as a tax category. This might not be favorable for millions of Hindus who currently enjoy certain tax benefits under this category.

**Multiplicity of socio-cultural norms:** India is a diverse country with varied socio-cultural norms across communities. Harmonizing these into a UCC is a significant challenge due to resistance to change and the need to respect cultural diversity.

**Reluctance in certain communities:** There could be resistance from communities that are not ready for certain aspects of the UCC, such as the proposed ban on polygamy. As pointed out, only 1.9% of Muslims and 1.3% of Hindus practice polygamy, but the issue has been contentious in the UCC debate.

**Balancing reform and respect for diversity:** A full UCC must strike a delicate balance between implementing necessary social reforms and respecting the cultural diversity of India's numerous communities. This makes the process

of establishing a full-fledged UCC quite challenging.

**Mains point: Uniform Civil Code (UCC)-The Polygamy.**

### 3. Childline has worked for suffering children - government doesn't need to take over.

#### Context:

The Centre has decided to take over the child helpline service operated by NGOs since its inception in 1998.

#### The government 's approach towards protection of vulnerable people changed over time:

- The prevailing viewpoint was that the care and protection of the vulnerable was not primarily a law-and-order issue.
- However, there was more emphasis on law enforcement. It ignored the fact that crime is the result of dysfunctional society, and interaction between the individual and his environment.
- **The report of the All-India Committee (1980-83) on Jail Reforms** had nudged the government to evolve a correctional strategy. It led to the creation of a Ministry of Welfare, which was later renamed Ministry of Social Justice and Empowerment.
- The committee recommended a **holistic approach** to protecting against crime and rehabilitating offenders through institutional and non-institutional services. Such an approach involved the participation of both the state and the civil society.
- **The Juvenile Justice Act 1986 superseded the various state Children's Acts of 1956.**
- The "chota jails" for destitute children converted into state-run children's homes under the new Act. Subsequent amendments allowed NGOs to set up homes for children under the close

watch of the state.

**The Centre's decision to take over the child helpline service operated by NGOs is not a step in the right direction:**

- **The Childline Foundation** was constituted with members drawn from civil society, academia and the corporate world. It was assigned the toll-free national child helpline number 1098 by Department of Telecommunications
- The NGOs working with street children have the responsibility to operate the helpline. Surveys indicated that children were reluctant to contact a helpline manned by government employees, especially the police.
- Their peers were better positioned to receive these phone calls, comprehend the seriousness of the issue, and determine the exact location of the distressed child.
- Over a span of 25 years, **Childline emerged as the crucial support system for vulnerable children.** It helps orphans, destitute individuals, runaway youths, and lost children.
- When the police encounter an unattended child, they turn to Childline as their initial point of contact. Additionally, the district administration relies on Childline's assistance in rescuing child labourers and aiding drug addicts.
- Concerned citizens can dial 1098 to report children in need of help.

**Mains point: Issues related to children.**

### 4. A job and career right the disabled cannot be denied.

#### Context:

The issue of reservation in promotion for people with disability.

#### The provisions related to reservation for disabled persons:

- The right of the disabled person to be employed and promoted in govern-

ment jobs on equal basis was first recognised by the Persons With Disabilities Act. It introduced a 3% reservation for the disabled in employment.

There was **reservation for disabled in Groups C and D before the PwD Act**. Now, the Act extended reservation for the disabled in Groups A and B.

### The stand of the judiciary on reservation in promotion for disabled persons:

- In 1998, the DoPT made an important interpretation, considering reservation for the disabled in promotions as an essential component of the reservation system.
- But, **reservation of the disabled in promotion in Groups A and B was withdrawn in 2005** by another order of DoPT. It shows the apathetic attitude of the administration towards the disabled.
- SC in its judgement in 2016, granted reservation in promotion in Groups A and B. But the Government of India did not make any effort to implement the judgement.
- A case of contempt was filed in the Supreme Court in 2017. Court challenged the decision in the **Indra Sawhney judgement**.
- As per SC, physical disability as the basis for providing reservation to the disabled is not denied under **Article 16(1)**.
- DoPT issued another order in 2022. Though the order made important clarifications on the reservation of seats for the disabled in recruitment.

### The judiciary need to be proactive in matters of reservation for disabled:

- The judiciary has been instrumental in upholding justice for disabled individuals, particularly following the implementation of the PwD Act in 1995.
- However, in this instance, the judiciary's actions seem to have aggra-

vated the government's indifference towards the needs and aspirations of the disabled community.

The refusal to grant reservations in promotions is an obstacle for disabled individuals' advancement within their respective organisations.

This hindrance undermines the larger objective of inclusivity for the disabled in society. It obstructs their ability to actively contribute to India's development.

### Mains point: Issues related to disabled persons

#### 5. Express View on Ayushman Bharat: A health warning.

##### Context:

The achievements and shortcomings of India's Ayushman Bharat healthcare scheme. It highlights a fraud case at Safdarjung Hospital in Delhi where a doctor deceived critically-ill patients, suggesting the need for better patient awareness and a more compassionate approach.



##### Ayushman Bharat programme:

- The Ayushman Bharat programme addresses health holistically, in primary, secondary and tertiary care systems.
- It covers both prevention and health promotion.
- Two flagship programmes under Ayushman Bharat programme are Health and Wellness Centre and National Health Protection Scheme

##### Health and Wellness Centre:

- The National Health Policy, 2017 has envisioned Health and Wellness Centres as the foundation of India's health



system.

### Objective:

- Under this 1.5 lakh health care centres will be established.

### Budget:

- The Budget has allocated Rs.1200 crore for this flagship programme.

### The achievements of India's Ayushman Bharat healthcare scheme:

- Impact:** Over 5 crore hospitalizations since its inception.
- Financial Relief:** Decreased out-of-pocket health expenses from 62% in 2015 to 47% in 2020.
- Digital Tools:** Health ministry employed AI to detect impersonation and false claims.
- Benefit Outreach:** Provides a solution for financially stressed families and medical migrants.

### The shortcomings of India's Ayushman Bharat healthcare scheme:

- Fraud Cases:** A neurosurgeon at Safdarjung Hospital deceived critically-ill patients. Like, families of the ill are misled into choosing costlier treatments over scheme benefits.
- Delayed Benefits:** Some doctors mislead patients, saying scheme benefits take months.
- Lack of Awareness:** Patients need better understanding of scheme benefits.
- Trust Issues:** Some view hospitals as intimidating, especially during financial stress.

### Way forward:

- Strict Oversight:** Address frauds, like the Safdarjung Hospital incident, through robust monitoring.
- Transparent Communication:** Ensure doctors provide clear information about ailments and treatments.
- Digital Aids:** Continue using AI and other tools to detect impersonation and false claims.

**Patient-Centric Approach:** Make the system more patient-friendly to counteract fear and distrust.

**Mains point: Ayushman Bharat programme**

## 6. "Child, law, and consensual sex"

### Context:

The recent High Court judgements related to the POCSO Act of 2012. It highlights issues with interpreting the age of consent in cases involving minors and suggests the need for clearer guidelines and potential amendments to the act.



### About POCSO Act, 2012:

- The Protection of Children from Sexual Offences Act (POCSO Act)** enacted in 2012. The Act was formulated to effectively address sexual abuse and sexual exploitation of children and pornography.
- In 2019, The Act has been amended. The amendment contains provisions for enhancement of punishments for various offences, provides security and dignified childhood for a child.

### Salient provisions of the Act:

- The Act defines Child as any person below eighteen. The Act remains gender-neutral.
- The Act also defines different forms of sexual abuse:** including penetrative and non-penetrative assault, as well as sexual harassment and pornography.
- The Act deems a sexual assault to be**

**“aggravated”:** If the abused child is mentally ill or the abuse is committed by a person in a position of trust or authority like a family member, police officer, teacher, or doctor.

**The law provides for relief and rehabilitation as soon as the complaint is made.** The Special Juvenile Police Unit or the local police will make immediate arrangements for the care and protection of a child. The arrangements such as obtaining emergency medical treatment for the child and placing the child in a shelter home etc.

**The Act has provisions for Mandatory reporting.** This casts a legal duty upon a person who has knowledge that a child has been sexually abused to report the offence. If he fails to do so, he may be punished with six months’ imprisonment and/ or a fine.

The Act provides for the establishment of Special Courts for the trial of offences under the Act.

The Act prescribes a maximum punishment of life imprisonment or the death penalty. The Act provides a mandatory minimum punishment of three years.

### The Safeguards available to Children:

The Act has provisions for avoiding the re-victimisation of the child at the hands of the judicial system.

The accused has to be away from the child at the time of testifying.

The Act mentions special courts have to conduct the trial without revealing the identity of the child. And also in a child-friendly manner as much as possible.

The child may have a parent or other trusted person present at the time of testifying. The Child can also call for assistance from an interpreter, special educator, or other professional while giving evidence.

The cases must be disposed of within

one year from the date the offence is reported.

### Limitations of POCSO Act:

The POCSO Act is only applicable to child survivors and adult offenders. For example, If two children have sexual relations with each other, or in case a child perpetrates a sexual offence on an adult, **the Juvenile Justice (Care and Protection of Children) Act, 2000**, will apply.

### The issue with the recent High Court judgement related to the POCSO Act of 2012:

**Ignoring Age of Consent:** The High Courts, in certain cases, overlooked the set age of consent. For instance, the Delhi High Court released an accused citing the 15-year-old girl’s willful involvement.

**Consent Complexity:** Judgments have given weight to the “consent” argument, even when involved parties were minors, like the Bombay High Court quashing a conviction involving a 17-year-old.

**Not Prioritizing Vulnerability:** The courts didn’t emphasize the vulnerability of minors or the potential power imbalances in relationships with significant age gaps.

**Overlooking Consequences:** In some judgments, the repercussions faced by the minors, such as early pregnancies, weren’t adequately examined.

**Potential Precedent Issues:** These varied judgments might set diverse precedents, leading to inconsistency in future case rulings.

**Contrary to POCSO’s Objective:** Some rulings might soften the act’s primary objective, which is to protect children from sexual offenses.

### Way forward:

**Clarity from Supreme Court:** There’s a need for a clear directive or guideline from the Supreme Court to ensure uni-

formity in judgments.

- **Re-evaluate Age of Consent:** Consider recommendations on reducing the age of consent from 18 to 16 but ensure this doesn't expose adolescents to potential harm.
- **Data-driven Approach:** The Bureau of Police Research and Development should analyze cases of consensual sex across states to help the Central government make informed decisions.
- **Best Interest of Child:** Prioritize the 'best interest of the child' in all judgments.
- **Balanced Punishments:** Re-examine the severe punishments under POCSO, ensuring they are deterrents but not excessively harsh.
- **Educate Judiciary:** Conduct regular training sessions for the judiciary on the nuances of the POCSO Act.

**Mains point: The Protection of Children from Sexual Offences Act (POCSO Act)**

## 7. Social Security of Elders.

### Context:

The Ministry of Social Justice and Empowerment has informed Lok Sabha about the social security measures taken for elders.

### Elderly Population in India:

- According to the 2011 Census, the population of senior citizens is 10.38 crore amounting to 8.6% of the total population of the country.
- **The National Commission on Population's Report of the Technical Group on Population Projections (2011-2036)** for India and States released in 2020 states that the population of senior citizens in 2036 will be 22.7 crore ie.15% of the total population of India.

### The Social Security measures taken for elderly population:

- **Umbrella Scheme of Atal Vayo**

**Abhyuday Yojana (AVYAY):** It is being run by the Department of Social Justice and Empowerment. It includes components to provide financial security, healthcare, nutrition, shelter, welfare etc. for senior citizens. Important components of the scheme:

- **Integrated Programme for Senior Citizens (IPSrC):** Under this, grant-in-Aid is given to Implementing Agencies for running and maintenance of Senior Citizens Homes where basic amenities like shelter, food, medical care, entertainment opportunities etc are provided free of cost to indigent senior citizens.

- **Rashtriya Vayoshri Yojna (RVY):** Under this, assisted living devices are distributed free of cost, in camp mode, to senior citizens belonging to the families living below the poverty line or having Rs. 15000/- as monthly income and suffering from age related disabilities.

- **Elderline/National Helpline for Senior Citizens (NHSC):** It provides free information, guidance, emotional support and field intervention in cases of abuse and rescues in order to improve the quality of life of senior citizens.

- **Indira Gandhi National Old Age Pension Scheme (IGNOAPS):** It is a part of National Social Assistance Programme (NSAP). It is a Centrally Sponsored Scheme of the Department of Rural Development.

- It provides a monthly pension at the rate of Rs.200/- per month per beneficiary to elderly persons in the age group of 60-79 years belonging to Below Poverty Line (BPL) households. The rate of pension is increased to Rs.500/- per month per beneficiary on reaching the age of 80 years.

- **National Programme for Health Care of the Elderly (NPHCE):** It was launched by the Ministry of Health and Family Welfare in 2010-11 with a view to provide dedicated healthcare ser-



ices to senior citizens at various level of State Health Care delivery system i.e., at Primary, Secondary and Tertiary health care, including outreach services.

### **Mains point: The Social Security measures for elderly population**

## **8. Rehabilitation of Manual Scavengers.**

### **Context:**

The Ministry of Social Justice and Empowerment has informed Lok Sabha about the measures taken to rehabilitate Manual Scavengers.



### **The measures taken by the government of India to rehabilitate Manual Scavengers:**

- **Prohibition of Employment as Manual Scavenger and their Rehabilitation Act 2013:** It bans manual scavenging and hazardous cleaning of sewers and septic tanks.
- **Swachhta Udyami Yojana:** It was launched by the Ministry of Social Justice and Empowerment in 2014.
- **Under the scheme, National Safai Karamcharis Finance & Development Corporation (NSKFDC)** provides concessional loans to safai karamcharis, manual scavengers & their dependents and the Urban Local Bodies & other agencies responsible for cleaning for procurement of sanitation related instruments/vehicles for complete mechanization of all cleaning operations.
- **Self Employment Scheme for Rehabilitation of Manual Scavengers (SRMS):** It is a Central Sector Scheme of the Min-

istry of Social Justice and Empowerment (MSJE). The scheme was introduced in 2007 and was subsequently revised in November 2013 and in 2020-2021.

The objective of SRMS is to provide assistance to the identified manual scavengers and their dependents for their rehabilitation in alternative occupations.

### **The following rehabilitation benefits have been provided under the SRMS Scheme:**

- One-time Cash Assistance of Rs. 40,000/- per family has been provided to all identified and eligible 58098 manual scavengers.
- **Capital Subsidy upto Rs. 5,00,000/-** has been provided to 2313 identified manual scavengers and their dependents to take up alternate self employment projects.
- Skill Development Training has been provided to 22294 identified manual scavengers and their dependents with stipend @ Rs. 3,000/- per month during the training period.
- Health Insurance under **Ayushman Bharat, Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)** to the families of all the identified manual scavengers
- Workshops are organized in municipalities with the officers, engineers, contractors, sanitation workers etc. of urban local bodies to sensitize them about safe and healthy cleaning practices and mechanized cleaning of sewers & septic tanks.

### **Mains point: Measures taken to rehabilitate Manual Scavengers.**

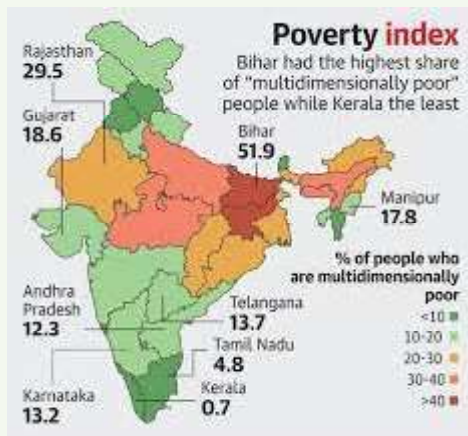


# MISCELLANEOUS ISSUES

## 1. 13.5 crore Indians move out of multi-dimensional poverty in five years: Niti Aayog report.

### Context:

Niti Aayog has published the second edition of National Multidimensional Poverty Index: A progress of Review 2023.



### National MPI (Multidimensional Poverty Index)

- National MPI seeks to measure poverty across its multiple dimensions and in effect complements existing poverty statistics based on per capita consumption expenditure.
- Methodology:** The index has used the globally accepted and robust methodology developed by the **Oxford Poverty and Human Development Initiative (OPHI)** and the **United Nations Development Programme (UNDP)** for **Global MPI**.
- Indicators: The index is based on three equally weighted dimensions – health, education and standard of living – which in turn are represented by 12 indicators.

National MPI 2023 is based on the latest National Family Health Survey (2019-21) and represents progress made by India in reducing multidimensional poverty between the two surveys, NFHS-4 (2015-16) and NFHS-5 (2019-21).

### The key findings of the National Multidimensional Poverty Index 2023:



- About 135.5 million (13.5 crore) persons have exited poverty between 2015-16 and 2019-21.
- In 2015-16, one in four Indians (24.85%)** met the criteria for multidimensional poverty. By 2019-21, this percentage decreased to 14.96% or one in seven.
- Rural areas saw a faster reduction in their MPI value, compared to urban areas. The incidence of poverty fell from 32.59% to 19.28% in rural areas compared to a decline from 8.65% to 5.27% in urban areas between 2015-16 and 2019-21.

- Uttar Pradesh has registered the largest decline in the number of poor with 3.43 crore people escaping multidimensional poverty.
- The number of states with less than 10 per cent people living in multidimensional poverty doubled in the five years between 2016 and 2021.
- In 2015-16 (NFHS-4), only seven states had less than 10% of their population living in multidimensional poverty – Mizoram, Himachal Pradesh, Punjab, Sikkim, Tamil Nadu, Goa, and Kerala.
- In 2019-21 (NFHS-5), the list had doubled to include 14 states, with the seven new additions being Telangana, Andhra Pradesh, Haryana, Karnataka, Maharashtra, Manipur, and Uttarakhand.
- Except for Bihar, no other state in India has more than one-third of its population living in multidimensional poverty.
- Even Bihar has also made remarkable improvement. In 2015-16, over 51.89 per cent of Bihar's population lived in multidimensional poverty. By 2019-21, the figure had dropped to 33.76 per cent.

### Prelims point: National Multidimensional Poverty Index 2023

## 2. Why is Kerch Bridge attack significant?.

### Context:

The Kerch Bridge has come under attack. One section of the bridge was damaged in what the Russians called an attack by two Ukrainian sea drones.

## Kerch Bridge:



- The Kerch Bridge also known as the Crimean Bridge was built by Russia after it invaded and de-facto annexed the peninsula of Crimea from Ukraine in 2014.
- The bridge links the Russian mainland to the Crimean Peninsula in the Black Sea.
- The bridge is a vital supply route for goods heading to the Crimean Peninsula from Russia.

## Kerch Strait:

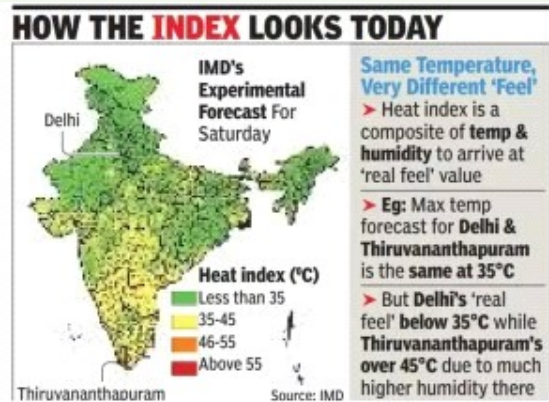
- Kerch Strait is a strait in Eastern Europe.
- It connects the Black Sea and the Sea of Azov, separating the Kerch Peninsula of Crimea in the west from the Taman Peninsula of Russia's Krasnodar Krai in the east.
- The most important harbor, the Crimean city of Kerch, gives its name to the strait, formerly known as **the Cimmerian Bosphorus**.
- It has also been called the Straits of Yenikale after the Yeni-Kale fortress in Kerch.

### 3. IMD has launched Heat Index.

#### Context:

India Meteorological Department (IMD) has launched the Heat Index on an experimental basis.

#### The Heat Index:



- Heat Index is also known as the apparent temperature. It is the temperature humans feel when relative humidity combines with the air temperature.
- For instance, you may experience unusually high levels of heat despite the official temperature forecast indicating a 'normal' range. Say, if the absolute humidity of an area is high, you may feel hot, even though the temperature may not necessarily be that high.
- Similarly, say there is a wind blowing; you will automatically feel colder, even if the temperature may not be so low.

#### The Heat Index be calculated by IMD:

- At present, heat index is derived using the heat index equation similar to what is used by National Weather Service, National Oceanic and Atmospheric Administration (NOAA), USA.

#### The colour codes used for Heat Index:

- The colour codes used for Experimental Heat Index are as follows:
- Green:** Experimental heat Index less than 35 deg C

**Yellow:** Experimental heat Index in the range 36-45 deg C

**Orange:** Experimental heat Index in the range 46-55 deg C and

**Red:** Experimental heat Index greater than 55 deg C.

### 4. Is there a rural bias in national surveys?

#### Context:

A panel headed by Pronab Sen, a former chief statistician of India, was recently formed by the Indian government to review the National Statistical Organization's (NSO) methodology.

#### The government form the panel:

- The government has formed a panel after the shortcomings highlighted by Shamika Ravi and Bibek Debroy in their articles.
- They argue that outdated survey methodology used by **the National Sample Survey (NSS), National Family Health Survey (NFHS), and Periodic Labour Force Survey (PLFS)** have consistently underestimated India's progress.
- They believe the Indian economy has been dynamic in the last 30 years, and the current methodology fails to capture this reality.

#### The methodology used by the National Statistical Organization (NSO):

- National level data are essential for research, policies, and development.** Therefore, it is crucial to thoroughly review and assess the assertions made by various specialists regarding the accuracy of this data.
- Moreover, in order to analyze the claims, the article tries to focus on NFHS data.

#### The NFHS have a rural bias:

- Ms. Ravi and Mr. Debroy have argued

that NFHS which depend heavily on the last Census data, systematically over-estimates the rural population.

However, an examination of five rounds of NFHS data contradicts this claim, showing no systematic bias towards the rural population.

When the NFHS estimates of urban population are compared to World Bank estimates and urban percentage projections from Census statistics from 1991, 2001, and 2011, no indication of systemic rural bias can be found.

On the other hand, it has been found that NFHS-3 underestimated the rural population, while NFHS-2 and NFHS-5 may have overestimated it. However, these errors appear to be random rather than systematic.

### These errors be minimized:

Urban areas tend to have higher percentages of no-response compared to rural areas. However, this is not related to either rural or urban bias in estimation.

An analysis of the percentages of the urban sample in the unweighted sample suggests that giving proper weights may assist in significantly addressing the errors.

Hence, by appropriately assigning sample weights after considering all potential sources of error, the underrepresentation of rural or urban areas can be significantly rectified.

### The way ahead:

**The Pronab Sen Committee** should prioritize addressing concerns regarding sample representation rather than completely overhauling the survey methodology. Otherwise, there is a risk of introducing a systematic urban bias in policymaking, planning, and financing.

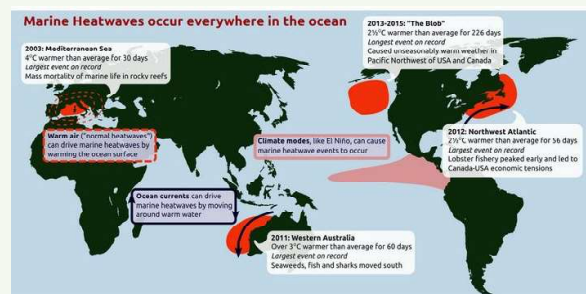
## Prelims point: the National Statistical Organization (NSO)

### 5. What are marine heat waves, which have gripped parts of the world's oceans this summer?

#### Context:

Since April 2023, ocean temperatures have remained at record-high levels giving rise to Marine Heat Waves (MHWs) around the globe.

#### Marine Heat Waves (MHWs):



A marine heat wave is an extreme weather event. It occurs when the surface temperature of a particular region of the sea rises to 3 or 4 degree Celsius above the average temperature for at least five days. MHWs can last for weeks, months or even years.

#### The impact of marine heat waves on ocean life:

An increase of 3 or 4 degrees Celsius in average temperatures may not impact humans a lot. But it can be catastrophic for marine life.

For instance, MHWs along the Western Australian coast during the summer of 2010 and 2011 caused unexpected death of many fish or other aquatic animals over a short period of time.

Another example is when high ocean temperatures in the tropical Atlantic and Caribbean in 2005 led to a massive coral bleaching event. A 2010 study showed that more than 80% of surveyed



corals had bleached and over 40 per cent of the total surveyed had died.

- MHWs also fuel the growth of invasive alien species, which can be destructive to marine food webs.

### The marine heat waves affect humans:

- Higher ocean temperatures, which are associated with MHWs, can make storms like hurricanes and tropical cyclones stronger.
- With warmer temperatures, the rate of evaporation escalates and so does the transfer of heat from the oceans to the air. When storms travel across hot oceans, they gather more water vapour and heat.
- This results in more powerful winds, heavier rainfall and more flooding when storms reach the land – meaning heightened devastation for humans.

### The global warming affecting marine heat waves and oceans:

- According to a 2018 study titled 'Marine heatwaves under global warming' due to increase in global temperatures, MHWs have become longer-lasting, more frequent and intense in the past few decades. The study has also attributed 87 percent of MHWs to human-induced warming.
- Moreover, according to Copernicus Climate Change Service, oceans have absorbed 90% of the additional heat caused by the release of greenhouse gases into the atmosphere from burning fossil fuels and deforestation in recent decades. This has increased the global mean sea surface temperature by close to 0.9 degree Celsius since 1850.
- Hence, as global air temperatures increase, so will ocean temperatures leading to more MHWs.

### Prelims point: Marine heat waves

## 6. Himachal floods: a man-made disaster?

### Context:

Flash floods during this year's monsoon season have caused unprecedented damage to both lives and assets in Himachal Pradesh.

### The climate change is contributing to disaster:

- As per IPCC VI report, the impact of climate change on Himalayas and coastal regions of India will be high. In the Himalayas, there is a noticeable pattern of increased precipitation occurring in shorter periods of time.

### The anthropogenic factors have also significantly contributed to the disaster:

- The State implemented its own development model after 1971. The focus of the model was land reforms, robust state-led investment in social welfare, and a strong emphasis on human resources.
- However, things changed after liberalisation. Central government advocated for stringent fiscal reforms. It forced the mountain States to generate their own resources for fiscal management.
- This led to the rapid construction of hydropower projects, widening of roads without proper geological and engineering assessments, expansion of cement plants, and a shift in agricultural practices to cash crop economies.

### The impacts of hydropower generation:

- Prior to 2000, multilateral agencies were opposed to financing large hydropower projects. But, they started providing funding for such ventures, making finance readily available for these projects.
- These hydropower projects are one of the main reasons for the devastating impact of floods in the region.

- The dams are based on **“run of the river” technology**. Water is diverted through tunnels burrowed into the mountains. The excavated material is disposed of along the riverbed
- During periods of higher precipitation or cloudbursts, the water returns to the river. The dumped material is carried along with it.
- Moreover, long tunnels have been commissioned on **the Sutlej river**. These are responsible for significant harm to the entire ecosystem.
- Currently, **there are 168 hydropower projects in operation**. As per projections; by 2030, 1,088 hydropower projects will be commissioned to harness 22,640 MW of energy.

### The impacts of tourism:

- The development-driven road expansion is aimed at promoting tourism.
- **This development model follows a PPP approach**. There is focus on completing these projects rapidly. Essential geological studies and mountain engineering skills are bypassed.
- Traditionally, mountainous regions are not cut with vertical slits. They are terraced. It minimises the damage to the environment.
- Unfortunately, vertical cutting of mountains has been done in case of four-lane projects in Manali and Shimla. It is leading to massive landslides and damage to existing roads.

### The change in crop patterns is contributing to disasters:

- **Many farmers are now opting for cash crops instead of traditional cereal farming**. It poses challenges in transporting these perishable crops to markets.
- In response to this demand, roads are being hastily constructed without considering necessary factors like land cut-

ting and gradient requirements.

- Modern excavators are used in the construction process, but proper drainage systems and designated areas for muck disposal are not created.
- It is important to note that while the total designated road length in the state is approximately 1,753 km, the total length of all roads, including link and village roads, exceeds 40,000 km.

### Way forward-

- An Inquiry Commission should be established to engage the main stakeholders for addressing both policy framework shortcomings and specific aspects of the undertaken projects.
- A **new approach** is necessary to empower local communities and grant them control over their assets.
- Losses incurred in culverts, village drains, small bridges, schools, and other social infrastructure must be compensated. It can be achieved through insuring the assets and entrusting their care to local communities.
- It is essential for humans to take responsible actions in infrastructure planning to prevent the disasters **witnessed by the State since June**.

### Mains point: Flash floods

## 7. Two Indian military aircraft visit Australia’s strategic Cocos Islands”

### Context:

Indian Navy Dornier maritime patrol aircraft and an **Indian Air Force (IAF) C-130** transport aircraft have visited **Australia’s Cocos (Keeling) Islands (CKI)** in the Southern Indian Ocean.

## Cocos (Keeling) Islands (CKI):



- **Cocos Islands** also called **Keeling Islands** is an external territory of Australia in the Indian Ocean.
- It comprises a small archipelago approximately midway between Australia and Sri Lanka and relatively close to the Indonesian island of Sumatra.

- The islands were discovered in 1609 by **the British sea captain William Keeling**, but no settlement occurred until the early 19th century
- The island consists of two atolls made up of 27 coral islands, of which only two – West Island and Home Island – are inhabited.

### The strategic significance of Cocos (Keeling) Islands for India:

- Cocos can be an important base for re-fuelling and operational turnaround for the Indian military, especially once the runway there is expanded to accommodate large aircraft like the P-8 long range maritime patrol aircraft.
- Apart from military cooperation, Cocos Islands had been a point of cooperation between the space agencies of the two countries for **India's Gaganyaan human space flight mission**.
- Australia is in discussion with India on the establishment of a temporary ground station at Cocos (Keeling) Islands for the Gaganyaan missions.

**Prelims point: Cocos (Keeling) Islands**